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SPECIAL ISSUE IN MEMORY OF PROFESSOR V.M. DANDEKAR

FROM THE EDITOR

We, at the ISPE, do hope all of you are doing well but taking all care. Even today, we admit that our Journal Issues are delayed but only by a little more than a year. Having said that, let me assure you that we shall bring out the 2021 Volume (all Issues) by the middle of this year, maybe June or July. The first three Issues (January-March, April-June and July-September) are being brought out as a combined Issue now. This contains papers/ pieces in memory of Prof. V.M. Dandekar, our Founder Director, Founder Editor of the Journal and a Founder Trustee. One of them focusses on a theme that Prof. Dandekar worked on while the second one discusses a new but emerging theme - keeping in mind that Prof. Dandekar, more especially in the last two decades of his research and writing, tried his hand at new ideas that had emerged earlier or were emerging but which interested him in terms of his intellectual pursuits in academics. The remaining pieces seek to go down memory lane and recall all that each author has felt about this great personality and how they benefitted from his approach to life in general, not just in academic pursuits. As followed in the 2020 Volume, some of his published contributions to academic writing as also Reports appear in the Documentation part of this combined Issue.

On a personal note, I must say that my interaction with him lasted for a little more than a decade in the 1980s and early 1990s but one which enabled me to absorb a ‘never give up’ approach to issues in teaching and research. Such an approach helped me tremendously in my professional career later, not just as an academician but as a consultant to many public and private organisations and also as a social activist. At the ISPE, we are all the time talking and remembering about him in terms of some aspect of our work that we carry on here to keep his legacy alive.

S.Sriraman

June 2022

COMPARING ECONOMIC PROGRESS IN MAHARASHTRA AND GUJARAT, 1960-61 TO 2019-20

Ravindra H. Dholakia

The paper considers economic progress in all its five connotations, viz. volume of economic activities, efficiency of resource use, wellbeing of people, stability of the growth path, and sustainability of growth over long period, and compares the performance of Maharashtra and Gujarat over the last six decades. It is found that Gujarat clearly emerges as a better performer because it has outperformed Maharashtra in almost all dimensions except educational indicators. This comparison of the two states leads to two interesting hypotheses to be tested through future research. The first one is that states that focus their policies directly on the volume and efficiency aspects perform better over the long period in other aspects of economic progress than those that focus on a few welfare indicators. The other hypothesis is that bifurcation of a large state is more helpful to the smaller state than the bigger one over the long period.

I. INTRODUCTION

Economic progress is one of the most prominent goals of public policies in any economy. As a concept it includes several desirable features of the development of an economy over time. Perloff [1957] identified three basic features of the process such that they become connotations of the term 'economic progress' that would help its measurement and eventually comparison over time and across economies. These three connotations were: (i) volume of economic activities; (ii) efficiency of use of scarce resources; and (iii) economic wellbeing of people in the economy. Even with these three basic ingredients of the term, it is increasingly realized that satisfactory measurement of economic progress in any economy is not possible with a single aggregate or indicator. Gross Domestic Product (GDP) or related income measures can satisfactorily consider the volume and to a large extent the efficiency aspects but cannot fully reflect the economic wellbeing of people. Similarly, indicators and metrics that reflect economic wellbeing of people often fail to capture volume and efficiency aspects of economic progress in an economy.

Over time, the term 'economic progress' has evolved to be more complex to expand its connotations to include two more features: (iv) stability of economic activity levels; and (v) sustainability of

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the process over a long period of time. While stability is relatively a well-defined concept, sustainability is necessarily linked to the length of the period. However, with these two additional aspects, the term ‘economic progress’ simply cannot be measured satisfactorily by a single (or even a composite) indicator or metric.

In the present paper, we consider the volume, stability, efficiency, wellbeing and, to a certain extent, sustainability aspects of economic progress of the two major state economies - Maharashtra and Gujarat - over the last six decades of their separate existence. The next section briefly describes and compares the relative positions of the two state economies to provide the background. The third section compares the volume and stability of economic activities during phases of economic growth history of the two states. The fourth section considers the efficiency of resource use in the two states by considering allocation across sectors, geography, and final use of production. The fifth section then compares the economic wellbeing in the two states by considering various indicators such as migration, unemployment, cost of living, poverty, inequality, slums, health indicators, education indicators, crime rates, and so on. The sixth and the last section then summarises main findings and ends with concluding remarks.

II. BASIC FACTS ABOUT MAHARASHTRA AND GUJARAT[1]

Maharashtra and Gujarat were formed as separate states from the erstwhile Bombay state on 1st May 1960. Both these states have been major state economies in the country ever since their separate existence. After Rajasthan, Maharashtra has almost the second largest geographical area of about 3.08 lakh km,[2] whereas Gujarat has the seventh largest area of 1.96 lakh km.[2] As a proportion of the country’s total geographical area, Maharashtra has about 9.4% and Gujarat about 6%. As per the Census of 2011, Maharashtra has 9.3% and Gujarat about 5% of the country’s population. Maharashtra is the second most populated state, whereas Gujarat is the tenth most populated state in the country. Although Maharashtra has 365 persons per km^2 compared to 308 persons per km^2 in Gujarat, both the states have lower density of population compared to 382 persons per km^2 in the country. The latest inter-census growth of population during 2001-11 was recorded at 19.3% for Gujarat, 16% for Maharashtra and 17.7% for the country. It is worth noting that the latest estimates of the Fertility Rate for 2018 show that Gujarat (2.1) has a lower rate than the country (2.2), although its population growth is higher than the country over the decade. For the year 2018, the birth rate and death rate in Gujarat were respectively 19.7 and 5.9

per thousand population yielding the natural rate of population growth to be 1.38% and the same figures for the country and Maharashtra are respectively 20.0, 6.2 and 1.38% and 15.6, 5.5 and 1.01%. As we can see, natural growth rate of population during the last decade is declining in India and both these states though the rate of decline is sharper in Maharashtra and Gujarat than the country.

Gujarat has a lower sex ratio (919 females per 1000 males) than Maharashtra (929) which in turn is lower than the country (943) as per 2011 Census. One of the possible reasons for this could be higher proportion of urban population in Maharashtra (45.2%) and Gujarat (42.6%) than in the country (31.1%). Moreover, the proportion of the Scheduled Castes and Scheduled Tribe population is significantly lower in Maharashtra (21.2%) and Gujarat (21.5%) than the country (25.3%).

There is a sharp difference between the two states in the proportion of main workers to population and in terms of female worker population ratio. The former is as high as 38.9% in Maharashtra and 33.7% in Gujarat compared with the country's figure around 30%. The latter is again as high as 31.1% in Maharashtra and only 23.4% in Gujarat with the country's figure at 25.5%. It is the female labour force participation that pulls up the worker rate in Maharashtra but pulls it down in Gujarat. One of the possible reasons for this could be the proportion of agricultural workers in total workers. This proportion is high at 53% in Maharashtra but 49.6% in Gujarat as per 2011 Census. This is consistent with the latest data on (i) higher proportion of Net Sown Area to Total Geographical Area in Maharashtra (55%) than in Gujarat (52.5%); (ii) higher cropping intensity in Maharashtra (1.37) than in Gujarat (1.16); and (iii) higher forest cover in Maharashtra (16.5%) than in Gujarat (7.6%).[2] However, the average size of operational holding is significantly lower in Maharashtra (1.34 hectare) than in Gujarat (1.88 hectare) in 2015-16 and so also for the fertilizer consumption per hectare of Gross Cropped Area of only 121 kg in Maharashtra and 134 kg in Gujarat in 2016-17.

The Annual Survey of Industries, 2017-18 [as quoted by DES Maharashtra (2021)] shows that Maharashtra has 26,393 factories and Gujarat has 26, 586 factories, each state contributing almost 11% of total factories in the country. Thus, although the two states together account for only 14% of the country's population, they have more than 22% of factories in the country. Moreover, they employ about 28.18 lakh workers accounting for 23% of workers in factories in the country. It is interesting to note that gross output per worker is significantly higher in Gujarat (Rs. 96.92 lakhs) than in Maharashtra (Rs. 84.81 lakhs), but that the net value added per worker is significantly lower in Gujarat (Rs. 13.04 lakhs) than in Maharashtra (Rs. 15.82 lakhs). Thus, factories in Gujarat in aggregate are more capital and input intensive than in Maharashtra. This is consistent with substantially higher per capita consumption of industrial electricity in Gujarat (850 MW) than in Maharashtra (379 MW). Similarly, the Sixth Economic Census shows that (i) total establishments per lakh of population in Maharashtra (5,462) are significantly lower than in Gujarat (6,573); and (ii) total employment per lakh of population is also lower in Maharashtra (12,914) than in Gujarat (15,897).

In the tertiary sector, we find that the number of bank branches per lakh of population in Maharashtra (10.6) is less than in the country (11.0) and in Gujarat (12.1). However, the credit-deposit ratio in Maharashtra (102.0) is significantly more than in the country (76.5) and in Gujarat (74.8). This may be interpreted to mean that Maharashtra is a net consumer of the bank credit, but Gujarat is a net supplier of the bank credit. While the road length per 100km^2 is substantially higher in Maharashtra (204km) than in the country (162km) and Gujarat (103km), the number of motor vehicles per lakh of population as of March-end 2018 is significantly higher in Gujarat (37,307) than in Maharashtra (29,087) and in the country (22,269). This may be due to (i) better quality of roads; and (ii) higher proportion of the middle-income group in Gujarat than in Maharashtra and in the country. As on March-end 2020, Gujarat has a substantially higher railway route per 100 km^2 (2.70km) than in the country (2.07 km) and Maharashtra (1.89 km). However, if we combine the rail and road network, development in Gujarat substantially lags behind the one in Maharashtra.

Finally, we may consider some parameters of public finance in the two state economies. Both the state economies are very similar in this respect and are performing far better than all states taken together. For the year 2019-20, state's own tax receipts as a proportion of total revenue receipts are 64.4% in Maharashtra and 64.9% in Gujarat compared to only 45.6% for the country's average. Thus, the degree of financial autonomy enjoyed by both the states is similar and much higher than most other states in the country, since the contribution of the state's own taxes is almost double the one through transfers from the Centre in these two states as compared to other states where the state's own taxes contribute less than transfers from the Centre. Proportion of development expenditures in the total expenditure of the state is higher in Gujarat (66%) than in Maharashtra (63.7%). The ratio of the fiscal deficit to Gross State Domestic Product (GSDP) is significantly lower in Gujarat (1.6%) than in Maharashtra (2.7%). However, this may be due to a significantly lower debt-GSDP ratio in Maharashtra (16.6%) than in Gujarat (19.8%) and in the country's average (26.3%).

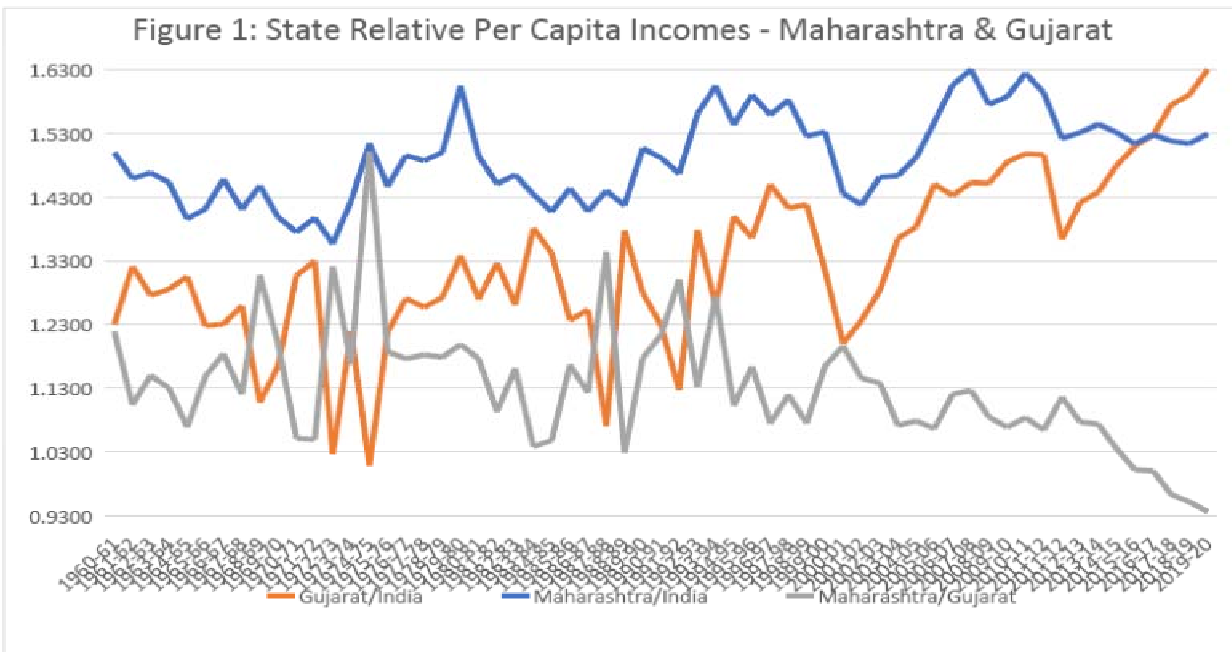
Keeping these basic facts in the background, we may now examine different aspects of the economic progress made in the two state economies in the following three sections of the paper.

III. VOLUME AND STABILITY OF ECONOMIC ACTIVITIES

A very satisfactory measure of the level of aggregate economic activity in an economy is the Gross Domestic Product (GDP) at the national level and GSDP at the state level. In 1960-61, when Maharashtra and Gujarat were formed as separate states, their contribution to the national GDP was respectively 13.5% and 5.8%. Both the states had higher per capita GSDP than the country, but Maharashtra's per capita GSDP was about 50% higher than the country and about 22% higher than Gujarat. Thus, Maharashtra was clearly a larger and more prosperous economy than Gujarat when they separated in 1960. However, over the last six decades with economic growth and development taking place everywhere in the country, the relative position of the two states also changed. By the year 2019-20, in the national real GDP, the contribution of Maharashtra has increased to 14.2% and of Gujarat to 8.2%. The real per capita GSVA of Maharashtra is now about 53% higher than the country but about 6.4% lower than Gujarat. The real per capita GSVA of Gujarat is 63% higher than the country. It appears that, while Maharashtra has prospered more than the country, Gujarat's prosperity has far surpassed Maharashtra and the country over the last six decades. However, such conclusions need closer examination.

Comparison of regional economic data should not be made based on two endpoints, because they are prone to heavy annual fluctuations. National economic data are likely to be more stable than individual states because they represent aggregates and interstate variations in opposite directions may have cancelling effects. Even the comparison of the economic performance of two states must recognize that movements in their economic aggregates may not be synchronized but could be in the opposite directions. It is, therefore, always advisable to consider either a timeseries of data or take some average values over time for better comparisons. To substantiate this point, we consider Figure 1 that provides the ratio of per capita real GSDP to the per capita real national GDP (known as state relative incomes) for Maharashtra and Gujarat for every year from 1960-61 to 2019-20. Comparable estimates of the time series of real GSDP in the two states as derived in the Appendix at the end of the paper are used for the purpose along with the estimates of real GDP from the Economic Survey 2020-21 published by Government of India.

Figure 1. State Relative Per Capita Incomes - Maharashtra & Gujarat



Source: Appendix including the two Appendix Tables at the end of the paper; and GOI

It can be seen from the chart that the series for both the states show heavy annual fluctuations and that these fluctuations are often not in the same direction. The Maharashtra series of per capita income differential with the national per capita income fluctuates from the high of 1.6365 in 2007-08 to a low of 1.3569 in 1972-73. On the other hand, Gujarat series fluctuates from a high of 1.6329 in 2019-20 to a low of 1.0088 in 1974-75. If we consider the ratio of Maharashtra's per capita income to Gujarat's per capita income, it fluctuates from the high of

1.5010 in 1974-75 to the low of 0.9364 in 2019-20. Moreover, the coefficient of correlation between the two state relative incomes over the whole period works out to +0.5698 with the coefficient of determination of only 32% implying that variation in one series explains only 32% of the variations in the other. Similarly, coefficient of variation in Maharashtra's relative income to the nation over the whole period is 4.5%, which is less than half of the same for Gujarat's series (9.8%). Therefore, selecting any one year to compare relative economic performance of state economies should not be considered a valid comparison. However, in the present case, as the Figure 1 shows, for the last three consecutive years, Gujarat's per capita Real GSVA is not only higher than Maharashtra but also the gap between the two is consistently increasing.

To capture the volume of economic activities over the period of economic progress in a state economy, we must consider behaviour of economic growth rate over time. This can be done by considering different phases of growth and comparing the state performance with the nation during each phase. Methodologically, we can identify the break points in the state real income series either exogenously or endogenously. We prefer endogenous identification of the break points because they are determined by the behaviour of the state's own real GSDP series and hence incorporate the most influential factors in totality and their impact on the economy with all variable lagged responses. In the exogenous identification of the break points, on the other hand, considerations external to the state may play a critical role and the impact lags in the economy's response to them become hypothetical. It is, therefore, better to identify the break points and hence different phases of economic growth in each state endogenously. We have followed the Bai-Perron method to identify the break points for each of the two states endogenously [Bai and Perron, 1998 and 2003; Dholakia and Sapre, 2011].[3]

As per the Bai-Perron methodology, we consider the time series of real GSDP at 2004-05 base from 1960-61 to 2011-12 for both the states and take their natural logarithm to get a log-linear trend equation. Then we apply their algorithm to obtain the optimal choice of trend-break points with given length of series (parameter "h" in the Bai-Perron algorithm).

While Bai-Perron use h=8 for their estimation, we have considered h=8 and h=9 as alternatives to ensure that the identification of break points is not affected by the alternative values. The choice of the optimal number of break points (parameter "m") is made with the help of two criteria: Residual Sum of Squares (RSS) and Bayesian Information Criterion (BIC) for alternative values of "m". The statistical fit is highly significant for both the states with adjusted R^2 greater than 0.998. Both RSS and BIC are at the minimum and give the unique optimal choice of the number of break points to be three for Maharashtra and Gujarat during 1960-61 to 2011-12. The exact break points identified endogenously for the two states are not identical but marginally differ. The endogenously identified break points and hence the different growth phases in Maharashtra are: 1. 1960-61 to 1973-74; 2. 1973-74 to 1987-88; 3. 1987-88 to 1999-2000; 4. 1999-00 to 2011-12; and 5. 2011-12 to 2019-20.[4] The break points and hence the different growth phases identified for Gujarat are: 1. 1960-61 to 1971-72; 2. 1971-72 to 1984-85; 3. 1984-85 to 1999-00; 4. 1999-00 to 2011-12; and 5. 2011-12 to 2019-20.

To examine the growth performance of a state compared to the nation during a given phase of its growth identified as above, we get an instantaneously compounded annual trend rate of growth (ATRG) by fitting a log-linear trend line on the total GSDP and its three broad sectors: (i) primary sector consisting of agriculture and allied activities such as animal husbandry, forestry and fishery and mining and quarrying; (ii) secondary sector consisting of manufacturing, construction and electricity, gas and water supply; and (iii) tertiary sector consisting of the rest of the economy with service sectors such as trade and transport, banking and finance, real estate and public administration and other services including health, sanitation, education, business and personal services. Table 1 presents the ATRG for total GSDP and its three broad sectors for Maharashtra and all India during each of the five above-mentioned growth phases in Maharashtra. The data on Indian real GDP by sectors is obtained from the National Accounts Statistics (NAS) [MoSPI, 2021] and the data on real GSDP for Maharashtra is taken from Appendix Table 1 below.

Table 1. Instantaneously Compounded Annual Trend Rate of Growth (ATRG) by Phases in Maharashtra and India

(in %)

Phases	Geography	Total RGSDP@		Primary Sector		Secondary Sector		Tertiary Sector	
		ATRG in %	RSS/ SS	ATRG in %	RSS/ SS	ATRG in %	RSS/ SS	ATRG in %	RSS/ SS
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
I. 1960-1974	Maharashtra	3.03	0.0279	(-) 0.58*	0.9404	4.16	0.0112	4.19	0.0031
	All India	3.35	0.0266	2.09	0.2264	4.7	0.0361	4.25	0.006
II. 1973-1988	Maharashtra	3.91	0.0174	1.24*	0.6379	4.26	0.031	4.78	0.0052
	All India	4.16	0.016	2.64	0.1255	4.6	0.0185	5.41	0.0073
III. 1987-2000	Maharashtra	6.52	0.0103	4.26	0.2147	6.34	0.0186	7.33	0.0032
	All India	5.74	0.0084	3.58	0.042	6.02	0.0168	7.03	0.0096
IV. 1999-2012	Maharashtra	8.28	0.0224	4.06	0.1383	8.31	0.0617	9.06	0.0104
	All India	7.4	0.0086	3.23	0.044	8.26	0.0088	8.62	0.0065
V. 2011-2020	Maharashtra	6.36	0.0025	2.84	0.2289	6.10	0.0181	7.53	0.0018
	All India	6.49	0.0044	3.47	0.0239	6.02	0.0256	7.85	0.0031

Note: *Not significant at 1% level of significance. The rest of the ATRG coefficients are significant at 1% level; @ For Phase V, the concept is Real GSVA at basic prices which is similar to GSDP at factor cost; RSS = Residual Sum of Squares; SS = Total Sum of Squares. The values of RSS/SS would always be between 0 and 1.
Source: Author's Calculations from Appendix Table 1 below and MoSPI (2021).

Table 1 clearly shows that growth of real income in Maharashtra fell short of the country during the first two phases of its growth history. Maharashtra not only had a poor growth (statistically not different from zero) rate in its agriculture, but also less than the national growth rate in its industrial and services sector during the pre-reform period (1960-88). Although the state experienced a significant acceleration in its trend growth by about 88 basis points (bps) from 3.03% in Phase I to 3.91% in Phase II, the nation also experienced an acceleration of 81 bps during the same period. The distance in the growth rates between Maharashtra and the country reduced in the secondary sector but increased in the tertiary sector during Phase I and II.

It was only after economic policy reforms initiated from the mid-1980s that Maharashtra's economy picked up its growth momentum of a significant acceleration of 261 bps in Phase III (1987-00). The nation also experienced acceleration of 158 bps during the same period but the performance of Maharashtra exceeded the nation in all the three sectors. The turnaround was particularly spectacular in Maharashtra's agriculture where it exceeded the nation's growth by 68 bps. The growth momentum continued in the Phase IV (1999-2012) both in Maharashtra and the nation. Maharashtra economy experienced a further acceleration of 176 bps which is similar to 166 bps in the nation. Again, Maharashtra's performance remained superior to the nation in all the three sectors, but agricultural growth could not be sustained and marginally declined in both the state and the nation.

In the Phase V of the Maharashtra's growth history (2011-20), the separate treatment of which is largely dictated by statistical considerations, Maharashtra's growth is similar to the nation's and showed 192 bps deceleration in the state and 91 bps deceleration in the nation. Unfortunately, agricultural growth in the state fell sharply by 122 bps though it showed a marginal acceleration by 24 bps in the nation. Similarly, the growth in the service sector fell sharply by 153 bps in the state compared to only 77 bps in the nation. However, the major cause of concern is the growth deceleration in the secondary sector in both the state and the country. The growth decelerated by 221 bps in Maharashtra and 224 bps in the nation during phase V compared to phase IV.

Thus, overall growth performance of Maharashtra has not been outstanding compared to the national average. Its relative position compared to the nation in per capita real income has remained around 1.5. The economic policy reforms initiated in the country since the mid-1980s helped the state to gain momentum and achieve substantial acceleration in economic growth. However, gains in growth momentum were almost lost during the last decade. Compared to the pre-reform period, the major difference in the state's growth pattern during its last three phases is that the growth of industrial sector is above the national average and agriculture is recording a decent growth.

Table 1 also provides estimates of the measure of stability of the growth of the state and national economy by sectors in each of the five phases of growth in Maharashtra. The statistic (RSS/SS) measures the deviations of the actual observations from the fitted trendline adjusted for the sign and size of total variations in logarithmic terms and hence can reflect the stability of the economy around the growth path. Its value always lies between 0 and 1. Lower the value, higher is the stability and *vice versa*. Higher stability of the growth path is better for the economy because it provides more stable economic environment for the investors and all economic agents to form their expectations with less probability of errors and hence provides more confidence for decision making.

As expected, in each of the first four growth phases, the nation shows higher stability than the state for the growth of total real income. Stability improved consistently in the nation and the state from Phase I to III. However, during the Phase IV (1999-2012), stability of the overall growth declined considerably in the state but only negligibly in the nation. During Phase I and II of growth, Maharashtra had lower growth and lower stability than the nation. The situation improved during Phase III and IV when Maharashtra had higher growth but lower stability than the nation. During Phase V, however, the reverse happened. Maharashtra has marginally lower growth but more stability in the state than the nation. The improvement from Phase II to III in the state was excellent because of substantial acceleration in the state was achieved with remarkable increase in stability. Although Maharashtra achieved its highest overall growth during Phase IV, the improvement in its growth accompanied reduction in stability. Between Phase IV and V, while the stability of growth path considerably improved, the overall growth significantly decelerated.

In terms of stability of sectoral growth paths, Maharashtra's agriculture shows high degree of fluctuations during all its phases of growth. However, Phase III and IV (1987-2012) is perhaps the best period for its agriculture since it is a period with high growth and relatively high stability. In the industrial sector, the improvement from Phase II to III in the state is particularly notable because the growth accelerated substantially by 208 bps accompanied by significant improvement in stability. In Phase IV, the growth improved but the stability declined; and in Phase V the stability improved remarkably but the growth declined significantly. The same story is found in the state's tertiary sector also.

Now we may examine the growth experience in Gujarat by considering its growth phases. Table 2 summarises the growth experience in Gujarat as Table 1 does for Maharashtra. The data for calculations are taken from Appendix Table 2 below.

Table 2. Instantaneously Compounded Annual Trend Rate of Growth (ATRG) by Phases in Gujarat and India

(in %)

		Total RGSDP@		Primary Sector		Secondary Sector		Tertiary Sector	
Phases	Geography	ATRG	RSS/ SS	ATRG	RSS/ SS	ATRG	RSS/ SS	ATRG	RSS/ SS
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
I. 1960-1974	Gujarat	3.64	0.1957	3.80	0.4594	3.24	0.1387	3.50	0.0209
	All India	3.53	0.0306	2.21	0.2797	5.15	0.0264	4.39	0.0061
II. 1973-1988	Gujarat	5.36	0.1365	5.01	0.4257	5.71	0.0554	5.94	0.0192
	All India	3.90	0.0251	2.75	0.1419	2.19	0.0289	4.85	0.0052
III.	Gujarat	6.48	0.0688	3.57*	0.6140	8.55	0.0294	7.25	0.0125
1987-2000	All India	5.61	0.0056	3.53	0.0275	5.95	0.0097	6.89	0.0058
	Gujarat	9.26	0.0132	6.17	0.1286	10.18	0.0329	9.71	0.0085
IV.	All India	7.40	0.0086	3.23	0.0440	8.26	0.0088	8.62	0.0065
1999-2012	Gujarat	8.70	0.0023	6.23	0.1067	10.26	0.0089	8.15	0.0024
	All India	6.49	0.0044	3.47	0.0239	6.02	0.0256	7.85	0.0031
V. 2011-2020									

Note: * Statistically significant at 2.5% level. The rest of the numbers for ATRG in the table are significant at 1% level; @ For Phase V, the concept is Real GSVA at basic prices which is similar to GSDP at factor cost; RSS = Residual Sum of Squares; and SS = Total Sum of Squares. The values of RSS/SS would always be between 0 and 1.

Source: Appendix Table 2 below; and MOSPI (2021)

Table 2 clearly shows that Gujarat's economy grew at a higher rate than the national average in each of its five growth phases. Moreover, it experienced growth acceleration during all phases from its Phase I to II to III to IV. In Phase V, which is separately considered only on statistical grounds, its growth rate showed a marginal decline (56 bps) from Phase IV. In terms of stability of the growth path, in each of the first four phases, Gujarat displayed lower stability than the national average, but during Phase V of its growth, stability of Gujarat's growth path was better than the national average. Stability of Gujarat's growth performance has been improving consistently from its growth Phase I to Phase V. The economic progress in Gujarat is characterised by the state achieving higher growth with improved stability throughout the five phases of its growth history.

Among the three broad sectors, the industrial sector in Gujarat stands out with consistently accelerating growth rates during each of its five growth phases and improving stability except in Phase IV. Primary sector in the state also experienced accelerated growth from phase to phase except Phase III when the growth experienced a sharp deceleration with increased instability in its growth path. Otherwise, the agricultural sector in the state showed consistent improvement in the stability around its growth path. The tertiary sector in the state also showed consistent acceleration in growth over the first four phases with improvement in the stability of the growth path. In Phase V, however, the service sector in the state experienced a deceleration in its growth but continued to improve the stability of the growth path.

Comparing the economic progress of the two states in terms of volume and stability aspects, Tables 1 and 2 above bring out that Gujarat scored over Maharashtra in growth of volume of economic activities during the first two phases of growth history but achieved it only with lower stability. During the Phase III, Maharashtra had achieved higher growth with better stability than Gujarat. However, during Phase IV and V, Gujarat outperformed Maharashtra both in growth and stability. This is also seen in the behaviour of the state relative incomes over the last six decades in Figure 1 above. In the agricultural sector, Gujarat's performance was better than Maharashtra both in growth and stability in all phases except Phase III when Maharashtra scored over Gujarat in both. In the industrial and service sectors, Gujarat was outperformed by Maharashtra both in growth and stability in the first phase; and in the fourth phase, it was the reverse. In Phase II and III, Gujarat scored over Maharashtra in growth of Industrial and Services sector, but Maharashtra did better in stability of the growth path. During the phase V, Gujarat did better in both growth and stability of Industrial sector than Maharashtra. The Service sector in Gujarat had higher growth but lower stability than Maharashtra during phase V.

IV. EFFICIENCY OF RESOURCE USE

When the economic progress occurs in an economy, the dynamic forces invariably ensure a systematic reallocation of its scarce resources. As the volume of economic activities increases leading to growth in production of goods and services, the scarce resources get reallocated from relatively slower growing or decaying activities to faster growing activities. Colin Clark (1940) had proposed his well-known sector hypothesis of the relative decline of agricultural sector and relative growth of the industrial and service sectors in the process of economic development of an economy. He provided the explanation of such a systematic shift in terms of changing demand pattern based on the changing consumption pattern of people as their incomes rise. At the root of the explanation of the sector hypothesis lies an empirical observation based on the Engel Law that the agricultural goods whether in the form of final consumption (food) or intermediate consumption (raw materials) are more or less necessities and hence income inelastic. On the other hand, the industrial goods and products of service sector in the aggregate are like comforts and luxuries and hence are income elastic. Once such an empirical assumption is made, Clark's sector hypothesis follows only if we assume a large but closed economy. The empirical assumption and the sector hypothesis were tested and validated first by Kuznets (1957) and have been widely supported empirically for most of the nations subsequently.

When it comes to applying the sector hypothesis to a sub-national economy such as a state or a district, however, the exclusive demand side explanation would not be convincing. This is because sub-national economies are most likely open economies with very high degree of trade flows across their geographical boundaries even when the nation is largely a closed economy. Once we acknowledge this, the changing consumption pattern of people need not be reflected in the corresponding changes in the production pattern. If the sector hypothesis holds for the changes in production pattern, it needs an explanation from the supply side rather than the demand side. Recognizing the ground realities of income estimation at the state level in India, we get the estimates only of income originating within the geographical boundaries of a state rather than income accruing to factors of production belonging to the state. The estimates of GSDP reflects more closely the supply or production side than demand side. The sectoral distribution of GSDP or GSVA, therefore, does reflect allocation of scarce resources among the sectors.

Production of agricultural or primary goods typically depends on several external or exogenous factors like rainfall, weather conditions, absolute scarcity of land, pest attacks, soil type, irrigation, and power supply. As a result, agricultural and allied activities are likely to be more prone to the laws of variable proportions and diminishing returns ultimately resulting in slower growth of productivity and efficiency. The industrial sector and service sector products on the other hand are likely to experience far less constraints in terms of external factors and more flexible environment to allow use of wide-spread rapid technological advances in production. As a result, productivity and efficiency of resources are likely to grow rapidly eventually surpassing the levels even in a dynamic and prosperous agricultural sector. In the long run, therefore, we expect relative decline of agricultural sector and relative growth of the secondary and tertiary sectors. This would shift the allocation of scarce resources away from agricultural sector and toward the secondary and tertiary sectors even in small and open economies. Thus, our expectation is that economic progress in any state should eventually result in such a relative shift of scarce resources resulting in overall increase in resource use efficiency.

Table 3. Triennial Average Sectoral Shares in Real GSDP in Maharashtra and Gujarat

(in %)

Years	Primary Sector	Secondary Sector	Tertiary Sector	Total Real GSDP
(1)	(2)	(3)	(4)	(5)
MAHARASHTRA				
1960-63	29.24	30.02	40.74	100
1969-72	21.08	33.66	45.26	100
1979-82	20.71	33.05	46.24	100
1989-92	16.90	33.82	49.28	100
1999-02	13.64	29.87	56.49	100
2009-12	8.96	29.49	61.55	100
2011-14	17.18	30.8	52.02	100
2017-20	13.80	30.5	55.70	100
GUJARAT				
1960-63	51.83	20.88	27.29	100
1969-72	53.59	19.98	26.43	100
1979-82	46.91	22.91	30.18	100
1989-92	32.80	29.05	38.14	100
1999-02	20.16	35.79	44.05	100
2009-12	14.77	39.56	45.67	100
2011-14	20.87	42.03	37.10	100
2017-20	18.10	46.17	35.73	100

Source: Appendix Tables 1 and 2 below.

Table 3 presents three yearly average shares of the primary, secondary, and tertiary sectors in the real GSDP of Maharashtra and Gujarat for the beginning and end of each of the six decades of their separate existence. It is clear from the table that Maharashtra's economy was dominated by the service sector production followed by the industrial sector. The primary production played the least important role in the state in each of the six decades. On the contrary, the primary sector was the dominant sector in Gujarat till mid-1980s followed by the service sector. Industrial sector played the least important role in Gujarat till the economic policy reforms of the early 1990s in the country. Over time, however, the nature of the Gujarat's economy changed drastically from a predominantly agricultural economy to highly industrialized economy. During the last decade, industrial sector was the dominant sector and primary sector was the least contributing sector in Gujarat's real GSDP. Structural changes in Gujarat have been substantial in the sense that they completely changed the nature of the economy. Maharashtra also experienced structural changes but not to the extent that changed the nature of the economy in the last six decades.

The development in Maharashtra as per the sector hypothesis discussed above was smooth and consistent throughout the six decades[5] - the relative share of the primary sector declined and of secondary and tertiary sectors increased. Thus, economic progress in Maharashtra resulted in reallocation of scarce resources from the low productivity primary sector to higher productivity secondary and tertiary sector. In Gujarat also the sector hypothesis worked throughout the last fifty-year period. The first decade (1960s) was an exception because the relative share of the primary sector increased and of secondary and tertiary sectors declined in the state. However, the rate of decline in the share of the primary sector in Gujarat is significantly higher than in Maharashtra. It may be recalled that productivity in agriculture is substantially higher in Gujarat than in Maharashtra and yet resources are reallocated from agriculture to industry and services in Gujarat because the latter sectors are more productive than agriculture in the state. Economic progress in Gujarat over the past six decades has resulted in such productivity enhancing shift of resources that ultimately resulted in growth acceleration.

Another dimension of the resource reallocation in the economy over time is to consider the proportion of the production sold in the international export markets versus domestic markets. It is well accepted that the degree of competition is much higher in the international markets than in the domestic markets. In order to be cost competitive, relative productivity of resources in the export production would be higher than in the domestic production. Therefore, a state economy producing a larger proportion of its production for exports is allocating its resources more efficiently than a state with a lower proportion of its production for exports. With economic progress, we should expect reallocation of resources for export production in a state under normal circumstances. Table 4 presents international exports originating from the two states as a proportion of their respective GSDP and of the total exports from the country.

Table 4. Exports in Maharashtra and Gujarat as Proportion of GSDP and Total Indian Exports

		MAHARASHTRA			GUJARAT		
Sr. No.	Years	Exports Rs. Crores	Exp/GSDP in %	Exp/Ind. Exp in %	Exports Rs. Crores	Exp/GSDP in %	Exp/Ind. Exp in %
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	2011-12	328375	25.6	22.4	312249	50.7	21.3
2	2012-13	361184	24.7	22.1	333401	46.0	20.4
3	2013-14	434201	26.3	22.8	445332	55.1	23.4
4	2014-15	445177	25.0	23.5	374203	40.6	19.7
5	2015-16	435610	22.2	25.4	326015	31.7	19.0
6	2016-17	452105	20.6	24.4	363472	31.1	19.7
7	2017-18	449484	19.1	23.0	430704	32.4	22.0
8	2018-19	508474	19.7	22.0	527776	35.1	22.9

Source: DGCIS (Directorate General of Commercial Intelligence Service) & MoSPI (2021): Economic Survey, 2020-21, Statistical Appendix.

The table shows that international exports originating from Maharashtra are higher in aggregate value than Gujarat in each year from 2011-12 to 2018-19 except in 2013-14 and 2018-19. It contributes 22 to 25 per cent of the total exports from the country and it is the highest contributing state for most of the recent years. Gujarat is a close second with a contribution ranging from 19 to 23 per cent. While exports from Maharashtra during 2013-14 to 2016-17 show stagnancy with marginal increase in absolute terms, exports from Gujarat during the same period shows substantial decline. The commodity composition of exports from the two states and developments in their international markets may explain such a trend. Despite such an adverse impact of global factors, Gujarat's growth in all the three sectors - primary, secondary and tertiary - is well above the national average during this phase. In this context, it is worth noting that international exports formed almost half the total production in Gujarat around the beginning of the last decade, but they formed only around a quarter of total production in Maharashtra. In both the states, however, this proportion sharply declined during the last decade. Throughout the last decade, however, the economy of Gujarat remained more export oriented than any other state in the country.

Finally, we examine the geographical composition of production in the two states. The urban areas are likely to be more productive than the rural areas because they have less of primary production and more of the industrial and service sector production. With economic progress, population and other resources move to the urban areas from the rural areas. As a result, resource reallocation from the rural to urban areas become productivity and efficiency enhancing. Since the urban areas have better sanitation, more amenities, comforts, and luxuries than the rural areas, such a shift of population involves improvement in the average standard of life in the economy. Table 5 presents estimates of the urban areas in population, work force and incomes in Maharashtra, Gujarat, and All India for selected years. We have considered the income estimates for the urban and rural areas prepared by researchers since official estimates of this are not made so far for states in India [see, Dholakia and Dholakia, 1978; Dholakia, Pandya and Pateriya, 2014]. The methodology used for estimation of the urban and rural incomes in both these papers is similar, though the estimates for 1970-71 uses net state domestic product (NSDP) for state income and net domestic product (NDP) for the nation, and Population Census of 1971 for work force [Dholakia and Dholakia, 1978] rather than the GSDP, GDP and NSS Survey data for the subsequent years [Dholakia, Pandya and Pateriya, 2014].

Table 5. Share of Urban Areas (in %) in Population, Work Force, and Income in Selected Years

Geography	Item	1970-71	1993-94	1999-00	2004-05	2011-12
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Gujarat	Population	28.1	35.3	36.8	39.4	43.1
	Work Force	24.6	28	28.7	32.4	39.4
	GSDP	43.1*	49.4	55.5	58	59.1
Maharashtra	Population	31.2	39.8	42.1	43.5	45.5
	Work Force	27.2	31.4	34.2	36.2	38.6
	GSDP	60.5*	60	65.4	68.5	67.8
All India	Population	19.9	26.3	27.5	29.1	31.5
	Work Force	17.7	21.8	24.5	23.4	29
	GDP	37.8*	40.6	47	44	48.8

Note: *For 1970-71, the concept of Income is NSDP for states and NDP for India
Source: Dholakia and Dholakia (1978); and Dholakia, Pandya and Pateriya (2014).

The table brings out that both Maharashtra and Gujarat are more urbanized than all India average in terms of all the three aggregates - population, work force and income. Maharashtra had higher share of urban areas in population and income than Gujarat over the whole period 1970-2012. The share of urban areas in both the states is consistently increasing though the difference is narrowing over time. Gujarat is catching up with Maharashtra in the share of urban areas in population and income, and in work force, it has even crossed Maharashtra in 2011-12. As per these estimates, the reallocation of resources from the less productive rural areas to more productive urban areas have taken place in both the states over time, though the rate of reallocation is marginally higher in Gujarat than in Maharashtra.

V. ECONOMIC WELLBEING OF PEOPLE

Whenever economic progress takes place in an economy over a long period, it is expected that the standard of life and living conditions of people in the economy would also improve substantially. It is considered an integral part of economic progress. However, satisfactory measurement of this aspect is very challenging because there are so many different and important dimensions of the economic wellbeing of people that all or even most of them cannot be captured through a single or a few indicators. Moreover, the concept of wellbeing itself has a subjective shade in the sense that it is also dependent on the perception, opinion, attitude, culture, and feelings of people. To avoid such a subjective shade, we consider only the economic wellbeing of people in aggregate and associate it with a few well-defined dimensions. As a result, we consider employment opportunities, unemployment rate, proportion of population living in absolute poverty, consumption inequality in population, cost of living or consumer inflation rate, life expectancy, death rate, infant mortality rate, maternal mortality rate, literacy rate, enrolment rate, drop-out rate, proportion of urban population living in slums, proportion of population with safe drinking water, crimes against women and children, and the net migration rate for the economy to take a reasonably wider view of this aspect of economic progress.

Since economic wellbeing of people is critically linked to their ability to meet the basic necessities of life such as food, shelter and clothing, the economic progress should lead to considerable improvement in the proportion of population living in poverty. The erstwhile Planning Commission of the government of India made sincere efforts to define acceptable poverty line in terms of minimum expenditures required on food and other basic necessities of life from time to time separately for the rural and urban areas in the country. Population not able to spend such a minimum amount was considered as living in absolute poverty. The definition and calculation of such poverty lines were recommended by a committee of experts. Two such definitions and calculations of the poverty lines are popular in Indian policy circles - The Lakdawala Committee and The Tendulkar Committee [for critique, see Rath, 2011]. There are significant differences in the definition and calculations of the poverty lines by the two committees and hence their estimates of population living below the poverty lines are different for the same year and not comparable. Table 6 provides estimates of the percentage of people living below the poverty line in rural, urban and all areas in Maharashtra, Gujarat, and the country for selected years.

The table reveals that with the economic progress taking place in the country and the two states, the proportion of population living below poverty line shows a significant decline both in the rural and urban areas whatever definition one follows consistently. Comparing the performance of the two states on this count, however, we find that poverty rate in both urban and rural Gujarat fell at remarkably faster rate than in Maharashtra particularly during the last decade and a half, when Gujarat achieved a significantly higher growth rate of its real income.

Table 6. Percentage of Population Below Poverty Line in Maharashtra, Gujarat and India for selected Years

Years	Maharashtra			Gujarat			All India		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Lakdawala Committee									
1973-74	57.71	43.87	53.24	46.35	52.57	48.15	56.44	49.01	54.88
1977-78	63.97	40.09	55.88	41.76	40.02	41.23	53.07	45.24	51.32
1983	45.23	40.26	43.44	29.8	39.14	32.79	45.65	40.79	44.48
1987-88	40.78	39.78	40.41	28.67	37.26	31.54	39.09	38.2	38.86
1993-94	37.93	35.15	36.86	22.18	27.89	24.21	37.27	32.36	35.97
2004-05	29.6	32.2	30.7	19.1	13	16.8	28.3	25.7	27.5
Tendulkar Committee									
1993-94	59.3	30.3	47.8	43.1	28	37.8	50.1	31.8	45.3
2004-05	47.9	25.6	38.1	39.1	20.1	31.8	41.8	25.7	37.2
2009-10	42	22.9	36.7	11.5	6.9	8.7	33.8	20.9	29.8
2011-12	35.7	21	31.6	6.8	4.1	5.1	25.7	13.7	21.9

Source: RBI (Annual): Basic Statistics Relating to the Indian Economy, with basic source as Planning Commission, GOI. These estimates are also available from DES Maharashtra and DES Gujarat on request.

A related dimension of the economic progress is the consumption inequality in the economy. Table 7 provides estimates of the Gini coefficient of inequality for the urban and rural areas of the two states and the country for selected years. The higher the Gini coefficient, the higher is the inequality and *vice versa*.[6] The estimates of the Gini coefficients in the table show different trends in the rural and urban areas. In the rural areas the Gini coefficients do not show any consistent trend but fluctuate in narrow range. It may be interpreted to show almost constancy of the consumption expenditure inequality in the rural areas of the two states and the country. However, between Gujarat and Maharashtra, the former has marginally lower inequality. In the urban areas, on the other hand, there is a clear trend in the inequality to rise over time in both the states and the country. Again, Gujarat has a substantially lower inequality than Maharashtra over the whole period.

Table 7. Gini Coefficients for Household Consumption Expenditures in Maharashtra, Gujarat, and India

Years	Maharashtra		Gujarat		All India	
	Rural	Urban	Rural	Urban	Rural	Urban
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1983	0.283	0.329	0.252	0.264	0.297	0.325
1993-94	0.302	0.351	0.236	0.287	0.282	0.340
2004-05	0.308	0.372	0.269	0.305	0.300	0.371
2009-10	0.268	0.410	0.253	0.328	0.291	0.382

Source: Planning Commission [2013].

Considering that the absolute poverty rate has fallen, and the degree of consumption inequality has remained almost constant in the rural areas of both the states over time, we may safely conclude that the standard of living of the lower income group has improved to almost the same extent as the higher income groups. However, in the urban areas of both the states, since the degree of consumption inequality has sharply increased along with a decline in the absolute poverty rate, the improvement in the standard of living of the higher income group is perhaps more than in the lower income groups. This is easily explained in Maharashtra because the proportion of the slum population in the urban population (currently at 23.3%) is rising over time and is larger than the national average. However, the same proportion in Gujarat (currently at 6.5%) is one of the lowest in the country and has declined substantially during 2001 Census to 2011 Census. Slums are more a phenomenon of smaller towns than larger cities in Gujarat.

Slum population increases in the urban areas because of substantial net in-migration of people from outside the state and the rural areas of the state. Such an in-migration is often due to the pull factors of expectations of higher wages, attractive lifestyles, availability of amenities, and better living standard facilitated by greater employment opportunities. Thus, net in-migration certainly reflects perception of people about better life at the destination than the origin. This is supported by the figures of the percentage of employed persons in the total population in the two states compared to the nation in 2018-19. The percentage was higher at 43.1% in rural Maharashtra and 39.2% in rural Gujarat than 35.8% in rural India, and 35.2% in urban Maharashtra and 37.1% in urban Gujarat than 34.1% in urban India. However, it is relevant to note that urban Gujarat provides greater employment opportunities than urban Maharashtra.

Moreover, perception about better living conditions is also formed based on the availability of drinking water and crime rates. Percentage of households with safe drinking water facility as per the 2011 census in Maharashtra was 83.4%, in Gujarat 90.3% and in the country 85.5%. Similarly, out of the total crimes against women in the country in 2019, Maharashtra had 9.2% and Gujarat had only 2.2% crimes. Out of the total crimes against children in the country in 2019, Maharashtra had 13.2% and Gujarat had 3.2% crimes. These proportions when compared to the proportions in population of 9.3% in Maharashtra and 5.0% in Gujarat indicate that crime rates in Gujarat are significantly lower than the average in the country, but they are higher in Maharashtra particularly against children. This could be a reason for higher proportion of in-migration among adult males than among females and children.

The unemployment rate in 2018-19 (as in the earlier years) also show both the urban and rural areas in both the states have a significantly lower risk of unemployment than the nation. Again, while Gujarat has similar unemployment rates in both the urban and rural areas around 3%, Maharashtra has significantly higher rate of 6.4% in urban areas than 4.2% in its rural areas. However, we must recognize that Maharashtra has a substantially higher rate of net in-migration of 4.1% than only 1.6% in Gujarat [NSSO, 2007-08]. Perhaps it is not a coincidence that the difference in the net in-migration rate between the two states is similar to the difference in their unemployment rates. It may suggest that the high rate of in-migration in Maharashtra has perhaps crossed the optimal level and hence results in higher proportion of slums and unemployment rates. The perception about Maharashtra's economic progress among people may need some correction towards realistic levels.

Cost of living or consumer price index (CPI) is another important variable in comparing economic progress in any two economies. Generally, it may be argued that price of any commodity in a country where there are no restrictions on the mobility of factors and commodities would not differ between states beyond the difference in transport costs and local taxes. Therefore, the overall CPI inflation rates between states would vary only to the extent of the differences in the weights of the underlying commodity baskets in the two states. However, Jha and Dhal [2019] found that interstate variation in CPI inflation rates in India was substantial and several state level factors could explain such variation with statistical significance. They found state per capita income growth, state agricultural growth, credit growth in the state, oil prices in the state, state government expenditures and taxes, and growth of utilities such as electricity, gas, and water supply in the state as important determinants of state CPI inflation rate. The state governments would, therefore, have obvious role in managing the cost-of-living movements in their states.

CPI inflation data is regularly collected and published by NSO on monthly basis by major commodity groups in each of the states. These data on Maharashtra and Gujarat show that annual inflation rates in the two states differ from each other and from the national average in all the years during the last decade. Given that annual inflation rates fluctuate substantially, we take a three yearly geometric mean of annual inflation rates for the first three years - 2012-15 - and the last three years - 2016-19 in the two states and the country. For the first three years, the average inflation rate works out to be 7.55% in Maharashtra, 7.65% in Gujarat and 8.42% in India; the same for the last three years are respectively 3.86%, 3.42% and 3.85%. Thus, during the last decade, CPI inflation rate fell significantly in the country and both the states. The decline was much sharper in Gujarat at 423 bps compared to 369 bps in Maharashtra. The cost-of-living in Gujarat improved remarkably relative to Maharashtra during the last decade. While inflation was similar in Maharashtra and the nation towards the end of the last decade, it was substantially lower in Gujarat. This must be seen along with the previous finding that growth of real income in Gujarat during the last decade was significantly higher than both Maharashtra and the nation. Combination of higher growth and lower inflation definitely shows better economic progress than the one with lower growth and higher inflation.

Another important aspect of the wellbeing of people is captured by several health-related indicators. Life expectancy at birth is a very good summary indicator for this. For the period 2014-18, life expectancy at birth for the males and females is 71.3 and 73.8 years in Maharashtra, 67.8 and 72.3 years in Gujarat, and 68.2 and 70.7 years in the country. While life expectancy in Maharashtra for males and females is significantly higher than Gujarat and the nation, the same in Gujarat is higher than the nation only for females. For males in Gujarat, the life expectancy is lower than the national average. However, the crude death rate (DR), the infant mortality rate (IMR), and maternal mortality rate

(MMR) for the period 2016-19 in Maharashtra, (respectively 5.5, 19, and 46) are lower than Gujarat (respectively 5.9, 28, and 75), which in turn are lower than the national average, (respectively 6.2, 32, and 113). Clearly, in all health indicators, Maharashtra scores over Gujarat. Since these indicators measure the status at a point in time, they are like a stock concept. On the other hand, economic progress is a process of development over time and correspond to a flow concept. We should, therefore, compare the progress made by the states over time. Table 8 provides such comparison.

Table 8. Comparison of Health Indicators - Maharashtra and Gujarat

States	Indicators	1970-71	1980-81	1990-91	2000-01	2010-11	2018-19
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Maharashtra							
	DR	12.3	9.6	8.2	7.5	6.3	5.5
	IMR	105	79	60	45	25	19
Gujarat							
	DR	14.9	12	8.5	7.5	6.6	5.9
	IMR	145	106	78	60	38	28

Note: DR = Death Rate; IMR = Infant Mortality Rate
Source: Sample Registration Scheme

The table shows that Gujarat always lagged Maharashtra in the health indicators. However, the rate of improvement in the infant mortality rate was higher in Gujarat than in Maharashtra. Not all health indicators showed such a higher rate of improvement consistently. In the crude death rate, for instance, the rate of improvement in Gujarat slowed down compared to Maharashtra during the last two decades. For the indicators such as IMR and MMR, which are likely to be more responsive to the better availability of the health and overall infrastructural facilities, the rate of improvement is likely to be directly related to the overall growth performance of the state economy.

The aspect of education in the well-being of people is also crucial in the economic progress of an economy. Here again, we find that Maharashtra scores over Gujarat in absolute levels throughout the period. When the two states were separated in 1960-61, Gujarat had the overall literacy rate of 31.5% compared to 35.1% in Maharashtra; and this lead was maintained throughout the period with 79.3% in Gujarat and 82.3% in Maharashtra in 2011. The gross enrolment ratio at the elementary level (standard I to VIII) is 102.5 in Maharashtra which is higher than the national average of 96.1 which in turn is higher than 94.4 in Gujarat in 2018-19. However, the gender parity index is marginally better in Gujarat than Maharashtra in the elementary level (std. I to VIII) and higher secondary level (std. XI-XII). Drop-out rates among boys and girls in Gujarat in 2019-20 is substantially higher than Maharashtra in all levels consistently from primary (std. I to V), upper primary (std. VI to VIII) and secondary (std. IX & X). Thus, in education of children, Maharashtra has performed much better than Gujarat over the last six decades in not only maintaining its initial lead but also enrolling children and keeping their drop-out very low.

VI. CONCLUDING REMARKS

Comparing economic progress over a long period in two state economies in a country involves consideration of performance in multiple dimensions and metrics. As we have discussed in the beginning, the concept of economic progress involves five connotations or aspects that should be examined simultaneously. These aspects are - volume of economic activities, stability of the growth path, efficiency of resource allocation, wellbeing of people in the economy, and sustainability of growth performance over a long time. The present paper has examined the performance of the two states in the first four aspects in detail. The sustainability aspect over the long period of six decades is implicit when different phases of economic growth in the two states are identified endogenously and performance of each state is examined.

Since India is a developing economy relatively rapidly growing during the last six decades, sustainability of economic growth of an Indian state over a long period should be interpreted to mean the ability of the state to improve or at least maintain its relative position compared to the national average over time. Thus, sustainability would imply achieving similar or higher growth than the national average over the long period. In this sense, economic progress in both Maharashtra and Gujarat was sustainable. Both the states have improved their relative position compared to the national average over the last six decades, though the improvement in Maharashtra is only marginal (between 5 to 8%) whereas in Gujarat it is almost 200%.

In terms of the five distinct phases of growth in each of the two states identified endogenously, Maharashtra performed distinctly better than the nation in growth of the volume of economic activities only in its third and fourth phases (1987-2012), Gujarat performed better than the nation in all its five phases. In terms of stability of the growth path, Maharashtra had higher stability than Gujarat in its first three phases (1960-00), but during the last two phases (1999-2020), Gujarat had better stability than Maharashtra. While Maharashtra outperformed Gujarat in both growth and stability during its third phase (1987-00), Gujarat did better than Maharashtra in both growth and stability during the next two phases (1999-2020). During the first two phases (1960-87), while Gujarat did better in growth, Maharashtra did better in stability. Thus, economic progress in Gujarat during the last two decades has been better than Maharashtra in terms of volume, stability, and sustainability aspects.

In terms of efficiency of resource allocation, economic progress in Gujarat has been substantial as it completely changed the nature of the economy from predominantly agricultural economy to predominantly industrial economy. While Maharashtra did experience resource reallocation from agriculture to industry and services, they were marginal and did not change the basic nature of the economy during the last six decades. Commodity production for international market as a proportion of the GSDP has been highest in Gujarat among all states in the country. Maharashtra is a distant second. However, during the last decade this proportion has declined sharply in both the states perhaps due to international trade related developments in the global markets and Gujarat is most adversely affected. Despite this unfavourable development, all the three sectors - primary, secondary, and tertiary - have registered higher growth in Gujarat than the national average and Maharashtra state during the last decade. It is possible that production for exports outside the country is substituted by the production for exports within the country from Gujarat. If such a shift has occurred, the efficiency of resource allocation would not suffer. On the other hand, the adverse impact of unfavourable developments in the global markets has affected efficiency of resource allocation and hence overall and industrial growth in Maharashtra. The resource reallocation from the less productive rural areas to more productive urban areas has taken place in both the states, though the rate of reallocation is significantly higher in Gujarat than Maharashtra. Thus, even in the efficiency aspect of economic progress, Gujarat has done better than Maharashtra.

Gujarat has also done better than Maharashtra even in the wellbeing of people as reflected through the proportion of population living in poverty, consumption inequalities, proportion of slum population, availability of employment opportunities, risk of unemployment, movements in cost of living, rate of crimes against women and children, and proportion of population covered with basic amenities like safe drinking water. While both the states have been attracting a large number of net in-migrants, it appears that the rate of net in-migration in Maharashtra is more than optimal since it leads to rapid growth of slums and higher unemployment rates. The perception of economic progress in Maharashtra seems to have exceeded the reality by a considerable margin. While the health and education indicators of Maharashtra are better than Gujarat ever since 1960, Gujarat has been able to catch up and reduce the gap in the health indicators over the last six decades. It is the educational aspects where economic progress in Maharashtra has been more impressive than Gujarat over the last six decades. Thus, economic progress in all its implied aspects except the educational indicators has been better in Gujarat than Maharashtra over the last six decades.

Finally, based on the comparison of the economic progress in Maharashtra and Gujarat, we find that better performance on volume and efficiency aspects as reflected by the growth and productivity enhancing structural changes consistently over a long period is most likely to result in better performance on the stability, sustainability, and wellbeing of people aspects. There may be a few exceptions in very specific aspects of wellbeing of people that may still not be addressed satisfactorily, but overall, the economic progress would be well achieved in most connotations of the term. This must be viewed against a more direct strategy of focussing on the welfare dimensions of economic progress directly rather than trying to achieve the volume and efficiency aspects directly. The case of economic progress achieved in Maharashtra and Gujarat since they were bifurcated from the erstwhile Bombay state also adds a favourable observation to an interesting hypothesis about the bifurcations of big states. When a strong economic justification exists for splitting a big state into two states, one would expect the smaller state to outperform the bigger one in the overall economic progress over longer period. Another supporting observation for the hypothesis is separation of Punjab and Haryana. This hypothesis may be tested for more recent bifurcations - Madhya Pradesh and Chhattisgarh, Uttar Pradesh and Uttarakhand, Bihar and Jharkhand, and Andhra Pradesh and Telangana. However, proper testing of the hypothesis would require long time series of data after the bifurcation.

APPENDIX: Comparable Time Series of GSDP at Factor Cost for Maharashtra and Gujarat - 1960-61 to 2019-20

The state statistical bureau or the Department of Economics and Statistics (DES) in both the states is functional and efficient in preparing required estimates regularly and meticulously. The State Domestic Product estimates are prepared by detailed sectors both at current and constant base year prices. The usual practice was to prepare the estimates of Net State Domestic Product (NSDP) at factor cost following the concept of income originating within the geographical boundary of the state. However, as a regular part of the data and estimation improvement exercise, when the base year was revised from 1970-71 to 1980-81, several states started estimating Gross State Domestic Product (GSDP) by sectors. The concept was further revised and revamped to Gross State Value Added (GSVA) at basic prices and GSDP at market prices at the time of base year revision of 2011-12 from the earlier series at 2004-05 base year. Till the time of the last base year revision of 2011-12, all base year revisions introduced marginal changes in the concepts and data sources that did not change the basic character and trends in the series of estimates of state income. However, the changes introduced in 2011-12 base year revision were so far reaching and drastic that it has not been found advisable statistically to extend the state estimates backward to make them comparable [Dholakia and Pandya, 2017]. Since the sector definitions also changed substantially, it was not advisable to compare the estimates for detailed sectors over time before and after 2011-12. However, at an aggregate level, the new concept of GSVA at basic prices and old concept of GSDP at factor cost are comparable. If we use these estimates at the aggregate level to compare long term growth, it is acceptable.

The exercise of converting past series to make it comparable with the estimates based on the latest base year revision, therefore, must consider the base year 2004-05. The previous base revisions were made in 1999-00, 1993-94, 1980-81, 1970-71 and 1960- 61. The estimates of GSDP at factor cost at constant prices by sectors were available for the years 1980-81 onwards. For the earlier years, estimates of NSDP were available by sectors. We assumed that the annual growth of NSDP by detailed sectors would apply to the corresponding estimates of GSDP to carry the series backward. The usual methodology of linking the series with two different base year with the help of multiplier at sectoral level is followed to generate comparable estimates over time. The resulting series of GSDP at factor cost at constant 2004-05 prices by broad sectors - Primary, Secondary and Tertiary - are presented in Appendix Table 1 for Maharashtra and Appendix Table 2 for Gujarat. The tables also provide estimates of GSVA at 2011-12 constant basic prices by three broad sectors (not strictly comparable to corresponding estimates of GSDP at 2004-05 constant prices before 2011-12) for the years 2011-12 to 2019-20 taken from the DES publications [DES Maharashtra, 2021; and DES Gujarat, 2021].

Appendix Table 1. Gross State Domestic Product at Factor Cost - 1960-61 to 2011-12 At Constant (2004-05) Prices AND Gross State Value Added - 2011-12 to 2019-20 at Constant (2011-12) Basic Prices for Maharashtra

(Rs. crore)

Years	Real GSDP	Primary	Secondary	Tertiary
(1)	(2)	(3)	(4)	(5)
1960-1961	54227	17097	15653	21478
1961-1962	54471	15444	16644	22383
1962-1963	56175	15642	17206	23328
1963-1964	58603	15959	18042	24602
1964-1965	60650	15976	18973	25700
1965-1966	59572	13074	19944	26554
1966-1967	62487	14138	20526	27824
1967-1968	65529	15461	21312	28755
1968-1969	69144	16134	22515	30495
1969-1970	71098	15647	23776	31675
1970-1971	73410	15209	24859	33342
1971-1972	75446	15483	25415	34548
1972-1973	73159	11912	26106	35141
1973-1974	79921	17160	26164	36598
1974-1975	86007	20509	27299	38199
1975-1976	89732	21018	28645	40068
1976-1977	94024	20886	30803	42336
1977-1978	100398	22866	32567	44965
1978-1979	106390	22648	35485	48257
1979-1980	108275	23030	36009	49237
1980-1981	108501	21936	36419	50146
1981-1982	111462	23001	36042	52419
1982-1983	116070	21986	37513	56571
1983-1984	122701	23437	40187	59076
1984-1985	125373	23309	40975	61089
1985-1986	134308	22924	45243	66141
1986-1987	137029	19872	48199	68959
1987-1988	145452	25515	48631	71306
1988-1989	157879	27305	53383	77191
1989-1990	178713	34020	59471	85222
1990-1991	186813	32364	63346	91103
1991-1992	186686	26746	63959	95981
1992-1993	209307	35844	68507	104956
1993-1994	227717	37483	74651	115583

(Contd.)

Appendix Table 1. (Concld.)

Years	Real GSDP	Primary	Secondary	Tertiary
(1)	(2)	(3)	(4)	(5)
1994-1995	233287	37003	76224	120061
1995-1996	258532	38824	86582	133126
1996-1997	273486	44851	90935	137700
1997-1998	290467	39191	101494	149783
1998-1999	298954	41400	98795	158759
1999-2000	324966	44603	103321	177042
2000-2001	317389	42838	93577	180975
2001-2002	330258	45208	93589	191461
2002-2003	352990	46307	100553	206130
2003-2004	381130	51121	110704	219305
2004-2005	415480	48417	119531	247531
2005-2006	470929	52635	142735	275559
2006-2007	534654	59610	165786	309258
2007-2008	594832	67335	185639	341857
2008-2009	610191	57379	183751	369062
2009-2010	666944	58117	196475	412352
2010-2011	742042	69644	223655	448743
2011-2012	775610	68200	223867	483542

GSVA at Constant (2011-12) Basic Prices

(in Rs. Crores)

Years	Real GSDP	Primary	Secondary	Tertiary
(1)	(2)	(3)	(4)	(5)
2011-2012	1144418	206520	353389	584509
2012-2013	1213382	208285	371853	633245
2013-2014	1296428	211753	400166	684509
2014-2015	1376374	204169	425352	746854
2015-2016	1468485	204559	461718	802208
2016-2017	1599819	236788	490797	872234
2017-2018	1688703	239927	526163	922614
2018-2019	1784836	242991	552420	989425
2019-2020	1878232	254829	551945	1071458

Basic Source: NSO website; and DES Maharashtra (2021).

Appendix Table 2. Gross State Domestic Product at Factor Cost - 1960-61 to 2011-12 At Constant (2004-05) Prices AND Gross State Value Added - 2011-12 to 2019-20 at Constant (2011-12) Basic Prices for Gujarat

(Rs. Crore)

Years	Primary	Secondary	Tertiary	GSDP
(1)	(2)	(3)	(4)	(5)
1960-1961	11770	4946	6465	23180
1961-1962	13731	5168	6859	25757
1962-1963	13098	5434	6996	25528
1963-1964	13875	5892	7376	27143
1964-1965	15668	6286	7785	29739
1965-1966	12931	6480	7815	27226
1966-1967	12897	6747	8113	27758
1967-1968	16035	6457	8312	30804
1968-1969	12859	6666	8385	27910
1969-1970	15252	7237	8836	31326
1970-1971	20414	7129	9382	36925
1971-1972	21320	6877	9893	38090
1972-1973	11810	8185	9432	29427
1973-1974	17155	8802	10504	36461
1974-1975	11617	8723	10272	30611
1975-1976	20426	8626	11412	40464
1976-1977	21129	9336	12444	42908
1977-1978	21728	10616	13344	45688
1978-1979	22917	11167	14609	48693
1979-1980	22380	11705	14770	48855
1980-1981	23022	11671	15332	50025
1981-1982	26890	11933	16412	55235
1982-1983	23351	13100	17499	53951
1983-1984	28109	16296	19140	63545
1984-1985	28537	15319	20233	64090
1985-1986	22432	17519	21509	61460
1986-1987	22441	19119	23343	64903
1987-1988	13353	19658	24352	57363
1988-1989	31128	22154	27759	81041
1989-1990	28024	21925	29915	79864
1990-1991	26681	24360	29671	80712
1991-1992	22611	22194	30306	75110
1992-1993	32511	30659	33578	96748
1993-1994	25537	31317	36641	93494

(Contd.)

Appendix Table 2. (Concld.)

Years	Primary	Secondary	Tertiary	GSDP
(1)	(2)	(3)	(4)	(5)
1994-1995	34756	35986	39943	110685
1995-1996	30970	41391	43800	116161
1996-1997	40347	46195	46530	133072
1997-1998	37207	46209	52310	135726
1998-1999	39203	50048	56140	145392
1999-2000	28972	55068	61865	145905
2000-2001	25970	50384	62422	138775
2001-2002	32880	50449	67567	150896
2002-2003	31557	58084	73154	162796
2003-2004	42383	65559	79307	187249
2004-2005	39732	74320	89321	203373
2005-2006	47448	86065	100263	233776
2006-2007	47206	94804	111383	253393
2007-2008	50739	105787	124747	281273
2008-2009	47235	113542	139564	300341
2009-2010	46993	139075	148059	334127
2010-2011	55910	143434	168237	367581
2011-2012	58641	150195	183221	392058

GSVA at Constant (2011-12) Basic Prices (in Rs. Crores)

Years	Primary	Secondary	Tertiary	GSDP
(1)	(2)	(3)	(4)	(5)
2011-12	125870	223417	202633	551921
2012-13	115513	263726	227767	607005
2013-14	136419	273826	241246	651491
2014-15	138456	318111	261942	718510
2015-16	152592	357821	282223	792635
2016-17	172594	389144	304559	866298
2017-18	188176	428899	333442	950518
2018-19	174236	479002	365438	1018677
2019-20	189735	505849	395498	1091082

Basic Source: NSO website; and DES Gujarat (2021)

NOTES

1. The source of allmost of the figures used in this section II is DES Maharashtra (2021).

2. For (i) and (ii) data pertains to the year 2016-17 and for (iii) to the year 2019.

3. I am grateful to Dr. Amey Sapre for running the Bai-Perron algorithm for both the states for me.

4. It should be noted that the fifth phase of growth in both the states is considered separately only because of the data comparability problems arising out of the change of base to 2011-12 and related issues of new data sources, concepts, scope of some sectors and methodology of estimation of income.

5. It may be noted that the sectoral shares for 2011-14 and 2017-20 are not comparable to the earlier period because the changes introduced in the base year 2011-12 in the GSDP or GSVA series impacted the scope, concepts and sources of data for different sub-sectors. However, the sectoral shares for 2011-14 and 2017-20 are comparable.

6. If the Gini coefficients are estimated using the actual plotted Lorenz Curve from first principles, this statement is not strictly valid. However, for statistical estimation of the Gini coefficients, the underlying Lorenz Curves are statistically fitted that do not intersect each other and hence the statement in the text is valid.

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URBAN PET ECONOMY AND POLICY ON PETS

Ramanath Jha

Since ancient times, across the world, pets, and particularly dogs, have found favour with men and women as companions. In modern times, however, there has been a phenomenal increase in the number of pets in the developed countries. This has given rise to a multi-billion-dollar pet economy extending from breeding and sale of pets to pet food, pet accessories, medicines and pet insurance. This being primarily an urban phenomenon, cities have had to respond both in terms of pet facilitation and regulation. Facilitation work has extended to pet amenities in parks, in trains and other public places. Regulation is in terms of laying norms of behavior that allow the pet owner's life to be enriched through pet companionship without causing nuisance or danger to others. Since India's cities are witnessing a steady rise in the number of pets, they need to respond to the phenomenon with their own policy and regulation that both facilitate as well as control the pet boom.

INTRODUCTION

Among the vast array of subjects dealt with by Urban Local Bodies (ULBs), pets until now have not been a subject of great significance. As a sequel, the matter has not drawn much attention either of writers and researchers who deal with urban issues or those in administration who grapple with urban planning, urban governance and urban infrastructure. However, the growing inclination of urban residents to keep pets and the rising economy around it indicates that this would soon be a matter with which ULBs would have to contend with. This article also reminds me of the passion of Dr. V. M. Dandekar to look for unexplored areas of research and study and is in a way a contribution to his memory.

It would be a grossly inaccurate statement if one were to declare that the fondness for pets is a newfound passion. Throughout the ages, human beings have been attracted towards companion animals, commonly called pets. The most coveted among them has been the dog. Since ancient times, men and women have found dogs as the most loyal and adored non-human friends. Ancient India probably saw the first truly domesticated dog (the Indian Pariah dog) in history. The first mention of a dog is in the Rig Veda and the earliest depiction of a domesticated dog on a leash is seen in the prehistoric paintings of *Bhimbetka* in Madhya Pradesh.[1] One of the last of Mahabharata's remarkable stories poignantly establishes man's relationship with the dog. It narrates the journey King

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Yudhishthira took to heaven after renouncing his kingdom, accompanied by his family and a dog. While Draupadi, the wife and his four brothers perished on the way, the dog alone remained by his side on his onward journey. Indra then descended from the heavens in his chariot and invited Yudhishthira for a ride to paradise on condition that the dog was left behind. Yudhishthira protested that he would prefer to remain with the dog, his faithful companion and go back to the earth, or even go to hell than to live in paradise without his faithful companion. Indra relented, fully satisfied that 'Dharmaraj' had passed the ultimate moral test, following which the dog revealed his true identity (God of Dharma).[2]

India, of course, was not alone in its attachment to pets. In Mesopotamia, inscriptions and inlaid plaques portray dogs as hunters, protectors and companions and living in homes as members of the family. In ancient Egypt, the dog was associated with the dog-jackal god Anubis, who guided the soul of the deceased to the Hall of Truth where the soul would be judged by the great god Osiris. Domesticated dogs were buried with great ceremony in the temple of Anubis at Saqqara. The dog, similarly, was companion, protector and hunter for the Greeks. Dogs appear in early Greek literature as the three-headed Cerberus who guarded the gates of Hades.[3]

Socrates believed that the dog was a true philosopher because it could "distinguish the face of a friend and of an enemy only by the criterion of knowing and not knowing" and concluded that dogs must be lovers of learning. The dog has learned who is a friend and who is not and, based on that knowledge, responds appropriately while human beings are often deceived as to who their true friends are. Ancient Greeks considered dogs were geniuses and Plato referred to the dog as a 'lover of learning' and a 'beast worthy of wonder.'[4] The Romans had many pets, from cats to apes, but favoured the dog above all others. The dog is featured in mosaics, paintings, poetry and prose. Dogs are mentioned in the Roman Law code as guardians of the home and flocks. Thus, the modern claim that a dog is man's best friend is a belief substantiated throughout history.

The most famous dog of the twentieth century is undoubtedly Hachiko, the Japanese dog of Professor Ueno at the University of Tokyo. The dog for a whole year went daily to Shibuya railway station and received the Professor. Even after Professor Ueno met with a sudden death, Hachiko continued his daily visit for nine long years expecting the arrival of his master. The dog died of cancer in 1935. In 1934, one year before its death, the citizens of the town erected his bronze statue in front of Shibuya Railway station that stands to this day. It is said that the dog also took part in the opening ceremony. After his death, his body was stuffed and is kept in the National Museum in Tokyo.[5]

Dogs as Pets during Modern Times

In recent years, the popularity of pets with humans has witnessed a steep rise. A recent survey conducted by the American Pet Products Association (APPA) estimates that pet dogs in the Unites States now number 90 million[6] and the US pet industry stands at USD 103.6 billion [2020].[7] While the volume of pets in the US is among the largest in the world, Tel Aviv has the global distinction of the highest number of dogs per capita. Almost all the developed countries have rising pet populations and this trend is catching up in other parts of the globe.

The United States, Canada, Australia, New Zealand and European countries, possibly without exception, have highly favourable policies in respect of pet dogs. Tel Aviv has four dog-friendly beaches and 70 dog parks or one park per sq. km. The rising popularity of dogs inspired the city some time back to hold their first-ever dog festival. Many American parks and beaches make biodegradable waste bags available at the entrances. Some of the parks in Barcelona even have dog-specific fenced areas with benches and water fountains where the canines can cool off. Dogs are allowed paid entry on all public transportation systems in the Netherlands and are regularly seen carted around the city in bike baskets or even specially-designed ‘bakfiets’ - cycles with box-like carriers. In Canada and Poland, a number of restaurants not only welcome dogs, but cater for them as well. It appears that dogs have never had it so good for centuries.

Pet Businesses

Pets generate a huge array of businesses and a whole economy around themselves. The first of these are outlets from where pets can be purchased. For those who do not pick them up as a gift from friends, neighbours, or relatives, they can buy them from pet shops or breeders. However, this is only a one-time cost. The most significant item of recurring cost is pet food. In the US, it is estimated that a large dog may cost $ 25 per week to be kept well fed. When owners take pooches out for a walk or for their daily poop, they need to purchase leashes and put them around their dogs’ necks. Dogs need to be vaccinated annually apart from spaying and neutering. Some owners indulge their dogs with a variety of toys for play, beds for sleep and rest, winter clothing, soaps, shampoo and brushes for bath and cages and carriers when required to be confined. Many would like their dogs to be trained by trainers in obedience and training sessions. Occasionally, they must receive veterinary care and take medicines when they fall ill. This gets more frequent as they get older. The American Society for the Prevention of Cruelty to Animals (ASPCA) publishes a chart that breaks down average annual expenses for different types and sizes of pet dogs. According to the ASPCA, a small dog costs about $ 1,314, a medium dog $ 1,580 and a large dog $ 1,843 in the first year as a dog owner. This cost rises with time.[8]

The high costs of maintaining a pet have forced an increasing number of pet owners in the western world to seek insurance policies for their pets. In the US, some insurance companies offer group policies for pet owners. Pet insurance policies can also be purchased directly from insurers. Many owners would like to have the services of 'pet sitting' while they are at work. They would also like to leave their pet dogs at a kennel/boarding while they are on travel. If dogs accompany their owners, most hotels and airlines that provide pet facilities charge hefty fees. Such services as 'dog walkers' and 'dog daycare' are also available for those who need these services and can pay for them.

India and Dogs as Pets

The Indian urban population has become equally inclined to own pets. Some estimates put the pet population above 15 million in 2016 and their numbers are expected to grow by about 600,000 each year.[9] Based on its global evaluations, Euromonitor International believed that India has the fastest growing pet market in the world. A concomitant fallout is the massive demand for pet food, health products and accessories, making the Indian pet market a $ 1 billion industry, which is growing annually in double digits.[10]

It appears the Indian market is responding to this pet boom and a large number of Indian pet startups have appeared on the nation's horizon. BarkNBond, one of the pet startups, helps find all pet-related essentials - from veterinary clinics to pet-friendly cafes. Currently, the app covers the city of Mumbai. CollarFolk helps locating the right grooming and boarding services for dogs including a pet-friendly taxi for the trip. Doggie Dabbas is a one-stop shop which provides the benefits of home-cooked food combined with the convenience of traditional packaged dog food that can be hand-delivered to the doorstep. Petdom is a pet adoption platform that assists finding the right, deserving home for all pets in India. Timeforpet.com is a one-stop destination for everything a pet needs, be it food, accessories or medical care. Vivaldis Health and Foods Pvt. Ltd., is a healthcare products company that manufactures and markets novel medicines for chronic pet diseases such as obesity, cancer and arthritis. Waggle is a start-up that helps travelling pet parents find safe and pet-friendly homes in the places they are visiting. Pack offers holistic solutions for pet-lovers, from hydrotherapy and hostels to pet transportation and training clubs. They also have a state-of-the-art pet resort where a pet can get its own room to relax in when their pet parent is not in town.[11]

Dogs are by far the most favoured pets. Cats, rabbits, guinea pigs, birds and fish are also popular with families. In cities, families prefer to have pets that are small in size. This is because the average homes in cities are small, and hence, smaller pets or species of dogs are convenient to keep at home.

International Examples of Pet Regulations

A large number of cities in the developed world have well enunciated pet policies mandating a set of dos and don’ts that are applicable to the ownership of pets. For instance, the Leeds City Council in the district of West Yorkshire, England, has a policy applicable to pets within its geography. While it recognises the benefits of keeping pets and allows possession of pets, this requires a written permission under the Council’s Tenancy Agreement. Permission could be refused on grounds of unsuitability of property, type and history of a particular pet or of the tenant, number of pets, availability of open space and other cogent reasons. Microchipping of dogs has been mandatory since 2016. Those who are differently-abled are especially allowed to keep support dogs. The Council has gone to the extent of categorising properties and the number of pets that could be kept in each. Not more than two cats or dogs are allowed in any type of property. The Policy statement appends five forms providing template letters for application, permission, refusal, guidelines for tenants and breach of tenancy.[12]

Similarly, the City of London has a Pet Policy of May 2017. It reviews its policy every two years based on data and consultations. The aim of this policy is "to set out the approach that we will take when managing the tenancies and leases of those residents who keep or wish to keep pets". Interestingly, the City of London Corporation historically operated a 'no pets' policy across all its housing estates. This was revised, following a consultative exercise in 2014, to allow some pets to be kept. However, a property may not keep more than two 'house cats'. Registered guide dogs, hearing dogs and other assistance dogs are permitted in all properties. However, those "who live in a flat or a maisonette are not allowed to keep a dog".[13]

The City of Toronto in Canada prescribes a set of regulations for owners of cats and dogs who need to comply with Animals Bylaw. The dogs must be licensed and the maximum ownership permissible is three. "If you are tying up your dog on your own property, there is a time limit of one hour. The tether used to tie your dog must be more than three meters long". An owner has the responsibility to leash and control his or her dog in public. The owner is responsible for his/her dog if it bites a person or another animal. A series of actions thereafter would follow, mainly related to the well-being of the victim and the observation of the dog.[14]

In the Unites States, most laws that regulate the ownership of pets, especially dogs, are framed at the city level. These laws are termed ordinances, and are considered as lawful exercise of police power. "This power is said to derive from the inherent reserved right of a state as a sovereign to enact laws that protect the general welfare of its citizens". States in turn have delegated the authority to cities to enact ordinances. "They can cover a number of areas related to dogs, including the restricting of loose dogs, the number of dogs one may harbor in his or her house, as well as the keeping of a vicious dog". Local regulation by municipalities is universally acknowledged as ideal since they are in a better position than the state to satisfy the specific needs of their citizens".[15]

Need for Regulations regarding Pets in Indian Cities

In the context of the heavy rise in pet numbers, Indian cities need to wake up to the necessity of putting in place a set of pet regulations. Currently, in the absence of such rules and regulations, this is becoming an issue of great contestation. Since most people live in the larger cities in condominiums or apartments, commonly called flats in India, a slew of issues raises disputes that do not get adequately addressed. In this regard, it would be important to refer to Article

51A of the Constitution of India. According to this provision, "it shall be the duty of every citizen of India to protect and improve the natural environment including forests, lakes, rivers and wild life, and to have compassion for living creatures". List III of the Constitution comprising the Concurrent List enables both Parliament and state legislatures to make laws in regard to prevention of cruelty to animals.[16]

Additionally, Chapter 3 of The Prevention of Cruelty to Animals Act, 1960 (amended by Central Act 26 of 1982), deals with 'Cruelty to Animals generally'. The Act casts a series of responsibilities on the owner and their non-observance could invite fine or even imprisonment. These could be summarised as causing physical pain to the animal, making inadequate provision in confinement, unreasonable and excessive chaining, depriving the animal of food, drink and shelter and unreasonable abandonment.[17]

Guidelines of the Animal Welfare Board of India

The Animal Welfare Board of India, Ministry of Environment, Forests and Climate Change, issued a set of revised guidelines on pet dogs on 26 Feb 2015. This is a statutory body established in terms of Section 4 of the Prevention of Cruelty to Animals Act. It advises that a pet deserves similar attention and care that is due to a human child and abandonment of a pet amounts to violation of law. Barking is a natural form of expression and has to be tolerated in a society, although pet owners should take care that they don't disturb peace, especially during nights. It advises that dogs be sterilised and vaccinated and the pet owners/handlers should clean up when the pet defecates in public premises. Leashing of pets in public places is advisable. Pets cannot be debarred from the usage of elevators. Residential societies, even by a majority vote, cannot ban pets and cannot insist that small-sized dogs are acceptable and large-sized dogs are not. "If the residents or occupiers that have pets are not violating any municipal or other laws, it is not permissible for residents' welfare associations and apartment owners' associations to object to their having pets as companions. The general body cannot frame bye-laws or amend them in a manner that is at variance with the laws of the country. Even by a complete majority, a general body cannot adopt an illegality".

The Animal Welfare Board further states: "Seeking to ban pets from gardens or parks, is short-sighted. Firstly, you may or may not have any manner of right over the garden or park in question. Secondly, pets that are not properly exercised may exhibit aggressive conduct in frustration; and that cannot contribute to the benefit of the residents. It may be better to arrive by consensus at timings acceptable to all residents, when pets can be walked without inconvenience to other residents. These timings can then be intimated to the general body."[18]

City Regulations on Pets

The absence of city regulation is likely to escalate disputes and litigations and loss of productive citizen time. The situation may lead to each residential society coming up with its own bye-laws/rules in regard to pets that may result in unacceptable levels of variation in the same city. Hence, city governments need to respond to some minimum pet regulation. Since dogs are the most common pet in Indian cities, this paper concentrates on suggesting a template of city regulations that could be adopted with such amendments as are found necessary in the context of a specific town or city. This would have the healthy benefit of each society not coming up with separate sets of bye-laws that create confusion and dissent amongst members. Societies would retain the right to fit regulations in the context of a specific society's peculiarities without impairing the overall import of the city policy and regulation.

Recommendations for City Policy and Pet Regulations

The city policy should reaffirm the Constitutional background about the need for compassion for animals. It should reiterate the standout provisions of The Prevention of Cruelty to Animals Act and the policy advisory issued by the Animal Welfare Board of India. The city should set out its own stand in keeping with the Indian Constitution and the cited Act and Advisory.

In terms of City Regulations, the following may be provided:

i. Residential Societies may demand that owners of pets, who are members or tenants in the society, may register their pets by filling up a pet application form. The form may be worded as per Society's requirements seeking vital information about the pet. Irrespective of what else is asked, each pet owner in the society must provide a current photograph of the pet and the name of the pet. This may be at a point when an already residing member or tenant acquires a pet or at the point of occupation for new entrants. A copy of the Society's own rules in regard to pets may be handed over to the resident.

ii. The species of animals that are permissible in societies and the number of pets a Society may allow may be stipulated. However, these may not be too restrictive (such as no more than one) as long as the owner and the pets cause no nuisance to the residents and are able to manage the pets with satisfaction as stated in laws and guidelines. The idea is to safeguard the quality of life of residents and not to restrict the enjoyment of pets.

iii. The city regulations should not allow any commercialisation in the name of keeping pets. That is an entirely different activity and any breeding, selling or keeping them for any commercial use cannot be part of a pet policy as such activities are completely contrary to the concept of pets kept in a housing society.

iv. It is necessary that regulations make it mandatory that pets must by spayed or neutered by six months of age unless the procedure is deemed medically unsafe by a veterinarian. This is a practice prescribed internationally and needs to be adopted in our regulations.

v. Every pet is the pet of a particular resident. Hence, its place is within the confines of the home of that resident. Pets cannot be allowed to roam free or be tethered. Neither can pets be left unattended or locked out on yards or balconies while the owner is away. Pets in transit are to be carried, restrained by a leash, or placed in an animal carrier.

vi. While pets are being taken out for any reason out of the unit, building, or the premises of a society, they must be on leash. They may be exercised off the premises of the society, or in pet exercise areas, if such areas are designated for the use of the pets by the Society.

vii. Since public hygiene is vital, pet owners have a responsibility towards their community to keep the area clean. Hence when pets defecate in a public area, it is the owner's responsibility that they immediately clean up after their animals and discard poop in designated areas in a manner prescribed by the Society. Pet litter may not be disposed of in toilets. No pet waste may be dropped down trash chutes unless securely double-bagged.

viii. While pets provide great joy and companionship to the owner, they cannot be a pain to the others. No pet, therefore, can be allowed to become a nuisance to neighbours. This nuisance could take several forms, some of them irritating and some others more serious. For instance, incessant barking of dogs can disturb neighbourly peace and quiet that every family seeks. This becomes especially painful during late nights. This could rob people of their sleep, affecting their subsequent day, work and health. There could be pets who are unkempt or infested with parasites causing health hazards. Pets could be relieving themselves on walls and floors of common areas. They could exhibit highly aggressive behavior leading to excessive concern in individuals about dangers to themselves and their family members. Finally, there could be instances where pets attack members of the society and cause physical injury, damage to property or other tangible harm. In all such cases, responsibility lies with the owner and city regulations must specifically state this responsibility and the owner's accountability.

ix. Residents have to be responsible for the pets of guests who visit their flats. All rules applicable to society pets would apply to these guest pets. A limit may be put on the number of days the guest pet can stay in the guest of the flat. Such flat owner would of course have to intimate the society of the temporary addition of any pet in his/her flat.

x. Despite city and society regulations, cases of violations may come to the notice of the society authorities. If such infraction is spotted by society members or staff, it would be appropriate, in the first instance, to verbally point out to the violating member that he or she needs to comply with the rule or desist from certain acts of omission or commission that are causing inconvenience to society members. If the violating member fails to comply or repeats the offence, a notice may be served in writing by the society authorities to the violating member.

xi. The further process of action may be determined by the society rules. The Society may accordingly proceed to discipline the violator. The action in its extreme forms may impose fines, recovery or replacement of any society object damaged, or any other permitted penalties extending to the permanent removal of any pet from the flat and the Society.

CONCLUSION

The template cited above is primarily with a focus on the dog. The closest competitor to the dog as a pet is the cat. As stated earlier, rabbits, guinea pigs, birds and fish also find favour with families. These others are, however, less intrusive and much less likely to cause harm or nuisance, though health and hygiene issues may arise in regard to these other pets.

The propensity of some individuals, however, may be beyond the list mentioned and may include the bizarre and the exotic. Such cases have come to light around the world, sometimes leaving city authorities in a quandary. These may extend to reptiles and other animals that generally others would not keep. The city would have to keep itself receptive to petitions that it receives from its citizens. Alternately, the authorities may discover themselves instances that may not fit the description of the normal. In such matters, the city would have to evolve its regulations to cover new concerns as they arise. A good starting point would be to say in the Regulations that anyone who wants to keep a pet not listed above may seek prior clearance with the city government and that failure to do so may lead to penalties and seizure of the pet. What would emerge out of such a stipulation may be a learning process for city governments. They would be advised to approach the issues as they come with an open mind. It is quite possible, however, that in some cases, the animal protection laws that are already on the statute book may come into play.

It would also do well to remember that pets bring with themselves an economy and jobs. Statistics prove that their economic impact is not small. It would, therefore, be unwise to impede growth through undesirable regulation. Indeed, Indian cities would have to respond in similar ways as cities globally have done to take a whole host of facilitation steps for the enjoyment of pets. This would also require a consideration of the services related to pets and provide for them in city planning. What is, however, conceded is that space is a larger constraint in Indian cities, since our demography does not allow the kind of space luxury that cities in the western world possess. This may necessitate a somewhat stricter regulation.

However, the core objective can at no point be lost sight of, that is, that keeping pets is a legitimate and, in some ways, a noble activity that works towards creating a humane and compassionate society. With the slow demise of joint families, individuals can get dreadfully lonely and this loneliness may cause psychological trauma. The consequences of such trauma may have unhealthy consequences on society. In the light of these facts, no regulation should seek to impose limitations on a human being's desire of companionship with a pet. Its sole objective must be to see that the rights of the pet owner do not transcend in any way the similar right of the others to lead a quality life, uninhibited by the pet and the pet owner.

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PROF. V. M. DANDEKAR, AS I KNOW HIM

Arun P. Kulkarni

I came across Prof. Dandekar the first time when I, as a slightly frightened candidate for the Research Methodology Fellowship at the Gokhale Institute of Politics and Economics (GIPE), Pune, was interviewed by him. It was a late hot summer afternoon in 1958 and I was facing him, Prof. D. R. Gadgil, Prof. N. V. Sovani and Prof. D. P. Apte. Being a post -graduate in Commerce, I was initially denied even a call for the interview; then, when I pointed out my efforts in the study of Statistics, and some achievements in the subject, I was invited for the interrogation! Naturally, the entire responsibility of asking the tough questions fell on Prof. Dandekar.

His personality was overwhelming, the beard intimidating, the eyes penetrating and the voice commanding. I was, naturally, perspiring. The questions started coming beginning with the name of my Professor of Statistics, my marks in the subject, and the examinations that I was attempting to take to difficult topics like distributions, inference, sampling and multi-variate analysis. I still do not remember my answers but I know some of them were of the "I don’t know" type. The ordeal took more time than usual with others in the panel others asking me about my interest in Research Methodology and Agricultural Economics.

Anyway, I got through and soon joined the one-year full-time course in ‘Research Methodology’ with around 10 students started in earnest. Prof. Dandekar taught ‘Statistics’ and ‘Mathematics for Economics’. His way of teaching was unusual; many a time, he would get lost in his own thoughts and tell us concepts which were beyond most of us in the group. We would silently wait for him to come back to the topic covered on that day. After some time, he would ask, "now, where were we?". Then, with a twinkle in his eyes, he would answer it himself and continue. We understood very little but we knew that we were witnessing originality and creativity in action. Later, we would locate the topic in our prescribed text book and tried to find the meaning of what he told us in class!

He was short-tempered and did not entertain any non-sense. He was strict, disciplinarian and a blunt. All of us were in constant awe and fear of this person. He used to come in an old car, which quite often required a push from some of us to start! But we did this duty for him fondly!

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Despite his formidable personality, he generated a lot of respect and admiration from all of us.

Being the only student who knew a little more of statistics than the rest, he would give me some additional responsibilities like conducting tutorials, answering some elementary questions in the class and so on. He would also ask me occasionally to collect data from secondary sources for the projects that he was handling. Little by little, I came to know more about him and his thought processes. I started realizing that apart from Statistics, he was also an Economist and was being consulted by national and international policy makers on several economic issues. He was a down- to-earth, practical researcher. He believed firmly on transferring knowledge to the common person. He wrote fluently both in English and Marathi. He would contribute to many Marathi newspapers and journals while simplifying difficult concepts and offering straight-forward solutions without mincing words.

After the Research Methodology Course was over, I was admitted into the Ph. D. programme at the GIPE (affiliated to the University of Poona which is now named Savitribai Phule Pune University) and on completing the doctorate degree, I was given a post in the faculty of the GIPE. Though Prof. D. R. Gadgil was my guide for the Ph. D., I was asked by him to consult Prof. V. M. Dandekar on all aspects of statistical analysis (which were in ample measure), This experience of learning at close quarter is a treasure, which I will cherish forever. I learned several new tools and ways of interpretations from him. He would provide me references and even introduce me to other experts in the field to seek advice from. He encouraged me to attend Conferences and Seminars and always insisted that I travel and get first hand data from the field.

This relationship lasted during my entire life with him. During my tenure as a faculty member, a couple of my colleagues and myself at the Institute developed an interest in learning the French language. Fortunately, at that time, there was a visiting Professor from France at the Institute, who agreed to teach us every day in the half hour tea break at the GIPE. When Prof. Dandekar learnt about it, he not only encouraged it, but also asked us to extend the time to one hour and provided us a room with the necessary audio equipment and audio tapes meant for the purpose. After a year or so, he called me one day to tell that I was selected for a Ford Foundation Fellowship for post-doctoral studies in the United States of America (USA) for one year. I was naturally glad and thrilled and very much obliged to him and the GIPE for offering me the Fellowship. But I had some reservations which I explained to him in some details. I told him that I had read much about American agriculture and agricultural policies while I was in the Institute. For my post-doctoral research, however, I would have preferred to study European agriculture and policies, a subject which was then very rarely being studied in India because of the language problem. These policies were also then being redefined due to the emergence of the European Economic Community. He listened to me very patiently in spite of being irritated initially. And then, he acted very swiftly. He somehow persuaded the Ford Foundation to allow me to study in Europe, located a suitable place (Institute) in Germany, got the necessary permissions from the GIPE and the University of Germany, gave me a paid leave for two months for completing an intensive course in the German language and also guided me in defining the scope of my study there. Subsequently, he even made it possible for my stay to be extended in Germany by another year. And all this time, he was watching my progress carefully.

I had an opportunity of working and learning on several assignments undertaken and completed by the GIPE under his leadership. That included the one on the Impact of PL 480 imports, one relating to preparation of development plans, another on measuring community costs of industrial location, examining the behaviour of agricultural prices and so on. He was always very methodical in his approach; but we found that his creativity often led us to change tracks (approach) suddenly and swiftly. This was, at times, exasperating but we soon realized that such shifts were all a part of research.

Prof. D. R. Gadgil founded the GIPE with a vision of creating a 'Research Culture' in the country. His two able colleagues, Prof. V. M. Dandekar and Prof. N. V. Sovani tried hard to fulfil this mission by bringing in their expertise. Prof. Dandekar, a statistician of repute and a true nationalist, provided a disciplined approach to quantitative analysis. He played a significant role in teaching and experimenting with Census and Sample Surveys, development of survey questionnaires, analysis of data and presentation of findings. In his days, the GIPE set up its 'Statistics Department', equipped with Data punching, sorting and tabulating machines, a number of manual calculators (with three or four electric ones). This Department served the needs of all the researchers at the Institute. He trained investigators in collecting data who, in turn, trained researchers like us. Under his leadership, the huge work of Village Surveys (and Resurveys) was undertaken to document the profile and progress of the rural communities. He took equal interest in regional and urban development studies and I was fortunate to witness his efforts in getting the required funding to undertake and complete these projects according to his own rigorous standards. He was frank, sometimes brutally frank. But this frankness was the outcome of his hall markers of excellence.

Even after my departure from the GIPE, he kept a close watch on what I was doing. In some of my assignments like those concerning the Kolhapur District Plan or Planning for an Export Processing Zone, he took very keen interest. When I started my own research outfit and purchased a desk top computer in 1986, he asked me to develop a computer program for preparing the horoscope of a person, given his birth-date, birth-time and birth-place. At that time, computers were very novel and required for each application a computer program (usually in FORTRAN or BASIC language). He had compiled a huge data of the birth details of several persons and wanted to investigate the authenticity of the practice of astrology. I was, naturally, glad to prepare such a program and give it to him. However, during the process of this study, we had an opportunity to discuss the framing of research hypothesis on the various claims of astrologers, required sample sizes and appropriate analytical methods that could be used. I found in him, then, a Statistician par excellence. It was a sheer joy to observe him thinking, brooding, experimenting and laughing at getting some unexpected results. He found the computer so very convenient and useful for trying out all sort of his innovative ideas. Unfortunately, his efforts did not culminate into authoritative book on this subject that many of us had expected. We had to be merely satisfied with a couple of articles that he wrote in regional papers on the topic.

I, like many others, who learned and worked under him, owe him a deep sense of gratitude. We learned from him the value of hard work, to be critical of all premises - old or new, to value data and figures, to extract maximum meaning from the data and if in doubt, to go back to the field and collect more data and finally to be fair and objective in presenting our findings. We were often told by him that there is no ultimate word in research implying good research can always beget new and maybe better research.

If Prof. V. M. Dandekar were to read this, he would immediately brush it aside and ask, "now, where were we?"

THE ENDURING LEGACY OF V. M. DANDEKAR

Ramnath Narayanswamy

The year was 1985 and the place, Paris. I was in the last stages of completing my doctoral dissertation on "*Bukharin, the Peasantry, and the New Economic Policy (NEP): A Study of Historical and Economic Alternatives in the 1920s*". It may be of interest to note that earlier I was a student of Political Science. I completed my Bachelor's degree at Fergusson College in Pune in 1975 after which I completed my Master's degree at the University of Poona (now Savitribai Phule Pune University) in 1977. Both my degrees were in Political Science. During this period, I had developed a deep interest in the former Soviet Union, its history, its politics, its culture, its literature and its economy. On completing my Master's, I joined the Center for Soviet and East European Studies at the Jawaharlal Nehru University in New Delhi, as part of fulfilling the requirements for a Master of Philosophy in Soviet Studies. It was then that I decided to become a Sovietologist and immersed myself deeply into that domain.

I returned to Pune from Paris in 1984 to complete my thesis. It was a challenging period in my life. Our home was close to the Gokhale Institute of Politics and Economics (GIPE). It was no more than a few minutes' walk from our home. I had, along with my friends, over time, developed an emotional attachment to the GIPE which dated back to the year 1972. While I was studying at the Fergusson College, Pune where I spent three years living in the hostel, I recall a few of us visiting the Servants of India Society Library, (SIS) founded by the renowned Gopal Krishna Gokhale in 1905. The GIPE was located (and still is) within the premises of the SIS. It was an outstanding library for its time and we made full use of its rich resources. I recall spending many days (usually most Saturday mornings) attending the weekly seminars organized at the GIPE and would closely follow the discussions and debates that invariably followed the presentation. For us, it was exciting to be engaged with the world of ideas. Such an exposure expanded our intellectual horizons and widened our mental landscapes. All this happened even while I was not particularly conscious of the fact that in this process of exposure, I developed a deep emotional attachment to the institution. Little did I know then that I would, one day, inaugurate my academic career in its hallowed premises.

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In the summer of 1984, I happened to meet Prof. V.M. Dandekar who had retired as Director of GIPE in 1980 and was heading the Indian School of Political Economy (ISPE) which he had founded in 1970 along with other distinguished colleagues. The ISPE was also situated in one of the buildings of the Gokhale Institute at that time. It was my first formal meeting with this impressive personality. Of course, I had seen him many times at the Institute and outside. Since the early 70s, he used to stay very close to our home which was located on the same street. He had a striking personality. His salt and pepper beard, and his spotless white dhoti and kurta which was designed by him, often accompanied by an armless khadi jacket and his piercing eyes could at first sight be intimidating, but this distance would soon collapse after the first personal encounter which is exactly what happened in my case.

When I left for Paris in 1979, I shifted from Political Science to Economics and Sociology. My Ph.D. supervisor was the late Professor Charles Bettelheim. He was an outstanding intellectual and an influential thinker both in France and abroad. He was the author of several books and papers and this included a book on India called *Independent India*, published after he spent a year at the Indian Statistical Institute in Kolkata, in the mid 60's. In the early 70's, when I was at Fergusson, I used to very closely follow the debates that would take place in the pages of the Monthly Review (A reputed journal published from New York), between Charles Bettelheim and Paul M. Sweezy, the American Economist and Editor of the Monthly Review on the transition to socialism. The subject fascinated and intrigued me. I recall reading and rereading those debates several times till they sunk deeply into me. The subject was to hold my attention for the next ten years of my academic life. When I returned to Poona in 1984 to complete my thesis, Professor Dandekar had just completed a lengthy paper where he had evoked some of Bettelheim's ideas and writings. In one of my visits to the GIPE, by chance, I came across this paper and read it in one go. It was then that I decided to meet the Professor. Dandekar, personally. I introduced myself and told him that I was a student of Professor Bettelheim. He received me warmly, made me feel at ease and went straight to the heart of the matter. He asked me questions about Professor Bettelheim's work and I suggested some corrections in his drafts. He then asked me when I would be finishing my thesis and also asked me when I would be returning to Paris to submit my thesis. I gave him an idea of the French education system and the systems and processes that need to be adhered before the thesis is publicly defended. It was a good conversation and he told me that he would get back to me if he had any further questions or clarifications. He also asked me to be in touch with him.

Subsequently, the Gokhale Institute issued an advertisement for academic positions within the institute. Among other things it invited applications for faculty positions at its Centre for the Study of Management of the Socialist Economies of Eastern Europe. I was pleasantly surprised to see the advertisement and I applied for the post of a Lecturer. A few weeks later, I was asked to appear for an interview which lasted for approximately an hour and was conducted by a panel of eminent Economists. Prof. Neelakantha Rath was the then Director of the Gokhale Institute at that time. At mid-day, I got the message to go see him in his office. I think that was the first time we were formally introduced to each other and like Professor Dandekar he was pleasant and cordial and straight away told me that the Institute would be pleased to offer me a Lectureship in the and that I should join without further delay. I was thrilled by the news and elated by the fact that I was able to secure a job that I was suitably qualified to hold. I went home for lunch and gave my family the news of the appointment.

It was then that I received a phone call at home from Mr. Lele who used to work at the ISPE. Mr. Lele asked me to come to the ISPE at 3.00 pm and told me that Professor Dandekar wanted to see me. To me, it sounded urgent. I assured Mr. Lele that I would be at the School exactly at 3.00 pm. I had my lunch and presented myself at the ISPE at 3.00 pm. Professor Dandekar was well known to be a stickler for time and every day he would enter the Institute premises exactly at 8.00 am and leave at 5.30 pm. You could adjust the time in your watch following his entry to and exit from the Institute. He once told me with a twinkle in his eye that he treated his vocation as an academic in very much the same way as a factory worker treated his 8-hour shift in the shop floor with an hour thrown in for lunch. When I landed there, Mr Lele told me that Professor Dandekar had got delayed in a meeting and that he would join me in the next 30 minutes.

Professor Dandekar arrived shortly thereafter, and I was soon ushered into his presence. He seemed genuinely surprised to see me. I thought he had forgotten our appointment, I reminded him that I received a call from Mr. Lele asking me to see him at 3.00 pm. He replied with a chuckle: "Actually it was nothing important. I just wanted to tell you that if Rath had not taken you, I would have taken you". I was deeply touched. There was no drama in the utterance, no desire to shock and no intention to offend anybody or even any intention to please. It was a quiet statement of intent delivered without guile solely with the intention of telling me that irrespective of what decision the Gokhale Institute might take on my appointment, he had made up his mind to make an offer to me. Since that date, Professor Dandekar and I have enjoyed a thoroughly warm and friendly relationship. He was very supportive of any initiative that I undertook and would extend all possible help over the years. I developed a deep respect for not only his intellect, his scholarship and the range and depth of his interests, but also his lack of affectation, his spontaneity and lack of pretension, I developed a similar relationship with Prof. Rath and over the years we grew to be good friends.

Sometime later, the ISPE shifted from the SIS premises into its own building called *'Arthabodh'* located on Senapati Bapat Road. Professor Dandekar began vigorously building the institution by creating a decent library, hiring essential research staff and holding seminars and conferences at periodic intervals. It was a brave yet modest beginning. I found myself drawn willy-nilly into the process.

Sometime in 1986, the idea of holding an International Conference on the crises in Soviet-type economies took hold of me. Eastern Europe was in turmoil and the entire Soviet bloc was ablaze with the winds of change, sweeping across the entire region. As a trained Sovietologist, I could discern the winds of change sweeping across Central and South-East Europe and I strongly felt that it might be a good idea to capture these developments by bringing together eminent Sovietologists from all over the world and creating a conversation on the future of Economies of the Soviet type. I first took the idea to the appropriate authorities in the GIPE but they were not terribly receptive to the idea, not the least because they did not understand the importance of holding such an event, I was forced to confront such ignorance in the Gokhale Institute from time to time (which eventually compelled me to resign and leave its service). Then, I took the idea to Prof. Dandekar and he positively responded to it and immediately supported the Project. He told me in no uncertain terms that the ISPE will extend every possible help to the initiative and asked me to go ahead. I was immensely grateful for his readiness to help. The grace he displayed and the actions that he took in support of my efforts evoked even a greater sense of admiration and respect for him.

It took us almost one and half years of hard work to bring the project to fruition. I wrote to many of the top Sociologists in the world and the majority of them were excited by the proposal and appreciated the idea. The Conference was eventually held in December 1987 in the Lonavala premise of the ISPE. It was a five-day conference and attended by some of the finest minds in Sovietology including such names as Professor Karl Eugen-Wadekin, from Germany, Professor Michael Ellman from the Netherlands, Professor Bernard Chavance from France and Professor Jean Marie Balland from Belgium. Several well-known Indian Economists also graced the conference with their presence including Professor Jayashekar from the Jawaharlal Nehru University in New Delhi, Professor Nirmal Chandra from the Indian Institute of Management, Calcutta (now Kolkata), Professor K.N. Raj from the Centre for Development Studies in Trivandrum, Professor N Rath, Director of the GIPE, Professor K.K. Dasgupta, Pradip Apte, Professor Bibek Debroy, Professor Sriraman, all from the GIPE. Also present were Shri. Krishna Raj, the then Editor of the Economic and Political Weekly and Dr. S.L. Shetty of the *Economic and Political Weekly* Research Foundation.

We faced a number of challenges in the organization of this Conference, the first and foremost of these challenges was raising funds to organize the event. At every stage, I recall Professor Dandekar stepped in without hesitation to not only engage in these challenges but also in finding a solution for them. He wrote a letter to Dr. Manmohan Singh who was then in the Planning Commission seeking financial support. Dr. Singh responded positively to our request by making available a handsome ground to enable us to hold the conference. If I recall correctly, we also received a modest grant from the Indian Council of Social Science Research, New Delhi that enabled us to meet some of our essential expenses.

All in all, it was a wonderful Conference characterised by lively discussions and scholarly presentations from Indian and Western scholars and was very well received by those who attended the conference. The conference was indeed historic. Point of fact, it was the first Conference held anywhere in the world that actually anticipated the unceremonious collapse of the former Soviet Union and the socialist economies of the countries of Central and South-eastern Europe.

All the nine countries of Eastern Europe witnessed an unprecedented collapse in the winter of 1989 and the Soviet Union itself witnessed a similar collapse 2 years later in 1991. Had it not been for Professor Dandekar's encouragement and active participation, this International Conference would not have seen the light of day.

The entire credit for holding this unusual and intellectually stimulating event goes to Professor Dandekar. He participated with characteristic gusto in all the proceedings and his presence did much to make those five days lively and memorable. It may be noted in passing that Soviet and East European Studies was not a well-known or well-established discipline in the country. There were only 2 centres devoted to researching the socialist world, one of these was located at Jawaharlal Nehru University in New Delhi and another in Bombay (now Mumbai) University, Kalina, Mumbai.

I continued to enjoy a very pleasant relationship with the Professor Dandekar right up to the time when I left the GIPE, in the latter half of 1989, to take up an appointment at the Center for Soviet Studies in Bombay University. I donated a significant portion of my personal library to the library of ISPE. Even later, I used to meet Professor Dandekar fairly frequently and would thoroughly enjoy my interactions with him. He had an excellent sense of humour, would often crack jokes with a twinkle in his eye. He was a personality who had both his feet firmly on the ground. His intellectual integrity was exceptional. He was ever immersed in the world of scholarship and never hesitated to enter into an intellectual battle. He belonged to a generation of scholars that have sadly all but disappeared today. I write these lines with a deep sense of respect and humility as a tribute to his genius and his lasting impact on my life. That is the way I prefer to remember him and that is how he stays in my memory.

PROFESSOR V.M. DANDEKAR: A PROFOUND INFLUENCER IN MY LIFE

Sheetal Mahakali

INTRODUCTION

Professor V.M. Dandekar (1920-1995) was an eminent economist and social scientist in the early and extended period of the inception of economic planning in India and creation of a research infrastructure for economic planning in the country. As an eminent person who held various important positions and offices, he was different things to different people. To me he was my Ph.D. guide, Director, and much more, my guru. He was my academic counsellor but whose influence over me was all encompassing.

That segment in space time in academia and in impressionable years of my life was a special intercept in my journey of life. It is a labour of love to write my tribute to the person who was central to making it so and a pleasant task to reminisce that period and milieu and locus hub in order to portray an eminent person of the time and milieu.

This tribute contains judgment of him as an outstanding personality in a variety of dimensions which in good measure I was witness to over more than a decade of my life as a lecturer, researcher and doctoral student in Pune. To begin with, a brief on my early encounters with him is in order after which I focus fully on this personality while later in the piece, I attempt to appreciate him *vis-à-vis* my own relationship with him. The sections are organised as follows. II. Context and Milieu, III. Academic and Work Profile and Some Facets I Admired, IV. Vignettes from Personal Experience, V. A Summing Up.

II. CONTEXT AND MILIEU

After completing my post-graduation in Economics from Mumbai University (and a short teaching stint at the Bhartiya Vidya Bhavan College and S.N.D.T. College, Mumbai where I taught BA Economics subjects), I first met Professor Dandekar in 1978 in Pune at the Gokhale Institute of Politics and Economics (GIPE), of which he was the Director.

The GIPE is an academic institution of a pre- Independence legacy founded in 1930 under the trusteeship of the Servants of India Society (SIS), which in turn was

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founded in 1905 by Gopal Krishna Gokhale, as a mission in the service of the country. The GIPE campus was (and still is) located within the larger periphery of the SIS premises. The ethos and architecture (Indo-Colonial) of the integrated campus housing the two institutions, of somber hues of stone and earth, ground level and single storied buildings featuring recurring scalloped arches and trellised upper balconies, all set in a green surround under an open sky, were evocative of austerity, resolve, aspiration and the idea of education as an uplifting influence. When I first met Professor Dandekar in his office I felt his natural aspect coalesced with that whole ethos.

Alongside my Ph.D. program and teaching assignments (at the GIPE), I was a Research Associate of the *Indian School of Political Economy* (ISPE) which Professor Dandekar had founded in 1970, and served as its Founder Director. Its premises at the time were within the premises of the GIPE. Thus, I was both a Ph.D. student and an employee and member of the research staff of the ISPE, working under the direction of Professor Dandekar.

In my first interface with Professor Dandekar as my guide he had asked me to write a brief proposal as to my idea for a topic for my Ph.D. thesis. I wrote it impromptu (from the outer frontier of my inner mind) on a few foolscap sheets. As things transpired its main thrust (reconstructed) was incorporated and finalised into my formal research proposal which was approved and undersigned by my guide and submitted to the University.

The above were points of a trajectory that landed me into a bastion of academia in a city on the banks of the Mula Mutha River founded in 1728 as a Peshwa capital which in the late nineteenth and early twentieth centuries was a converging locus of enlightened nationalism and vision of education to be the ultimate game changer of society. Now to turn to Professor Dandekar's training and his subsequent work.

III. ACADEMIC AND WORK PROFILE AND SOME FACETS I ADMIRED

Growing up in a city of that ethos, Professor Dandekar pursued the path of education and chose a career in an institution in a public space engaged in research, training and higher learning in the area of the economy and political economy of India. His original subject of mastery was statistical science. It was an emerging, newly developing scientific discipline in India and valuable for the purpose of economic governance and planning in independent India. He was among the early batches graduating from the prestigious Indian Statistical Institute (ISI), Calcutta (now) Kolkata where he was awarded a gold medal for an outstanding performance. Soon after, it was at the GIPE, Pune where he absorbed himself as a researcher; he used his mastery of statistical methodology and while conjoining the latter discipline to the social sciences, he produced seminal and insightful works on problems and issues of the Indian economy, spanning a wide canvas of subjects.

Among his most outstanding and well-known works, *"Poverty in India"* (ISPE, 1971), co-authored with Nilakantha Rath), was the first systematically derived estimate of poverty in the country using the concept of poverty line as defined by the expenditure required to purchase a minimum calories basket of goods, and estimating the segment of population falling below that reach.

Poverty in India was essentially an interpretive empirical study based on nationwide data from National Sample Surveys of income and expenditure levels of the population and using a scientific methodology. The concept was incorporated into India's Five - Year Plans later. This genre of work and approach was archetypal of many of his works. A recognised authority in the field he served as the Chairman of the National Sample Survey Organisation (NSSO), Kolkata for more than a decade and in that capacity, he designed, directed and guided sample surveys and pioneered techniques to undertake large sampling procedures suitable for India. In this context, I must say proudly that my statistical knowledge derived in the course of my work with him was imbibed from a statistical genius (which he truly was).

As the head of an institution, he was an efficient administrator. He was decisive. He cleared papers with speed. In those days when computers produced outputs in reams his was a paperless office. He was a speed reader with a quick grasp of the essence of a text. Academician, thinker, Chairman/CEO/Director, educationist, author and person; in those different capacities, he juggled diverse roles with ease - chairing committees, heading institutions, managing multiple projects of the NSSO, the Ford Foundation and State and Central governments, authoring several books and papers (in English and Marathi), teaching (he taught Statistics early in his career to post graduate students and in my time he taught the Pierro Sraffa tradition to the M.Phil. class) and occasionally delivering keynote addresses, Memorial Lectures, other distinguished Lecture series (in my time one was to the audience of the Vasant Vykhanmala or Spring Lecture Series held every year in Pune since 1875 - a Series begun in 1875 by the renowned personality Justice Mahadev Govind Ranade) as and when occasions arose.

He combined being a modern person with having a strongly rooted ethnic identity. His written and spoken Marathi had a literal quality and his aesthetic choices were of a Maharashtrian cultural heritage. He was in the proud mould of Pune's Nutan Marathi Vidyalaya (NMV), his alma mater. He had a sense of humor. He was known for his humorous quips which came up spontaneously. With his pair of light- colored eyes, gifted from the gods, he could view the concourse of the world in its hilarity! His presence had an aura. It was in high amplitude in the surroundings of his office and in the confines of a classroom. And I turn now to some vignettes from personal experience.

IV. VIGNETTES FROM PERSONAL EXPERIENCE

At the start of my Ph.D. programme, I had stayed at the Dandekar bungalow for an interim period of a few months before moving to a hostel. I had got to know Professor and Mrs. Dandekar personally and informally in their home. It was a charming, quintessentially Chitpavan Brahmin household imbued with a characteristic way of living which was simple, frugal, orderly and aesthetic and evoking a life of the mind. Mrs. Dandekar was a professor of Demography at GIPE. From the Institute to their home was an efficient work life continuum of a working couple. In its compass they had raised a large family of their two sons and extended family. The bungalow as architecture had an aesthetic austere minimalism (a heritage piece).

When I joined the ISPE, I had no prior work experience except college teaching. In my new workplace observing my Director's strong work ethic, integrity and unflinching commitment to certain values was inspiring and uplifting.

My first assignment at the ISPE was negotiating the genre of species called *economic data series.* I felt inundated up to my ears with deluges of them. Arriving on my desk in the shape of vectors or matrices of arithmetical numbers they had an alternative avatar in a linear or curvilinear geometry and a further alternative manifestation in concise algebraic equation format (configured in Greek Hieroglyphics). Some dread the species but in an early triumph I struck a cooperative alliance with it (a career long ally) in its different powers of manifestation!

In technical matters especially, Professor Dandekar demanded everything to be done *exactly* as he instructed. There were several non- negotiable items (from the rule book of a disciplinarian). He encouraged a certain concise style of writing. Few people have the magnanimity to share their real strengths. He had that quality when one worked with him. Regarding my Ph.D. work I never felt that he did not give time for my work. There were review meetings at regular intervals. In each meeting he had a ready connect to the thread of my work and a ready recall of the fissure lines in it. In each meeting the motto came up that *my work has to advance every single day*. It was a motto which took a while to get pinned into my scheme of things!

What I imbibed of work skills work ethic and specific skills stood me in good stead throughout my (subsequent) career (of 19 years) with the Government of Oman (State General Reserve Fund, Ministry of Finance).

My academic journey aside he had a special role in my personal life. My marriage took place at the residence of Professor and Mrs. Dandekar under their auspices. I am indebted to them forever for enabling this union.

V. A SUMMING UP

Professor Dandekar believed in and practiced the motto "nothing in excess". Moderation was perhaps culturally ingrained in him. He also believed in following certain rules as a structure to living. Perhaps that also was a (secular) legacy of a brahminical origin. As a person he had authenticity, depth, strength of character and an identity in a certain tradition. In all these different configurations (and in the gestalt), he was a special person to know.

Through his life's works of quality, concerning economic, socio-economic and political issues pertinent to the country (and his native state of Maharashtra), he contributed to society and its potential upliftment. Upholding and enhancing the tradition of a reputed institution of a legacy and being an inspiring presence in it was extra special. He belonged partly to the India of the high tide of the freedom movement but substantially to the new free India bursting into a new future. He was one to put shoulder to the wheel of the new nation in its task of addressing its vast economic problems. In that task he was a star which shone from the firmament of Maharashtra! It would take many stars across her whole sky shining in their space to make India great!

As for me, in my mind's assimilative mode to have over it the overarch of a guiding light from a select person of wisdom and of a fine blueprint for living was a special gift whose value in a lifetime is inexpressible. In that module it was the journey which was special and the destination flowed naturally from it.

It featured the stamp and motif of *my contemplative mind*, and it preceded and was foundational to (the module of) *my working life.*

In its regency my mind absorbed insights in my field and of a wider compass; things of ethics and a thought process as to what is really the good life; things for which the answers can come only from one's own within and one's ongoing context; yet to the philosopher, guide and source person who triggered the thought process, forever I am indebted! Before stepping into a working life, it was a process of empowerment both in professional and personal dimensions. For all those things of unquantifiable unmonetizable value, forever I am beholden!

On the occasion of Professor Dandekar's centenary year celebrations, I salute the memory of a fine son of the soil of India and, in my life, my academic counsellor and inspiration in life.

I thank the *Journal of Indian School of Political Economy* for inviting me to write my tribute for their Centenary Year Volume in his memory.

I join all those people whose lives he touched in saluting his memory with affection and reverence.

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MY ACADEMIC ENCOUNTERS WITH PROFESSOR V. M. DANDEKAR

Rajas Parchure

I joined the Gokhale Institute of Politics and Economics (GIPE), Pune as a post graduate student in 1979 when Prof. Dandekar was the Director and was in his final year of service at the Institute. I was of course aware of his eminent presence and formidable reputation since my graduate student days in Fergusson College (located next door to GIPE) where he frequently visited to give talks. In those days, and later, I had witnessed occasions in which he crossed lances with the likes of P. V. Sukhatme, Sharad Joshi, R. N. Malhotra, Govindbhai Shroff, V. V. Borkar, P. R. Brahmananda, Gautam Mathur and other well-known individuals on a variety of conceptual and policy issues like the measurement of poverty, pricing of farm produce, the policy of Open General Licence for some importables, regional imbalances in Maharashtra, the true purport of Piero Sraffa's contributions and numerous other subjects. Like several members of his audiences, I too was awed by his inimitable oratory, sense of humour, sharp wit and unforgiving and sometimes devastating criticisms of his opponents.

Prof. Dandekar did not teach our batch during the years 1979-81 when we were completing the Master of Arts degree. I only recall his commanding presence during the faculty seminars in which visiting scholars were also invited to present their research work; I can still recall the speakers casting furtive glances in his direction with apprehensions about how he would react. He too gave a couple of seminars which flew over my head. In 1980, after hosting the annual Indian Economic Conference at the Institute, he retired and joined the Indian School of Political Economy [ISPE which he had founded in 1970 along with many of his well-known contemporaries and colleagues drawn from all over India], and which was temporarily located in one portion of the M.A. Building that had recently been built in Gokhale Institute. In 1981 I became an M.Phil. student along with few of my classmates in which Prof. Dandekar taught us a limited-lecture course based entirely on Piero Sraffa's [1960] monograph.

This course turned out to be an eye-opener for us. It made us aware of how much more we had to learn and how much there was to unlearn. Even though Prof. Dandekar made us plunge directly into Sraffa's book without providing any

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background or its motivation it made us aware of how little we knew about *analytical classical economics.* Our history of economic thought course was taught and learnt from textbooks by Roll [1938] and Heilbroner [1953]. For those who were taught economics the way we were and students even now are, neoclassical economics was *all* of economics, whether micro, macro or general equilibrium, excepting for some special cases where Keynesian methods became necessary. We were completely unaware of capital theory debates and the limitations and fallacies of neoclassical economics. In view of our undeveloped sensibilities, we were not able to keep pace with the course.

Nevertheless, Prof. Dandekar would make some intermittent remarks either spontaneously or in response to some questions from class. One such remark he made was that the neoclassical theory of the firm, industry etc. had no place in syllabi meant for economics students, it was suitable for teaching M.B.A. students. Another remark he made was that a uniform rate of profit in all industries in the Sraffa system cannot be considered as an equilibrium condition in the same sense as $MR = MC$ or $S = I$ are the considered to be equilibrium conditions. He said that the Sraffa system even with a uniform rate of profit was indeterminate with the number of equations falling short of the number of variables so it makes no sense to refer to it as being, or not being, in equilibrium. I was to recall this remark later when I was led to work on the Sraffa system. How, I shall describe below.

Around 1986-87 or thereabouts, there was an announcement and a call for papers from the International Economics Association that their Annual Conference on the theme of "Agriculture - Industry Imbalances," or something to that effect, would be held in New Delhi. I decided to try my hand at preparing a paper because the theme was familiar and it was hotly debated in those days. The work of Prebisch [1950] and Singer [1950] had been covered in our courses on Development Economics. The India versus Bharat debate had been ignited by Joshi [1982] and Lipton [1977] who held that the urban bias in economic policies was responsible for the continuing poverty in rural areas. Besides that we had a first-hand experience of the droughts of the seventies in India and particularly in Maharashtra, etc. I thought I could take a two-sector Sraffa model with one sector being Agriculture and the other Industry and try to find conditions in which the wages and profits earned in Agriculture would stand below those in Industry. I soon realised, recalling Prof. Dandekar's remark about the indeterminacy of the Sraffa system, that this would be a foolish idea which would require the determination of five variables; two real wage rates, two rates of profit and one relative price, (i.e., the terms of trade between agricultural and industrial goods) from two equations. But I did not know how to determine even the three variables of the two-industry Sraffa system itself, viz., the real wage, the rate of profit and the relative price. So, I turned my attention to that problem and thought that I could fruitfully return to the agriculture - industry problem after I had first solved the smaller problem. I never returned to the Agriculture - industry problem because the indeterminacy problem completely absorbed my attention.

After many trials and errors, I came up with the following system. If I supposed, to begin with, that the economy is a static economy in which wages and profits are wholly consumed then I could obtain the following systems of equations;

$$(A_{11}p_1 + A_{21}p_2)(1+r) + WL_1 = B_1 p_1 \qquad \ldots(i)$$

$$(A_{12}p_1 + A_{22}p_2)(1+r) + WL_2 = B_2 p_2) \qquad 1\ldots(ii)$$

$$\alpha r \mathrm{K} + \beta WL = F_1 p_1 \qquad \ldots(iii)$$

where A_{ij} and B_i are the sizes of inputs and outputs, $F_1 = B_1 - A_{11} - A_{12}$, $F_2 = B_2 - A_{21} - A_{22}$ are the physical surpluses or net outputs of the commodities, L_i the labour requirements, α and β are propensities to consume commodity 1 of capitalists and workers, $K = (A_{11} + A_{12})\, p_1 + (A_{21} + A_{22})\, p_2$ is the capital stock and $L = L_1 + L_2$ is the total labour. Letting $p_1 = 1$ be the *numeraire* there are three variables to be determined, the relative price of commodity $2 = p_2/p_1$, the real wage rate $w = W/p_1$ and the rate of profit r. Representing the equations in matrix notation we get,

$$\begin{bmatrix} B_1 - A_{11}(1+r) & -A_{11}(1+r) & -L_1 \\ -A_{12}(1+r) & B_2 - A_{22}(1+r) & -L_2 \\ F_1 - \alpha A_1 r & -\alpha A_2 r & -\beta L \end{bmatrix} \begin{bmatrix} 1 \\ p \\ w \end{bmatrix} = \begin{bmatrix} 0 \\ 0 \\ 0 \end{bmatrix}$$

where $A_1 = A_{11} + A_{12}$, $A_2 = A_{21} + A_{22}$. To solve the system set the determinant of the matrix on the left-hand-side equal to zero, solve the lowest positive rate $r < R$ (the standard ratio) and then substitute r in the first two equations (i) and (ii) above to determine p and w. This gives an equilibrium solution because all markets are cleared simultaneously.

Suppose for example that the economic system is represented by the following data

$$(2 + 1p)\,(1 + r) + 5w = 5$$

$$(1 + 3p)\,(1 + r) + 5w = 7p$$

with the demand = supply equation for commodity 1 being

$$0.2rK + 0.6wL = 2$$

The equilibrium solution is $r = 0.2786$, $p = 0.8376$ and $w = 0.2743$ with the *numeraire* $p_1 = 1$. This problem possessed me for the next couple of years as I successively generalised it to the case of several commodities and saving by both workers and capitalists to determine the growth rate and commodity outputs besides prices and profits and further generalise to fixed capital, human capital and the like.

After the first draft of my results was ready, I was very keen to obtain Prof. Dandekar's evaluation of my effort and to seek from him further suggestions. I presented my manuscript to him. He said he would need some time to examine it. After a few days I got a call from him at my residence and his tone was unmistakably irascible when he asked me to meet him expeditiously. I, of course, rushed to meet him at "Arthabodh", ISPE's new premises. When I met him, he exploded on me and proceeded to give me a complete dressing-down in the harshest possible terms and in a tone and pitch that reverberated across the hall of ISPE and could be heard by all who were working there. The treatment given to me that day (it was late December or early January) had everything to do with me and nothing to do with my work. At the end of the scolding, he suddenly gave me a bright smile and with a mischievous glint in his eyes asked me to meet him again on the day of "Sankrant" to discuss my manuscript and remarking (in Marathi*) that he would "make a Sankrant of it!" [I did not get the joke until long after I had recovered from his onslaught.] Because I was in a state of complete confusion, I briefly paused to meet Prof. Anand Nadkarni who had taught us Public Economics and occupied a cubicle next to Prof. Dandekar's. Prof. Nadkarni was the very antithesis of Prof. Dandekar; he was a paragon of balance and composure and possessed of a serene wisdom. He calmly explained to me, "Rajas, before you think you have contributed some missing pieces to the Sraffa system you should pause to think why Sraffa did not do it himself. Surely, he could have easily done what you think you have done!" I just didn't understand how but his words did calm me down a bit and shed some light on the cause of Prof. Dandekar's outburst.

* "Sankrant" is the Hindu festival that is celebrated on the day immediately following the winter solstice and marks the beginning of spring. It was on this day that the Maratha army was massacred by Ahmed Shah Abdali's Pathan army at Panipat in 1761. From then on "making a Sankrant of something" has in Marathi meant "massacring that thing".

When I met Prof. Dandekar on the appointed date he was in a bright mood and began to discuss the first chapter until he came to the system of equations 1 above and asked, "why should the propensities to consume of capitalists and workers be different; why $\alpha \neq \beta$? Why can't they be the same? Why not $\alpha = \beta$?" I had a ready answer. I explained that if $\alpha = \beta$ then equation 1 (iii) and the national income identity, $rK + wL = F_1 + pF_2$ would by themselves determine the relative price p irrespective of w and r because

$$\alpha rK + \alpha wL = \alpha(F_1 + pF_2) = F_1$$

implies

$$p = \frac{(1-\alpha)F_1}{\alpha F_2} \qquad (2)$$

but this solution would not be consistent with that obtained from 1 (i) and 1 (ii). "Okay", he said "that is mathematically correct but what is the economic meaning/rationale of $\alpha \neq \beta$?" I could not answer that. I said that the case under discussion was very special, two commodities and incomes fully consumed. In the general case of consumption and saving by both capitalists and workers the Kaldor - Pasinetti stability condition $\beta > \alpha$, (i.e., $\alpha \neq \beta$) would be required for a viable solution. He then asked me to give an outline of how my model worked in the general case. I explained that I had added to the Sraffa system demand equations for the consumption goods and capital goods and allowed both capitalists and workers to partly spend and partly save and then formulated the dual of Sraffa's price system which was a generalisation of Sraffa's standard system and obtained a system that could determine the relative prices, the rate of profit, the real wage rate, the growth rate, the absolute sizes of industrial outputs and the shares of ownership of the capital stock. [See Parchure, 2019] He nodded approvingly but probed further, "What about returns-to-scale?" I said I had assumed fixed coefficients and constant returns to scale because without that assumption I would not be able to separate the primal price and the dual output systems. He objected, "But Sraffa did not suppose constant returns." To which I agreed. So, it was decided that we would meet again to discuss the further chapters of my manuscript but only if I was able to satisfy him with the economic meaning of $\alpha \neq \beta$ in the special case of equation (1). I have to confess that I could not find an explanation that would satisfy me, let alone him! The next meeting did not take place.

In 1992, I joined the National Insurance Academy (NIA), the apex research and training Institute of the Indian Insurance Industry (which in those days meant the public sector insurance companies) and became aware of two contributions of Prof. Dandekar to insurance (a) as a member of the Era Sezhiyan committee for the restructuring of the Life Insurance Corporation of India, which had recommended breaking up the LIC into four separate zonal companies which would eventually compete with one another all over India, and (b) his pioneering work in single-handedly formulating and actually setting up crop insurance operations for the first time in India. In 1993 the Dr. R. N. Malhotra Committee on Insurance Sector Reforms was set up by Dr. Manmohan Singh under the Chairmanship of Dr. R. N. Malhotra, Former Governor, Reserve Bank of India, whose mandate was to propose a roadmap for the liberalisation of the insurance industry in line with other sectors of the economy. It was a time of great ferment in the public sector insurance companies and therefore in NIA. Not only the unions but the managements seemed to have decided independently of one another to put up a well-reasoned resistance. Dr. Malhotra did a part of the committee's work in NIA where he stayed for a few days to hold discussions with various stakeholders. I was then the only faculty member in economics and therefore, in spite of my lack of seniority, was asked by my Director to appear before Dr. Malhotra and a few of the members. Dr. Malhotra asked me about the monopoly status of LIC and how it could be replaced by a competitive industry in its place and what the structure of the industry should be in terms of the number of companies and the kinds of products that should be sold. I did not answer his queries but argued back instead that it would be too literal and too simple-minded to call LIC a monopoly only because it is the single seller; that it is only when the firm uses its position as single seller to make supernormal profits at the cost of its consumers that it obtains a monopoly status that is detrimental to the interests of consumers. But, in terms of economic substance, LIC delivered a near-perfectly-competitive result in the market. I argued that LIC sells life insurance policies in two modes, "participating" and "non-participating". In the latter it guarantees to the policyholder the sum assured under the policy and itself assumes all the risks. In case of the former the LIC shares its own profits with the policyholders paying to them a whopping 95% of its profits as bonus and pays 5% to its owner, i.e., the central government after paying 12.5% of profit as income tax. On the government's capital investment of Rs. 5 crores the LIC was paying about Rs. 140 crores in '93-'94 as dividend, which amounted to a 2800% rate of return, perhaps the highest anywhere in the world! It was only in this respect that LIC was non-competitive - if this dividend could be reduced and statutorily capped at say Rs 1 Crore, i.e., 20% on the capital invested by the government of Rs. 5 crores, and the remaining profits of Rs. 139 crores could also be paid to policy holders the result would be price = marginal cost. It was the central government which was usurping the consumer surplus through LIC, not LIC itself. Moreover, I continued, 75% of the investment portfolio of LIC was invested in government or government specified public sector activities at less than market interest rates etc. I got the feeling that the Committee was stunned by my reaction. Dr. Malhotra only remarked to the members that I was trying to be clever and asked me to leave. I was not called again to discuss other issues. Sometime later at a dinner hosted by the NIA to which he had been invited Prof. Dandekar casually asked me what I was doing in NIA. I narrated to him the stand that I had taken with the Malhotra Committee. He didn't like it "And what about the big houses that LIC constructs for its employees?" he retorted angrily. Out of fear of inviting his wrath (and that too at a dinner party in a swanky hotel) I deftly changed the subject and told him that I had also started to read his papers on crop insurance.

In the late 1990's I was asked to conduct training programmes in crop insurance because the crop insurance cell in the General Insurance Corporation (GIC) was to be hived off as a separate company called Agriculture Insurance Company of India (AIC). I therefore began to study crop insurance in greater detail, particularly the unique crop insurance model that Prof. Dandekar had created and successfully implemented. I also studied how the scheme was actually administered and was dismayed to find the involvement a very large number of state and central government agencies resulting in extremely painful delays of eight to twelve months or even longer in claims - settlement. Also, what was indemnified was only the crop loan amount which was a fraction of the cost of production incurred by the farmer which in turn was a fraction of the value of the farmers' output. I felt that the scheme was grossly unfair to the farmers who, I felt, ought to have been insured for the values of their outputs. Simultaneously I read the literature about deficient or excess rainfall being the central cause of crop losses in India accounting for nearly 80% of the claims. I therefore proposed an insurance scheme around the event of rainfall itself, and wrote a paper on it under the title, "Varsha Bonds and Options: Capital Market Solutions for Crop Insurance Problems."[2002] (which I dedicated to Prof. Dandekar who had expired in 1995). Along with Dr. K. N. Rao, then with the AICI, I devised a product called "Varsha Bima". The sum assured was set equal to the value of farmers' output and the claim settlement time was less than one month. I need not go into further details.

Sometime in 2013, Shri Prakash Bakshi, then Chairman of NABARD, and Dr. Rajendra Kulkarni (an alumnus of GIPE working in NABARD) visited me at GIPE and asked me to prepare a paper on crop insurance which they could pilot with the central and state governments and press for a larger credit inflow to farmers. I prepared a paper for them titled, "Strategies for Increasing Agriculture Insurance Penetration in India"[2013] in which I showed that the average annual government support to insurance was limited to a paltry Rs. 1558 crores per annum, coverage was limited to at most 25 million farmers and inspite of being linked with credit, crop insurance had not obviated the need for periodic debt waivers, the latest of which was P. Chidambaram's Rs. 70,000 crores waiver which gave relief only to 50 million loanee farmers out of the 120 million farmers of India. I went on show that only Rs. 8,000 crores per annum would be required to cover nearly all 120 million farmers in India under the National Agriculture Insurance Scheme and with somewhat larger allocations the sum assured can be raised and brought closer to the value of farm output [Parchure, 2013].

There the matter rested. All of a sudden in late 2015 I got a call from the Prime Minister's Office asking me to come and meet the joint secretary Shri Anurag Jain. I was asked to carry documents on weather-based and area-yield based crop insurance. Before going to the PMO I briefly met Shri. P. J. Joseph, then Chairman of AICI, to ask him what could all this be about. I got an impression that several stakeholders including the World Bank had suggested to the PMO to simply to go in a big way into weather-based insurance and eventually do away with the area-yield insurance scheme. I was aghast. I had studied several weather-based insurance products that had been introduced in the market by insurance companies and was aware of the completely unfair deal that farmers got from them. Anyway, I presented my work to Shri Jain and answered the questions that were asked but pitched in favour of Prof. Dandekar's crop insurance scheme instead of weather-based insurance. The 2016 Budget [GOI, 2016] became a game changer so far as crop insurance is concerned; the National Agricultural Insurance Scheme (NAIS) was renamed the Pradhan Mantri Fasal Bima Yojana (PFBY) and an unprecedented allocation of Rs. 5,500 crores was made to it in which farmers were given an option to increase the sum assured upto the value of farm output.[2013] Over the years this budgetary allocation has risen to Rs. 16,000 crores. It would be downright presumptuous to attribute this to my visit to the PMO. Opinions from numerous eminent individuals and institutions must have been sought and several official reports must have been consulted before the decision was arrived at. I only fancy that, if at all I had played a role howsoever marginally, it was my homage to Prof. Dandekar.

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POLITICAL ECONOMY: THE COMPLEX MEANING/ WEAVE OF HUMAN LIFE

Vidyut Bhagwat

It gives me immense pleasure to write about Professor V.M. Dandekar who, a brilliant person that he was, and who as Founder Director of the Indian School of Political Economy (ISPE), Pune gave a new meaning to the idea of "Political Economy" as a holistic concept encompassing the interaction of economy, polity and society. I was very fortunate to meet him at the ISPE in 1979 when I was already a Marathi Literature and Linguistics qualified person with a keen interest in women's issues which come under the broad discipline of Sociology. Hence my qualifications, the experience and my field of interest had hardly anything to do with the discipline of Economics. At that time, but the Ford Foundation had given him funding for leadership training of rural women and it was in that context that he chose me to be a part of a select team from diverse fields to take undertake the project. Thus, my relationship with him started that way and grew into a wonderful working one for nearly ten years. I must confess here that I am always grateful that he gave a meaningful shape to the way I approached my work and as a result, the direction that my career took since then. Both my husband and I shared a bond with him which we cherish greatly. Now for some details.*

I joined the ISPE at a stage in my life when I had given up my permanent job (during the Emergency years in the mid-seventies) after which time I had been doing mainly project oriented work in problems related to teaching and preparing material on primary education for tribal and rural children. At that time, I had become known for confronting the project authorities I had worked with over the approach and for highlighting the differences between Thakar and Mahadev Koli communities. In fact, I remember the day when I first met Professor Dandekar, he joked about my fighting spirit while, at the same time, he also said that he very much appreciated people who posed challenging fundamental questions which, to me, meant that he had welcomed me into his team.

At the ISPE, I met Sonia Gill who became my colleague and my longtime friend. She had approached Professor Dandekar directly and though she was a leftist politically committed activist, he

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* Dr.(Mrs.) Vidyut Bhagvat was the Director of the Department of Women's Studies in Pune University for many years. This tribute to Professor V.M. Dandekar was transcribed from her recorded message as told to Dr. (Mrs.) Sheetal Mahakali, a colleague and friend. (E-mail: vidyutbhagwat@gmail.com)

did not hesitate to bring her into the team. There was also Sudhir Sonalkar who had a drinking habit but Professor Dandekar gave him work without prejudice and he helped out many such people not in the mainstream, not steady persons, though bright, like Nayana Kulkarni, Dhananjay Paranjape and others, by giving them work and respect.

On my part, I was a bit intimidated by Professor Dandekar's personality initially. He was then already a famous statistician, agriculture economist and economist with eminent and landmark work like Poverty in India to his credit. Moreover, so many well-known personalities especially from politics like Sushil Kumar Shinde (later the Chief Minister of Maharashtra) and very senior and well- established academicians and persons from many different fields would be often visiting him at the ISPE.

As I started my work at the ISPE, I joined the GIPE library. Prof. Dandekar held that library work was very much a part of one's continuing study and research work, it was also important to have a hand on feel of the society and its issues which was (has always been) my subject of study. He emphasised that even theory should be viewed on the basis of a core understanding of one's subject from the point of view of our experience. I realised eventually that through our work on a number of issues together, he had built up that approach in me too.

Prof. Dandekar had received a grant from the Ford Foundation of Rs. 3 lakhs for a rural women's leadership training project in which he engaged Sarita Padki, Mangesh Padki, Vidyadhar Pundalik (all of whom were established authors of Marathi literature with a humanist outlook and very well-known too), and myself, as members of the training team. At the outset, he made it very clear to everyone that each one of us should be in office on time and carry out work in a very disciplined way by way of adhering to ISPE working hours. In this context especially in the matter of being a disciplined researcher, I have to mention about another researcher at the ISPE, Ms. Freny Wadia, who was on the research staff working with Professor Dandekar. To all of us in our team, it was really amazing to observe how she worked earnestly all through the day and would not waste any time for even a tea break outside the prescribed tea hour! Earlier, as part of the Indian Economic Service, she had previously been in the Agriculture Ministry and had known Professor Dandekar through his work in agriculture. She was a single unmarried lady living on her own, and he extended support to her in every possible way.

Prof. Dandekar's observation about Indian women was that they were totally enmeshed in their domestic lives because they were almost all the time working in their kitchens. This was especially so in communities like the CKPs (Chandraseniya Kayastha Prabhus) and the Saraswats due to their unique, distinctive cuisines, which they had to develop and maintain their culinary skills which, according to him, was an occupation in itself and which engrossed them totally almost all the time. And he was very keen to draw women out of the sphere of the kitchen. In this context, he mentioned to us that he had taken up the project not out of pity or compassion but with the idea of trying to enable them to see their world from 'their' perspective and also obtaining an understanding of it.

The women of Jejuri who were surveyed in the project were caste dancers and it became known from talks with them that they were unhappy to leave their caste-based occupation. Professor Dandekar was of the firm view that the people from the lower castes should not give up their caste -based occupations. Thus, it appeared that he had his own way of understanding caste. Some communities like the Mahars (a traditional soldier caste not of production or art skills) were part of the Dalit issue but other castes should retain their caste-based occupation and skills. The Jejuri women were reluctant to give up dancing as part of their upliftment as a caste. Dandekar asked forthrightly who is uplifting whom? And if upper caste women were to dance, were they bringing themselves down to a lower caste? He firmly believed that there was no need to give up inherited skills especially in arts like pottery, piggery, idol making and the like. Without any hesitation, he took this stand which was very much against the tide of the then thinking of people who were working in the field of caste and tribes. In that sense, he was anti - reformist because he felt that it was a way of deskilling and deindustrialising lower caste communities. I felt that this was how ISPE took shape in those years when I was working there with the term Political Economy being interpreted in a sense to include sociological and human perspectives, especially with respect to activities connected with the project on rural women. We had people like Sudhir Sonalkar, Rajive Sane, who got away from working in an elitist context and, chose to work with simple people in search of doing meaningful and socially constructive work.

One activity of the project was to invite women to talk about themselves and their concept and understanding of their lives from a feminine/feminist perspective. We had given an advertisement in a popular newspaper in English, the Times of India, inviting common women from different occupations including vegetable vendors, fisher folks and from the Panchayat system to express themselves on the theme 'Me Bai Ahe Mhanoon' meaning 'Because I am Woman'. It was giving women, from different walks of life, a chance to express how they understand their own lives and what they thought of issues such as discriminating between daughters and sons and working at home and outside and about duties arising out of motherhood. There was an excellent response from women. Nearly 3000 essays were received from all corners of the State of Maharashtra from common women. The project team was virtually overwhelmed by this deluge of expressive writing. The essays were simple in style, but at the core, were full of the detailed depiction of their daily turmoil in heavy domestic work. There was no attempt at defining it as their 'exploitation'. In short, their everyday life was eloquently described, without any ideological labeling.

To the pleasant surprise of the team, Prof Dandekar read out a full play he had written about the alienation of fatherhood and father-and-son relationship as the core of his text. On the subject of women and motherhood, Professor Dandekar observed that really parenting and not just motherhood was the thing society should focus on. Motherhood leaves out emphasis on the role of the father. Though a woman physically gives birth, parenting is entirely a joint affair. The several narrations that followed were deeply moving and brought tears to the audience.

I worked at the ISPE for nearly ten years during which period we published many books including books on Jain women and their families and on younger and ordinary women's understanding of their own existence.

Till then, I was not aware of so many things as a feminist. My mind was full of Simone de Beauvoir, Betty Friedan, Juliet Mitchell and others whom I had read with feelings of interest and intense excitement. Professor Dandekar told me that he did not have much of a belief in western feminism but also said that something good had come out of it. I might mention here that at that point I had registered for my Ph.D. degree (of the then Poona University and now the Savitribhai Phule Pune University) under two guides, one being Professor Dandekar as a Political Economist and the Professor Y.B. Damle from the discipline of Sociology.

When I wrote and presented the draft of my first chapter to him, he rejected it outright after his initial reading. But after some time when he had gone through Simone de Bouvoir's works, he relented and we agreed on her framework of the analysis of man as the subject and woman as the other. In brief, Simone de Beauvoir's analytical framework distinguishes between being biologically a female and the social and historical conditioning which makes the gender stereotype in a society and makes man the primary subject and woman, quintessentially, the other. Women are the second sex because they are defined in relation to men. But the stereo type is not something that is natural or inherent in human biology. The idea of love should be independent and free of gender. Women must choose to elevate themselves to take responsibility for oneself and the world to choose their freedom and she believed in 'gendered' education.

It was, thus, a mix of Philosophy, Sociology, Psychology and Economics that came into feminist thinking [Bhagwat, 2012]. When I started out aspiring to be an academic in the field of my passion, which was women's' studies from a feminist perspective and began reading basic feminist texts and literature, I must confess that, at first, I felt a bit handicapped due to my background of Marathi literature. But this feeling slowly disappeared after working with Professor Dandekar who contributed greatly to moulding me into a confident person in this area. The direction, insights that I imbibed from a person of his brilliance is something I cannot forget while I often thought how I could have reached where I got to without his inspiring guidance. From him, I got to understand Maharashtra's Social History and realities at the grass roots level which was mostly due the project work that we undertook and the encouragement that I received from Professor Dandekar who had a robust common sense leading towards a brilliant understanding of rural Maharashtra in all its dimensions. This rootedness which he shared with me gave me insights to carry on my further work even after I left ISPE. In the early part of his career, coming from the field of statistical science in which he had mastery, he directed rural surveys especially in Maharashtra and through that medium, he had all-round insights from the rural society which included political, social and economic dimensions. All this helped me to imbibe these characteristics to some extent when I worked with him. He taught me to read the Census publications especially those aspects relating to mortality rates and fertility rates so that I could bring these dimensions into my research work. Though my original fields of study were in the area of Marathi Literature, Linguistics, Education and Sociology, I found to my surprise that incorporating these new inputs into our work and discussions made our work more interdisciplinary in nature which, by nature, makes research more realistic.

This type of work, however, did not become a permanent feature of work done at the ISPE. When the project was over and books were published, the different members of our team went their ways. This way, he also encouraged us to move on in life.

At the personal level, he would often visit my home and join my husband Ravi and myself for a simple Maharashtrian meal and a touch of high- class whisky. During the course of our conversations, he would talk about his life and remember fondly about his sons who were already settled in the USA while quoting a Maharashtrian poet B.B. Borkar, known for his vocabulary having musical quality, alliteration and use of perfect and sensitive words, on old age "Divas jari che ale jari hai", which, in short, meant that he was happy being old.

He also tried his hand at writing play, which was on issue of father - son relationship. ‘Shyamchi Aie’ was a Marathi text written by P. K. Atre in which that motherhood was glorified and mother’s-son relationship was lionized. But V.M. Dandekar wrote a play underling the father -son relationship. Some inspiring words I remember from him are "start living your dreams" and "nothing is permanent, everything is anitya"! I must confess that I could pass through many turbulences of my life when I used to remember him and his wise sayings such as these.

From the strength, encouragement and guidance, I received from Professor Dandekar, I was able to build up my career with Pune University where I developed the content of Women’s Studies as a discipline. I feel emotional and full of very fond remembrances of him on the occasion of his birth centenary. He was truly a father figure in our lives and we remember him fondly and often.

I thank the Indian Journal of Political Economy for giving me the opportunity to express my thoughts and feelings about a person who made a difference in my life.

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V.M. DANDEKAR
BIO-DATA

Born July 6, 1920. B.A. (Economics, Politics, Mathematics), Nagpur University, 1942, with Gold Medal.

M.A. (Statistics), Calcutta University, 1944, with Gold Medal.

Faculty Member, Gokhale Institute of Politics & Economics, Pune, 1945 - onwards.

Director, Gokhale Institute of Politics & Economics, 1966-68, 1970-80.

Professor Emeritus, Gokhale Institute of Politics & Economics, 1980- onwards.

Founder Director, Indian School of Political Economy, Pune, 1970-85, and then its President.

Professor Emeritus, University of Poona, 1986- onwards.

President, Annual Conference, Indian Society of Agricultural Economics, 1967.

President, Annual Conference, Indian Economic Association, 1973.

President, Indian Econometric Society, 1980-82.

National Fellow, Indian Council of Social Science Research, 1981-83.

President, Indian Society of Agricultural Economics, 1985-1994.

Swami Pranavananda Saraswati Award for 1985, University Grants Commission, 1986.

President, Annual Conference, Indian Society of Labour Economics, 1987.

Served on several committees of the Government of India.

Participated in several international seminars and meetings.

Has several papers on Economics and allied subjects. His book ’Poverty in India’ (written jointly with N. Rath) published in 1971 was received as a path-breaking study in that field.

Died July 30, 1995.

V.M. DANDEKAR

CURRICULUM VITAE

I. ACADEMIC POSITIONS

Born July 6, 1920.
B.A. (Economics, Politics, Mathematics), Nagpur University, 1942.
M.A. (Statistics), Calcutta University, 1944.
Faculty Member, Gokhale Institute of Politics & Economics, Pune, 1945 - todate.
Director, Gokhale Institute of Politics & Economics, 1966-68, 1970-80.
Professor Emeritus, Gokhale Institute of Politics & Economics, 1980- todate.
Founder Director, Indian School of Political Economy, Pune, 1970-85. Presently its President.
Professor Emeritus, University of Poona, 1986- todate.
President, Annual Conference, Indian Society of Agricultural Economics, 1967.
President, Annual Conference, Indian Economic Association, 1973.
President, Indian Econometric Society, 1980-82.
National Fellow, Indian Council of Social Science Research, 1981-83.
President, Indian Society of Agricultural Economics, 1985-1994.
Swami Pranavananda Saraswati Award for 1985, University Grants Commission, 1986.
President, Annual Conference, Indian Society of Labour Economics, 1987.

Died July 30, 1995.

II. MEMBERSHIP OF COMMITTEES, ETC.

International

1 Expert on Land Reforms in Iraq, Cuba, Venezuela, Columbia and Mexico, Food and Agricultural Organization, Rome, 1959-60.
2. Consultant, World Food Programme, to Prepare a Report on ’Demand for Food and Conditions Governing Food Aid during Development’, 1964-65.
3. Member, Advisory Council, Asian. Statistical Institute, Tokyo, 1970-73.

4. Member, Executive Committee of the Asian Association of Development Research and Training Institutes, Bangkok, 1973-77.
5. Member, Advisory Committee on Rural Development, International Labour Organization, Geneva, 1974.

Government of India

1. Member, Committee on Land Reforms, Planning Commission, 1960-66.
2. Member, Agricultural Labour Enquiry Advisory Committee, Ministry of Labour, 1961-62.
3. Member, Panel of Economists, Ministry of Agriculture, 1965-66.
4. Chairman, Study Team on Fair Price Shops, Ministry of Agriculture, 1965-66.
5. Member, Central Advisory Committee on Agricultural Labour, Ministry of Labour and Employment, 1965-66.
6. Chairman, Advisory Committee on Collection of Data on National Income, Central Statistical Organization, 1968-85.
7. Member, Visiting Committee, Indian School of International Studies, Ministry of Education, 1968.
8. Chairman, Committee on Automation, Ministry of Labour, 1969.
9. Member, Panel of Economists, Planning Commission, 1970.
10. Chairman, National Sample Survey Organization, Ministry of Planning, 1970-80.
11. Member, Committee on Taxation of Agricultural Wealth and Income, Ministry of Finance, 1972.
12. Member, Committee to Review Implementation of Land Reform Laws, Ministry of Agriculture and Irrigation, 1978.
13. Member, Committee to Review the Working of Life Insurance Corporation of India, Ministry of Finance, 1979.
14. Chairman, Committee on Tax Measures for Promotion of Employment, Ministry of Finance, 1979.
15. Chairman, Advisory Committee on National Accounts, Central Statistical Organization, 1986-
16. Member, Advisory Group on Poverty and Anti-poverty Strategies, Ministry of Finance, 1987.

Government of Maharashtra

1. On deputation with the Government of Maharashtra as Director of Planning in connection with the newly established Zilla Parishads (District Councils), Rural Development Department, 1963-64.
2. Member, Panel of Administrative Reorganization Committee on Land Records, Land Acquisition and Land Reforms, 1966-67.
3. Member, Panel of Administrative Reorganization Committee on Working of Zilla Parishads (District Councils), 1966-67.
4. Member, Study Group on Octroi, 1966-67.
5. Member, State Irrigation Board, 1968-79.
6. Chairman, Committee to Review Procedures for Determination of Annewari (Annual Crop Yields Estimation), 1971.
7. Chairman, Committee on Credit to Small Farmers, 1973.
8. Member, State Planning Council, 1976.
9. Member, Committee on the Introduction of Eight-Monthly Supply of Water on Irrigation Projects, 1978-79.
10. Member, Advisory Council on Employment Guarantee Scheme, 1979.
11. Chairman, Committee on State Level Caderisation of Secretaries of Primary Credit Societies, 1979.
12. Chairman, Fact Finding Committee on Regional Imbalances in Maharashtra, 1983.

Other Agencies

1. Member, Poona Metropolitan Regional Planning Board, 1967-68.
2. Member, Local Board, State Bank of India, 1967-68.
3. Member, Standing Committee for Agricultural Education, Indian Council for Agricultural Research, 1968.
4. Member, Board of Governors, Indian School of International Studies, Delhi, 1968.
5. Member, Board of Directors, Central Bank of India, 1970.
6. Member, Board of Directors, Food Corporation of India, Delhi, 1971.
7. Chairman, Pimpri-Chinchwad New Town (Twin City of Poona) Development Authority, Urban Development Department, 1973-79.
8. Chairman, Poona Divisional Productivity Council, 1975-77.

9. Chairman, Second Review Committee, Indian Council of Social Science Research, New Delhi, 1977.
10. Chairman, Committee on Overdues, District Central Co-operative Bank, Sangli (Maharashtra), 1977.
11. Chairman, Committee to conduct Achievement Audit of the National Academy of Agricultural Research, 1982.
12. Chairman, Committee to Review Working of Centre for Development Studies, Trivandrum, Indian Council of Social Science Research, 1985-86.
13. Chairman, Committee to Review Working of Institute of Development Studies, Madras, Indian Council of Social Science Research, 1985-86.

III. PARTICIPATION IN INTERNATIONAL CONFERENCES, SEMINARS, ETC.

1. FAO Development Centre on Land Policy in East and Central Africa, Fort Portal; Uganda, October 1960.
2. International Seminar on Fundamental Problems of Agrarian Structure and Reforms in Developing Countries, German Institute for the Developing Countries, Berlin, May 1962.
3. Seventh FAO Regional Conference for Asia and the Far East, Manila, 1964.
4. Economic Experts' Conference of the Socialist International, Bergneustadt, Federal Republic of Germany, October 1964.
5. Conference on Subsistence and Peasant Economics, East-West Centre, Honolulu, USA., February-March 1965.
6. Conference on Economic Problems of Agriculture in Industrial Societies and Repercussions in Developing Countries, International Economic Association, Rome, September 1965.
7. Meeting of the Directors of Economic and Social Development Research and Training Institutes Organized by OECD, Paris, at the Centre for Advanced Training and Research in Agricultural Economics, Portici (Naples), Italy, September 1965.
8. Founding Conference of the New Institute of Development Studies, Sussex, U.K., September 1965.
9. Conference on Education, Employment and Rural Development, University College, Nairobi, September-October 1965.

10. International Seminar on Brain Drain Sponsored by the U.S. Advisory Commission on International Education and Cultural Affairs held at Lausanne, Switzerland, August 1967.
11. Meeting of the Advisory Council, Asian Statistical Institute, Tokyo, August 1970.
12. Meeting of the Advisory Council, Asian Statistical Institute, Tokyo, February 1971.
13. Meeting of the Advisory Board of the UNDP Global Project on the High Yielding Varieties Programme held at U.N. Research Institute for Social Development, Geneva, March 1971.
14. Seminar on Small Farmer Development Strategies at the Ohio State University Organised by the Agricultural Department Council, U.S.A., September 13-15, 1971.
15. Seminar on Unemployment Problem in Developing Nations Organised by the Rockefeller Foundation at Villa Serbelloniin Bellagio, Italy, 19-23 October 1971.
16. Second Regional Meeting of Directors of Asian Research and Training Institutes, Sponsored by OECD, Paris, at Bangkok, October 1971.
17. Meeting of Directors of Research Institutes working on Employment Problems of Developing Countries, International Labour Organization, Geneva, December 1971.
18. Seminar on Effects of Agricultural Innovation in Asia on Population Trends, Sponsored by the Ramon Magsaysay Award Foundation, Manila, in Co-operative with the Population Council, New York, 6-9 February 1972.
19. Second Panel Meeting on Rural Development, World Bank, Washington, January 1973.
20 Meeting of the Advisory Council; Asian Statistical Institute, Tokyo, February 1973.
21. First General Meeting of Asian Association of Development Research and Training Institutes, Bangkok, July-August 1973.
22. Indo-Hungarian Colloquium in Economic Science, Budapest, October 1973.
23. Second General Meeting of Asian Association of Development Research and Training Institutes, Bangkok, November 1973.

24. Meeting of the Executive Committee of Asian Association of Development Research and Training Institutes, Canberra, August 1974.
25. Meeting of the Advisory Committee on Rural Development, International Labour Organization, Geneva, September-October 1974.
26. Meeting of the 1975 Dag Hammarskjold Project, Uppsala (Sweden), January 1975.
27. Meeting of the Board of Management of the Association of Development Research and Training Institutes of Asia and the Pacific, Bangkok, April 1975.
28. Bi-annual General Meeting of the Association of Development Research and Training Institutes of Asia and the Pacific, Canberra, August 1975.
29. International Seminar on Population, Food and Agricultural Development, Organized by the International Association of Agricultural Economists at Rome, December 1975.
30. Meeting of the Board of Management of the Association of Development Research and Training Institutes of Asia and the Pacific, Bangkok, March 1976.
31. Thirtieth International Congress of Human Sciences in Asia and North Africa, Mexico City, August 1976.
32. Meeting of the Regional Association of the European Association of Development Research and Training Institutes, Vienna, held at the Institute of Developing Studies, Sussex, U.K., September 1976.
33. Meeting of the Advisory Committee of Experts, World Conference in Agrarian Reform and Rural Development, Food and Agricultural Organization, Rome, June 1977.
34. Third Biennial Conference of the Association of Development Research and Training Institutes of Asia and the Pacific, held at Goa, India, September 1977.
35. International Statistical Conference, held in New Delhi, December 1977.
36. Planning Workshop of a Group of Experts for an International Survey Research Centre for Developing Countries, convened by the International Statistical Institute, Voorburg, Netherlands, held at London, June 1978.
37. Seminar on Inter-dependence and Development, OECD, Paris, December 1978.

38. Meeting of the High Level Advisory Committee of Experts of the World Conference on Agrarian Reform and Rural Development, Food and Agricultural Organization, Rome, January 1979.
39. Indo-Hungarian Colloquium in Economic Science held at Lonavla, India, February-March 1979.
40. Fourth Indo-Hungarian Round Table of Economists, Budapest, as Leader of Indian Delegation, October 1981.
41. Conference on Development Perspectives 1980s organized by Asian and Pacific Development Centre, Kuala Lumpur, December 1981.
42. South Asia Workshop held at Colombo under the auspices of Asia Productivity Organization, Tokyo, July 26-27, 1985.
43. Conference on Indian Economy - its Successes and Failures. Centre for Asian Development Studies, Boston University, Boston; October 4-7, 1986.
44. Annual Conference of- Association for Evolutionary Economics, New Orleans, December 28-30, 1986.
45. Conference on India after Forty Years of Independence, 'York University, North York, Ontario, Canada, September 16-23, 1987.

IV. PUBLISHED WORK

1951

1. Non-Market Productive Activity and Its Measurement, *Bulletin of the International Statistical Institute*, Vol. 33, Part 3, 1951.
2. Anthropometric Measurements of Maharashtra (Jointly with Mrs. Irawati Karve), *Deccan College, Pune, Monograph Series,* No. 8, 1951.

1952

3. Measurement of National Income and Construction of Social Accounts for an Industrially Backward Economy, Part 1 and Part 2, *Accounting Research*, October 1951 and January 1952, respectively.

1953

4. On the National Sample Survey Estimates of Consumption of Foodgrains in India, *The Indian Economic Journal*, October 1953.

5. Report on the Poona Schedules of the National Sample Survey, 1953, *Gokhale Institute of Politics and Economics*, Publication No. 26.
6. Survey of Fertility and Mortality in Poona District, 1953 (jointly with Mrs. Kumudini Dandekar), *Gokhale Institute of Politics and Economics*, Publication No. 27.

1954

7. Second Report on the Pune Schedules of the National Sample Survey 1950=51, *Gokhale Institute of Politics and Economics,* Publication No. 29.

1955

8. Certain Modified Forms of Binomial and Poisson Distributions, *Sankhya*, July 1955.
9. Primary Education in Satara District- Report of two Investigations, (Jointly with Prof. D.R. Gadgil), *Gokhale Institute of Politics and Economics,* Publication No. 32.

1956

10. A Survey of Rural Housing in a Deccan Village, *Deccan Bulletin*, 1955-56.
11. Rationale of Regional Variation, Published in the *Seminar Series* No. 1955-56 of *The Indian Society of Agricultural Economics*, 1956, Bombay.
12. Use of Food Surpluses for Economic Development, 1956, *Gokhale Institute of Politics and Economics,* Publication No. 33.
13. Statistics in the Social Welfare Field, published in *Social Welfare in India,* by the Ministry of Information and Broadcasting, Government of India, New Delhi.
14. Economic Policy & Theory, *Indian Economic Journal*, Vol. IV No. 2, 1956.

1957

15. Rationale of the Ambar Charkha, *The Economic Weekly*, July 6, 1957.
16. National Food Reserve, An Instrument of Agricultural Policy, *Indian Journal of Agricultural Economics*, 1956-57.
17. Working of the Bombay Tenancy Act, 1948 Report of Investigation, *Gokhale Institute of Politics and Economics*, Publication No. 35.

1958

18. Stabilization of Foodgrain Prices, *The Economic Weekly,* January 1958.
19. Small Savings: Case for Prize Bonds, *The Economic Weekly,* July 26, 1958.

1959

20. Non-Farm Wage Receipts of Farms Population, *Artha Vijnana*, March 1959.
21. All-India Rural Credit Survey, *District Monograph, West Khandesh*, Reserve Bank of India, Bombay, 1959.
22. All-India Rural Credit Survey, *District Monograph, Osmanabad*, Reserve Bank of India, Bombay, 1959.

1960

23. Population Growth and Economic Development in Low-Income Countries - A Review, *Artha Vijnana*, March 1960.
24. Size and Composition of Rural Families (with Vasant Pethe), *Artha Vijnana*, September 1960.
25. *Evaluation of Change and Reform in African Land Tenure* - Paper read at Development Centre on Land Policy for East and Central Africa, Fort Portal (Uganda); October 1960.
26. *A Statistical Analysis of the Failures at the Pre-Degree Examination of the Poona University,* 1960 (Jointly with Dr. Kothurkar), University of Poona, 1960.

1961

27. Quantitative Thinking Among Students of Economics in India, published in *Changing India*, Edited by V.M. Dandekar & N.V. Sovani, Asia Publishing House, Bombay, 1961.

1962

28. Economic Theory and Agrarian Reform, *Oxford Economic Papers*, February 1962.
29. Utilization of Rural Manpower, *The Economic Weekly*, February 1962.
30. Employment and Unemployment of Adult Rural Population, *Artha Vijnana*, March 1962.
31. *Fundamental Problems of Agrarian Structure and Reform in South and South-East Asia* - A Paper read before the International Conference on Fundamental Problems of Agrarian Structure and Reform in Developing Countries, Organized by Deutsche Stiftung Fur Entwickhengslander, Berlin-Tegel, May 1962.
32. A Review of the Land Reform Studies sponsored by the Research Programmes Committee of the Planning Commission, *Artha Vijnana*, December 1962.

1963

33. *The Role of Land Tenure in the Agricultural Development in Japan*, Working Paper prepared for the Meeting of the Expert Group on Agricultural Development in Japan, January-February 1963.

1964

34. Regional Variations in Agricultural Development and Productivity, *Indian Journal of Agricultural Economics*, January-March 1964.
35. Problem of Numbers in Cattle Development, *The Economic Weekly*, February 1964.
36. From Agrarian Reorganization to Land Reform, *Artha Vijnana*, March 1964.

37. Prices, Production and Marketed Surplus of Foodgrains, *Indian Journal of Agricultural Economics,* July-December 1964.
38. *Motivating Farmers to Increase Agricultural Production,* paper prepared for the Regional Conference of Food & Agricultural Organization at Manila in 1964.

1965

39. *Role of Food Aid under Conditions of Rapid Population Growth,* paper for the United Nations World Population Conference at Belgrade, September 1965.
40. Minimum Support Prices for Foodgrains: Guidelines for a Policy and a Programme, *Artha Vijnana,* December 1965.
41. The Demand for Food, and Conditions Governing Food Aid during Development, *World Food Programme Studies* No. 1, Rome 1965.
42. *Rpercussions of Food Surpluses in Industrialized Countries on Economic Growth* in Developing Countries, paper for the Meeting of International Economic Association, Rome, 1965.

1966

43. *Problem of Numbers in Dairy Development,* Third Dairy Industry Conference, Bombay, January 20, 1966.
44. Gopal Krishna Gokhale - An Economist, AIR, April 30, 1966.
45. Economic and Fiscal Thinking of Gopal Krishna Gokhale, *Yojana,* May 15, 1966.
46. Devaluation, Submission to the Forces of the Market, article included in a brochure entitled *Devaluation of the Rupee and its Implications,* published by the Institute of Constitutional and Parliamentary Studies, New Delhi, July 1966.
47. Transforming Traditional Agriculture: A Conceptual Foray and A Missing Variable, in *Subsistence Agriculture and Economic Development,* Ed. Clifton R. Wharton, Jr., Aldine Publishing Co., Chicago. Also in Economic & Political Weekly, August 20, 1966.
48. Reply to Commentaries (Schultz's concept of Traditional Agriculture), *Economic & Political Weekly,* December 24, 1966.

49. The Role of Small-Scale Industry in Economic Development - Indian Experience, paper for the Conference on *Education, Employment and Rural Development* in Kericho, Kenya, September 25 - October 10, 1966, also included in Education, Employment and Rural Development edited by James R. Sheffield, University College, Nairobi, 1967.
50. Transforming Traditional Agriculture - Further Comments, *Economic & Political Weekly,* December 24, 1966.
51. Cattle Problem, *Blitz Weekly,* Bombay, December 24 & 31, 1966.

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52. *Economic Prospects,* paper prepared for Regional Development Seminar, Kanpur, January-February 1967.
53. Planning in Indian Agriculture - Presidential Address, 26th Annual Conference of the Indian Society of Agricultural Economics, Ludhiana, also in *Indian Journal of Agricultural Economics,* January-March 1967.
54. The Plan Frame and the Motive Power, *Economic & Political Weekly,* February 1967.
55. Food for Peace, *Shankar's Weekly,* May 1967.
56. *Sharing the Gains of Productivity,* Inaugural Address at the 8th General Meeting of Poona Divisional Productivity Council, July 26th; 1967.
57. Dhananjaya Ramchandra Gadgil, *Economic Times,* August 10th, 1967.
58. *Food Aid for Growth and Development,* paper prepared-for International Association of Agricultural Economists, Sydney, 21-31 August 1967.
59. Brain Drain - the Indian Situation, article in *The Brain-Drain;* Edited by Walter Adams, published by Macmillan, New York, also in *Economic & Political Weekly,* August 1967.
60. Graduation Address, College of Millitary Engineering, Pune, delivered on July 14th, 1967, also in *Mainstream,* Delhi, September 7th, 1967.
61. The Economic Outlook, *Financial Express,* September 18, 1967.
62. Food and Freedom, *Economic Series No. 6,* Karnataka University, Dharwar, 1967.
63. Defence and Development, *Mainstream,* 1967.
64. The Right of Ownership, *Commerce,* Annual Number 1967.
65. Democratic Decentralisation - An Alternative to President's Rule, *Financial Express,* December 5, 1967.

1968

66. Statistical Reforms of the System of Evaluating Results of Mass- conducted Examinations, *Indian Educational Review*, January 1968.
67. *Democratic Decentralization,* Harold Laski Institute, Ahmedabad, February 1968.
68. *Labour Movement,* Inaugural Speech delivered at the conference held by Maharashtra Pradesh Bharatiya Mazdoor Sangh, on March 2, 1968.
69. Agricultural Price Policy: A Critique of Dantwala, *Economic & Political Weekly,* March 16, 1968.
70. Maharashtra At Crossroads, *Financial Express,* May 5, 1968.
71. Problems of Integration, *Financial Express,* May 15, 1968.
72. 'Foreword' to the Seminar Volume on *Problems of Small Farmers,* Seminar Series No. VII, June 1968, Indian Society of Agricultural Economics, Bombay.
73. Requisites of Production Oriented Bank Finance, *Financial Express,* October 26, 1968.
74. Review of *Asian Drama: An Inquiry into the Poverty of Nations* by Gunnar Myrdal, *The Annals of the American Academy of Political and Social Science,* November 1968.
75. 'Foreword' to *Human Rights in a Multi-National Society* by Prof. D.R. Gadgil, Gokhale Institute Publication No. 53.
76. 'Foreword' to *Cooperation: Principles and Substance* by Prof. D.G. Karve, Gokhale Institute Publication No. 54.
77. 'Foreword' to *Two Studies in Education* by Prof. A.R. Kamat, Gokhale Institute Publication No. 55.
78. 'Foreword' to the *Progress of Education in Rural Maharashtra (Post-Independence Period)* by Prof. A. R. Kamat, Gokhale Institute Publication No. 56.

1969

79. *The Role of Broadcasting in the Present Communal Situation* - Paper submitted to the Seminar convened by the Ministry of Information& Broadcasting, New Delhi, 1969

80. *National Integration: Statement,* Scholars' Conference, Indian Institute of Asian Studies, Bombay, January 6; 1969.
81. Challenges to Secularism: A Comment, *New Quest,* January 3, 196g.
82. *Preface to the Monograph on Population Problems of India,* Symposium held at Indian Institute of Technology, January 6, 1969.
83. Golwalkar Sets the Chick Back, *New Quest,* February 21, 1969.
84. Cow Dung Models, *Economic & Political Weekly,* August 2, 1969.
85. Accelerating Self-Reliance, *AIR*, August 21, 1969.
86. India's Scared Cattle and Cultural Ecology, *Economic & Political Weekly,* September 27, 1969.
87. Over-population and the Asian Drama, *CERES,* Vol. 2, No. 6, F.A.O. Publication, November-December 1969.

1970

88. Government by Gambling, *Economic & Political Weekly,* January 1970.
89. Foreword to *Essays* by R.A. Gopalswamy, February. 2, 1970.
90. Sacred Cattle and More Sacred Production Functions, *Economic & Political Weekly,* March 21, 1970.
91. Agricultural Growth with Social Justice in Overpopulated Countries, *Economic & Political Weekly,* Special Number, July 1970.

1971

92. *Unemployment: Problem and Solution,* Walchand Memorial Lecture Series, published by Maharashtra Chamber of Commerce, Bombay.
93. D.R. Gadgil, *Economic & Political Weekly,* May 8, 1971.
94. Issues Before the Pay Commission, *Economic & Political Weekly,* July 1971.
95. *Employment Potential in Automobile Industry,* Keynote Address delivered at the All-India Automobile and Ancillary Industries. Association, New Delhi, on November 2nd, 1971.
96. *Poverty in India* (Jointly with Prof. N. Rath), Indian School of Political Economy, Lonavla, 1971.

1972

97. *Planning for the Poor,* Lectures delivered at the SIES College, Bombay, January 14-15, 1972, published in a booklet-form by the college.
98. Rural Population Densities in Relation to Agricultural Resource, (Jointly with S.N. Gadam), *Census Centenary Volume,* March 1972.
99. Next Steps on the Socialist Path, *Economic & Political Weekly,* Special Number, August 1972.
100. Land Ceiling, *Weekly Round Table,* New Delhi, June 9, 1972.
101. *Problems of Technological Unemployment,* lecture delivered in Ogale Memorial Lectures under the auspices of Maratha Chamber of Commerce and Industry, Poona, on October 16, 1972.
102. *Unemployment and Imbalance in the Economy,* 7th A.D. Shroff Memorial Lecture, Forum of Free Enterprises, Bombay, October 27, 1972.
103. A Survey of Famine Conditions in the affected Regions of Maharashtra and Mysore (Jointly with V.P. Pethe), *Gokhale Institute of Politics and Economics, Mimeograph Series No. 13,* 1972.

1973

104. Flow Irrigation Advantageous Under Indian Conditions, *Economic Times,* April 23, 1973.
105. Economic Inequalities, *AIR,* August 16, 1973.
106. Conservation - Impact of Cattle on Land, *AIR,* August 16, 1973.
107. Independence - A Reminder of New Challenges, *AIR,* August 16, 1973.
108. Have we Turned the Corner?, *Illustrated Weekly,* Bombay, October 1973.
109. *Poverty and Unemployment in India: Is a Direct Attack Possible?,* paper read at the Indo-Hungarian Colloquium, Budapest, October 1973.
110. Foreword to the *Effects of Agricultural Innovations in Asia on Population Trends,* Report published by Ramon Magsaysay Award Foundation, Manila, December 1973.
111. *Democratic-Socialist Path to Economic Development,* Presidential Address to the 56th All-India Economic Conference, Tiruchirapalli, December 1973, Published in The Indian Economic Journal, Vol. XXI, No. 3, Jan-March 1974.

112. Introduction to the *Economy of Maharashtra* (C.V. Joag Felicitation Volume), Samaj Prabodhan Sanstha, Pune, 1973.

1974

113. *Partners in Production,* First G.D. Somani Memorial Lecture delivered in Bombay, January 8th, 1974.
114 Indian Economy and the Budget, *Illustrated Weekly,* Bombay, March 1974.
115. Right to Work (with Nilakantha Rath), *Sankhya,* June-December 1974.

1975

116. *Data Base of Indian Economy,* Volume II, Proceedings of a Seminar organized by the Indian Econometric Society, 9-11 June 1973, Poona, Statistical Publishing Society, Calcutta, 1975, (Edited jointly with P. Venkataramaiah).
117. *Inter-Relationship between Policy Growth and Food and Agricultural Development - Indian Case,* paper presented to the Seminar on Population and Food and Agricultural Development organised by the International Association of Agricultural Economics, Rome, December 1-5, 1975.

1976

118. Crop Insurance in India, *Economic & Political Weekly,* June 6, 1976.
119. *Achieving Balance between Population and Food - Indian Case,* paper prepared to the XVI International Conference of Agricultural Economics, Nairobi, 26 July - 4 August, 1976.
120. Look into Your Wallet before you Spend, The Economic Outlook, *Illustrated Weekly,* Bombay, October 17, 1976.

1977

121. The Democratic Process, *AIR*, June 6, 1977.
122. *Convocation Address* at the International Institute for Population Studies, Bombay, June 9, 1977.

123. State of the Economy, *Illustrated Weekly*, Bombay, July 17, 1977.
124. *Crop Insurance for Developing Countries*, Agricultural Development Council, New York, September 1977.
125. Statistics for Planning for Social and Economic Development: In Search of Facts, *Science Today,* Special Number, October 1977.
126. *Nature of Class Conflict in the Indian Society,* Bhatkal Memorial Lecture, December 23, 1977.
127. Statistics in National Planning, *Science Today*, December 1977.
128. Economic Aspects of Democratic Process, *Industrial India,* December 12, 1977.

1978

129. *Examination Reform,* Convocation Address at the Nagpur University, January 7, 1978.
130. Nature of Class Conflict in the Indian Society in the Marxian Framework, *Artha Vijnana,* June 1978.
131. *Mutual Requirements as Seen by a Representative of the Third World*, paper prepared for the Seminar organized by OECD, Paris, December 12-13, 1978.
132. *Gandhian Economic System: A Path to Non-Economic Goals,* Zakir Husain Memorial Lecture, 1977, Series No. 3.

1979

133. Below the Poverty Line, *Economic & Political Weekly,* February 1979.
134. *Education, Employment and the Plan,* Convocation Address at University of Poona, March 1979.
135. *Peasant-Worker Alliance: Its Basis in the Indian Economy,* R.C. Datta Lectures on Political Economy, delivered in 1979, published by Orient Longman, New Delhi, 1981.

1980

136. Unequal Exchange - Imperialism of Trade, *Economic & Political Weekly,* January 5, 1980.

137. Bourgeois Politics of the Working Class, *Economic & Political Weekly*, January 12, 1980.
138. Unequal Exchange and Errors, *Economic & Political Weekly,* March 29, 1980.
139. Introduction to Seminar Volume on Data Base and Methodology for the Study of Growth Rates in Agriculture, *Indian Journal of Agricultural Economics,* April-June 1980.

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140. *The Cattle Economy in India,* Indian Secular Society, Poona, January, 1981.
141. *Measurement of Poverty,* Kale Memorial Lecture, delivered at Gokhale Institute of Politics & Economics, Pune. Also in *Economic & Political Weekly,* July 25, 1981.
142. *Industrial Finance in India* (jointly with Prof. B.S.R. Rao), paper prepared for the Fourth Indo-Hungarian Round Table of Economists, Budapest, October 12-15, 1981.
143. *Integration of Women in Development,* a paper prepared for the conference at Kuala Lumpur on Development Perspectives for the 1980s, organized by Asian and Pacific Development Centre of United Nations, December 1981.

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144. *On Measurement of Under-Nutrition,* Gopalan Oration, delivered at the Annual Meeting of the Nutrition Society of India, January 9-10, 1982. Also in *Economic & Political Weekly,* February 6, 1982.
145. *Inaugural speech* at the National Workshop on the Regulation and Management of Agricultural Produce Markets, sponsored by Directorate of Marketing & Inspection, Government of India, Pune, May 1982.

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146. Foreword to *The Mhaisal Untouchables* by Vasant Deshpande, published by Dastane Ramchandra & Co., Pune, May 1983.

147. Economic Growth and Change in India as Seen through National Income Data, a book-review of *India's National Income 1950-1980: An Analysis of Economic Growth and Change* by V.K.R.V. Rao, *Economic & Political Weekly*, June 11, 1983.
148. *Need to Decentralize All Along the Line,* paper prepared for the Seminar on Centre-State Relations held at Bangalore in August 1983.

1984

149. Maharashtra Universities Draft Act, 1984, Inaugural Speech at the State Level Conference, published in *Progress of Education,* Special Issue, October-November 1984.
150. *Regional Imbalance in Economic Development,* Silver Jubilee Lectures on Development Perspectives, Institute of Economic Growth, New Delhi, 1984.

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151. In Tune With the New Setting, *Times of India,* April 14, 1985.
152. Crop Insurance in India - A Review, 1976-77 to 1984-85, *Economic & Political Weekly,* June 1985.
153. Framework for a New Economic Policy, *Seminar,* December 1985.

1986

154. Monetary Policy for Independent Monetary Authority, John Matthai Memorial Lecture, Trichur, January 1986. Also in *Economic & Political Weekly,* January 1986.
155. *A National Policy for Distribution of Irrigation Water in Drought-Prone Area,* paper for the Seminar on Control of Drought, Desertification and Famine; held at New Delhi, May 17-18, 1986.
156. *Agriculture, Employment, & Poverty,* paper read before the Conference on Indian Economy - Its Successes and Failures, Centre for Asian Development Studies, Boston University. Also in *Economic & Political Weekly,* October 1986.

1987

157. Economies as Differentiated Systems, Clarence E. Ayres, Memorial Lecture, Association for Evolutionary Economics, 1986, also in *Journal of Economic Issues,* June 1987.
158. Let the Workers Own and Manage, Presidential Address, Annual Conference, Indian Society of Labour Economics, January 16-18,1987. Also in *Economic & Political Weekly,* February 1987.
159. Unitary Elements in a Federal Constitution, Key Note Address, Panel Discussion on Centre-State Relations, Gandhiji Study Centre, Trivendrum, August 19, 1987. Also in *Economic & Political Weekly,* October 31, 1987.
160. *Indian Economy since Independence*, paper read before the Conference on 'India since Independence', York University, North York, Ontario, Canada, September 17-23, 1987. Also in *Economic and Political Weekly*, January 1988.
161. *Population Factor in India's Economic Development,* Hukerikar Memorial Lecture, Population Research Centre, J.S.S. Institute-of Economic Research, Dharwad, December 24, 1987. (to be published)

1989

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163. Development of Agricultural Administration in India, (jointly with F.K. Wadia), *Journal of Indian School of Political Economy,* January-June 1989.
164. Development of Institutional Finance for Agriculture, ((jointly with F.K. Wadia), *Journal of Indian School of Political Economy,* July-December 1989.

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166. Search for an Employment Oriented Growth Strategy-Discussion Paper, *Economic and Political Weekly,* May 26, 1990.

1991

167. Making right to work fundamental, *Economic and Political Weekly,* 11-12 March 1991.
168. *Reform of Higher Education*, R.S. Dubhashi Memorial Lecture at the University of Pune, Published in *Economic and Political Weekly,* November 19, 1991.

1992

169. The Economy and the Budget, *Economic and Political Weekly,* April 11-18, 1992.
170. 'Forty Years After Independence' in Bimal Jalan (Ed.), *The Indian Economy, Problems and Prospects*, 1992.

1993

171. *Limits of Credit, Not Credit Limits,* C.E. Kamath memorial Endowment Lecture delivered on February 26, 1993 at Mangalore University, Published in *Economic and Political Weekly,* September 25, 1993.
172. A Complacent Budget, *Economic and Political Weekly,* April 10, 1993.

1994

173. Assets and Liabilities of Government of India, Prof. D.T. Lakdawala Memorial Lecture delivered at MS University of Baroda, April 14, 1993, also published in *Economic and Political Weekly,* Jan. 15, 1994.
174. Budget 1994-95: Fiscal aspects and the Real Economy, *Economic and Political Weekly,* April 16-23, 1994.
175. Role of Economic Planning in India in the 1990s and Beyond - Paper prepared for a Seminar in the Planning Commission, *Economic and Political Weekly,* June 11, 1994.

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DOCUMENTATION

The purpose of this section is to make available to the readers official documents such as reports of committees, commissions, working groups, task forces, etc., appointed by various ministries, departments, agencies of central and state governments and international organisations, which are not readily accessible either because they are old, or because of the usual problems of acquiring governmental publications, or because they were printed but not published, or because they were not printed and remained in mimeographed form. We also present in this section, official documents compiled from scattered electronic and/or other sources for ready reference of the readers. It will be difficult and probably not worthwhile to publish the documents entirely. We shall publish only such parts of them as we think will interest our readers. The readers are requested to send their suggestions regarding official documents or parts thereof for inclusion in this section.

We are also keen to publish Papers, Notes or Comments based on the material included in this section. We invite the readers to contribute the same to our journal, which we shall consider for publication in subsequent issues of the journal, after the usual refereeing process.

In the present section, we publish:

1. Prof. V.M. Dandekar's Articles published in Journal of Indian School of Political Economy

2. Second Report on the Poona Schedules of the National Sample Survey (1950-51)

DEVELOPMENT OF AGRICULTURAL ADMINISTRATION IN INDIA

V.M. Dandekar and F.K. Wadia

In the development of agricultural administration in India, the Famine Commissions in 1880 and 1901, and the Royal Commission on Agriculture in 1928 are important landmarks during the British period. Grow More Food Campaign, Community Development Administration, Intensive Agricultural District Programme, High Yielding Varieties Programme, and the recommendations of the Joint Indo-American Teams in 1956 and 1960 created the basic structure of agricultural administration, research, education, and extension. The Report of the National Commission on Agriculture in 1976 strengthened the centralising tendencies already existing in the system. Since then, there has been a growing emphasis on professional management not only in administration and extension but also in research and education. There is need to rethink.

The purpose of this paper is to trace the development of agricultural administration including organisation of research, education, and extension in the past hundred years. Only official sources are used. Regarding research, education, and extension, the review refers to organisation only and not the content.

Beginnings

Until 1870, the affairs of agriculture in India were looked after in the Home Department of the Government of India. There was no separate department of agriculture. In 1869 Lord Mayo, then Viceroy of India, wrote to the Governor of Madras: "I really think that the time is come when we ought to start something like an agriculture department in the Government of India with branches in the Presidencies ... Agriculture, on which everyone here depends, is almost entirely neglected by the Government" [Hunter, 1875, Pp. 319-329]. Accordingly, in 1871, a department called the Department of Revenue, Agriculture and Commerce was carved out of the Home Department. Naturally, it was conceived as a department of an imperial government and among its primary functions, the first to mention were "those discharged by the Departments of Agriculture in America, in France and, generally speaking in all European countries having, like India, a centralised form of Government" [Hunter, 1875, Pp. 333-334]. As its name suggests, it was assigned numerous miscellaneous duties and functions. Burdened with the varied

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subjects transferred to it, and with no definite programme of its own, the new Department lost sight of Agricultural Reform. Finally, in 1878, the Department was reabsorbed in the Home Department.

But, in 1880, the Famine Commission strongly recommended establishing Agricultural Departments under a Director in each Province with the following duties: (a) Agricultural Enquiry - the collection of agricultural information to keep the authorities informed of the approach of famine; (b) Agricultural Improvement - with a view to preventing famine in future; and (c) Famine Relief. In pursuance, an Imperial Department of Agriculture was formed, in 1881, again by separating the Revenue and Agricultural Department from the Home Department. The several Provincial Governments agreed and measures were commenced in 1882 for the formation of Provincial Departments of Agriculture.

The Famine Commission had given high priority to the collection of agricultural information, and the Government of India went still further. The absence of reliable knowledge of existing conditions had been borne in upon the Government of India by the break down of their machinery when faced by recurrent periods of famine and scarcity and the Government insisted that thorough adaptation of the existing revenue systems to agricultural facts and conditions should take precedence over agricultural experiments. Nevertheless, the Secretary of State was should take precedence over agricultural experiments. Nevertheless, the Secretary of State was asked repeatedly in 1882, 1884, and 1886, to sanction the appointment of an Agricultural Chemist to act with the Department, 'Chemistry being that science which bears, perhaps, most directly on Agriculture'. In November 1889, Dr. Voelcker, Consulting Chemist to the Royal Agricultural Society of England, was appointed to enquire into and advise upon (i) improvement of Indian Agriculture by scientific means, and (ii) improvement of Indian Agriculture generally. Thus, the importance of science and technology for the development of Indian agriculture was recognised as early as a hundred years ago.

Dr. Voelcker submitted his report in 1893. He did not think that Indian Agriculture was, as a whole, primitive and backward. He said that in many parts, there was little or nothing that could be improved, while, where agriculture was manifestly inferior, it was because of inherently bad systems of cultivation, but want of facilities which existed in the better districts. Hence, improvement was possible if the differences of agricultural conditions and Practice existing in different parts of the country were reduced by (i) transfer of better indigenous methods from one part to another, and (ii) reducing differences which result from physical causes affecting agriculture. In his report, Dr. Voelcker, *inter alia,* recommended appointment of an Agricultural Chemist as the Adviser to Government, and selection of Agricultural Director from those who had distinguished themselves in natural sciences and acquired agricultural knowledge.

In the Resolution dated 22nd June 1893, the Government of India, while generally accepting Dr. Voelcker's Report and appointing an Agricultural Chemist, pointed out that before any real improvement could be effected in agriculture, the institution of organised enquiry into existing methods was absolutely necessary. A Conference was called in October 1893 of representatives of Local Governments and Administrations to consider measures needed for adopting Dr. Voelcker's Report. The Conference recommended, inter alia, that the claims of men trained in scientific agriculture to appointments in the Revenue and cognate Departments should be as freely recognised as those of men trained in Law, Arts and Engineering.

In 1895, the Government of India called upon the provincial governments to mange for local conferences to discuss how far the recommendations made by Dr. Voelcker could be adopted in the circumstances of the province. Based on the results of these Conferences, as also the 1893 Conference and Dr. Voelcker's report, the Government of India issued a number of Resolutions in March 1897, laying down policies on several related matters.

With regard to primary education, it was recognised that a distinction would have to be made between instruction designed for general educational purposes and a course of study leading to an diploma or degree. Regarding general education, it was suggested that 'elementary science' should not appear in the curriculum as a separate subject, but that it should be taught illustrated by object lessons, care being taken that no important elementary science was omitted; this would sufficiently serve the interests of agriculture as the surrounding objects used for illustration were themselves connected with agriculture. Further, instruction in village maps and land records should be included in the curriculum of education for all classes. Uniformity was not possible in text books; the difference of language, of climate and physical condition, of the natural objects used for oral lessons, or as illustrations of school books, of local customs and practices, all were insurmountable obstacles to uniformity. But, these variations need not stand in the way of a general uniformity of plan and system.

On the higher agricultural education, the Resolution laid down that (i) agricultural degrees, diplomas or certificates should be placed on the same footing as corresponding literary or science degrees, etc., in qualifying for admission to Government appointments and more particularly those connected with land-revenue administration; and (ii) the diploma should eventually be compulsory in the case of certain appointments, e.g., agricultural teachers at training schools, assistants to the director of agriculture, etc.

The first Agricultural Chemist was appointed in 1892 for a period of five years. On the expiry of that period, the Government of India recommended that the post of agricultural chemist should be abolished and that an Inspector General of Agriculture should be appointed. However, the post of Agricultural Chemist was not abolished, but an Inspector General of Agriculture in India was appointed in 1901. His position, in respect both of the Government of India and of local governments, was purely advisory.

The Report of Famine Commission, 1901, was an important landmark in the development of agricultural administration in India. The commission said: "We are, indeed, far from thinking that the Indian cultivator is ignorant of agriculture; in the mere practice of cultivation, Agricultural Departments have probably much to learn from the cultivator. But in the utilization of his hereditary skill, in economy of the means of production, and in the practice of organized self-help, the Indian cultivator is generally ignorant and backward. It is in correcting these deficiencies that Agricultural Departments will find their richest fields of labour.--- The steady application to agricultural problems of expert research is the crying necessity of the time" [Famine Commission, 1901, Pp. 112-113]. The recommendations of the Commission, speedily translated into action by Lord Curzon's Government led to the great expansion of the Imperial and Provincial departments of agriculture which dates from 1905.

In June 1903, the Government of India submitted to the Secretary of State a scheme for the establishment of an agricultural research institute, an experimental farm and an agricultural college at Pusa in the Darbhanga district of Bihar, where a large Government estate had been placed at their disposal by the Government of West Bengal for the purpose. This was the beginning of organised agricultural research in India. Accordingly, a research station with fully equipped laboratories, an experimental farm, an agricultural college, subsequently called the Imperial Agricultural College, and a cattle farm were established on the Pusa estate. The scattered scientists of the Imperial Agricultural Department, the Agricultural Chemist, the Mycologist and the Entomologist were brought together at Pusa and to them in 1904 were added a Director of the Institute and, in 1905, an agri-horticulturist (subsequently designated Imperial Agriculturist), a biological botanist (subsequently designated Imperial Economic Botanist), an agricultural bacteriologist and a Supernumerary agriculturist. In April 1912, the post of Inspector General of Agriculture in India was abolished and the new appointment of Agricultural Adviser to the Government of India was combined with that of the Director of the Pusa Research Institute. Incidentally, long ago in 1889, the Government had established a laboratory, named the Imperial Veterinary Research Institute, at Muktesar, for conducting research on animal epidemics which were, at that time, very widespread in the country. Later a sub-station was established at Izatnagar.

It was expected that the Pusa Institute would serve as a model for similar institutions under provincial governments. On its farm would be initiated lines of enquiry, the soundness of which would be examined before they were recommended for trial under local conditions on the provincial experimental farms. Varieties of crops would be tested and the seed of improved varieties would be grown and distributed. The results reported from provincial farms would be tested and continuity would be secured for promising experiments begun in a province but, for some reason, discontinued. Finally, the farm was to be utilised for the practical training of students at the imperial agricultural College and provide experimental field area for the scientific experts. The college itself would sene a model for agricultural colleges in other provinces and to provide for a more complete efficient agricultural education than was then possible in any of the existing institutions.

Lord Curzon's Government fully realised that a central institution under the direct control of the Government of India could only be the apex of their scheme and that such an institution would be valueless unless there were, at the same time, a real development of agriculture in the provinces. In 1905, therefore, the Government of India announced their intention to promote the establishment of agricultural colleges with a course of three years' duration in all the provinces and the provision of an expert staff for these institutions for purposes of research as well as for instruction. The link between the colleges and the districts was to be provided by an experimental farm to be established in each large tract in which the agricultural conditions were approximately homogeneous and by numerous small demonstration farms which were to carry the work on the experimental farms a stage further. The expert officers in charge of the farms were to be in close touch with the cultivators and advise them in regard to the introduction of improved methods of agriculture. The scheme also provided for the appointment of a full-time Director of Agriculture in all the major provinces. In 1906, the various expert appointments in the Imperial and Provincial agricultural departments which were contemplated as well as those already in existence were constituted into an Imperial service known as the Indian Agricultural Service.

In 1919, following the passage of the Government of India Act, the administration of all the departments which were closely connected with rural welfare, agriculture, veterinary, cooperation, local self-government, medical, public health and sanitation, and education, except irrigation and forests elsewhere than in Bombay and Burma, were transferred to the provinces. Following the report of the Royal Commission on Superior Civil Services in India in 1924, it was decided that, for the purpose of local governments, no further recruitment should be made to the all-India services as such, operating in transferred fields, and that the personnel required for these branches of administration should, in future, be recruited by local governments. Recruitment to the Indian Agricultural Service accordingly ceased. Local Governments were empowered to build up provincial agricultural services.

In 1917, the Government appointed the Indian Cotton Committee to examine the possibility of extending the long staple cotton in India. As a result of its report, the Indian Central Cotton Committee was constituted in 1921 and was given definite legal status by the provisions of the Indian Cotton Cess Act of 1923. This was the first Committee set up for the improvement of a particular crop.

Returning to the Pusa Institute, the expectation that it would prove a focus of agricultural activity for all India was not fulfilled. The limitations imposed by conditions of soil ~d climate appear to have been overlooked. Besides, the rapid development of the research work done by the provincial departments had rendered it less and less necessary for them to look to it for assistance in work which could be carried out far more satisfactorily in their own local conditions. As regards its educational activities, owing to the establishment of fully equipped agricultural colleges in the provinces, Pusa never served the original purpose. Until the end of 1923, its teaching activities were confined to short courses in special subjects.

The Pusa Institute was practically destroyed by the great Bihar earthquake in January 1934. This raised a question regarding its location. Pusa had always suffered because of its remoteness from the main stream of national life in India. It was becoming more and more evident every year that the largest and the most complete library in the country and the best-equipped laboratories could not be used to the fullest advantage when they were isolated from other centres of scientific work. It was therefore decided to shift the Institute to its present location in Delhi.

Royal Commission on Agriculture, 1928

In April 1926, the Royal Commission on Agriculture (RCA), with Lord Linlithgow as Chairman, was appointed to examine and report on the conditions of agricultural and rural economy in British India, and to make recommendations for the improvement of agriculture and to promote the welfare and prosperity of the rural population. The Commission submitted its report in April 1928.

The Commission emphasised the importance of agricultural research in agricultural development. The basis of all agricultural progress, it said, was experiment. "However efficient the organisation which is built up for demonstration and propaganda, unless that organisation is based on the solid foundations provided by research, it is merely a house built on sand. In spite of the marked progress ... made in many directions during the last quarter century, ... The claims of research ha(d) received a half-hearted recognition and the importance of its efficient organisation and conduct" was "still little understood." The time had come "when the indispensable part, which a central organisation ha(d) to play in the fields of agricultural research, and of rural development generally" had to "be fully recognised" [Royal Commission on Agriculture, 1928, P. 4].

The Commission proposed that an Imperial Council of Agricultural Research (ICAR) should be constituted to promote, guide, and coordinate agricultural research throughout India. The Commission recommended that, with the establishment of the ICAR, the post of the Agricultural Adviser to the Government of India should be abolished. Instead, a whole-time Director should be appointed for the Pusa Agricultural Research Institute, who would also be in charge of the sub-stations, which were under the control of the Agricultural Adviser to the Government of India. A central committee for jute should be set up on the lines of the Indian Central Cotton Committee. For the other crops, the trade concerned should provide the funds required for any research on the product in which it was interested beyond that which was undertaken in the normal course by the agricultural departments. The RCA made a number of recommendations regarding primary education, higher agricultural education, and agricultural improvement.

According to the RCA, the only hope of convincing the cultivating classes of the advantages of agricultural improvement lay in visual demonstration. Demonstration on the cultivator's own fields was preferable to that on a government demonstration farm. The establishment of a farm in each district for the general purposes of the Agricultural Department, including demonstration, was desirable but the staff and funds available could be much more usefully employed in demonstration on the cultivator's own fields. Experimental farms were unsuitable for demonstration work. Departmental seed farms could however be used with advantage for demonstration work. Short courses in particular subjects should form an important part of the work of demonstration on seed farms. Both systems of demonstration on the cultivator's own fields, one under which a plot was hired and cultivation done by the departmental staff and the other under which the land was cultivated by the cultivator himself under departmental supervision, should be adopted and the results compared. Peripatetic demonstrations on the use of improved implements should be given.

Imperial Council of Agricultural Research, June 1928

In 1928, a conference of Provincial Ministers of Agriculture and other provincial representatives considered the recommendations made by the RCA. An organisation called the Imperial Council of Agricultural Research was evolved. The Council held its inaugural meeting on June 21, and 22, 1929 and passed its draft Memorandum of Association and Rules and Regulations. In 1930, the Secretariat of the Council was, for reasons of administrative convenience, declared a Department of the Government of India with the Honourable Member in charge of Agriculture in the Governor-General's Council as the Member in-charge.

The Government of India gave effect to several other recommendations of the RCA. Separate Directors were appointed for the Imperial Institute of Agricultural Research, Pusa, and the Imperial Institute of Veterinary Research, Muktesar, which were previously under the administrative control of the Agricultural Adviser to the Government of India. The advisory functions previously performed by the Agricultural Adviser were transferred to the whole-time members of the Imperial Council of Agricultural Research. The post of Agricultural Adviser to the Government of India was abolished in October 1929. The designations of the Agricultural Expert and Animal Husbandry Expert were changed to Agricultural Commissioner and the Animal Husbandry Commissioner with the Government of India.

This was the beginning of the eminently imperial style in which agricultural administration including organisation of research, education, and extension has since then developed. The RCA had stipulated that the ICAR would not exercise any administrative control over the Imperial or provincial research institutions. But that proved of little avail. Subsequent events, particularly the World War and the consequent acute food shortage, strengthened the centralising tendencies inherent in an imperial administration.

With the entry of Japan in the War in December 1941, it became clear that India would be temporarily cut off from Burma and supplies of rice from there would not be available. Hence, in 1942, a Department of Food was established in the Ministry of Agriculture. Its functions were to procure foodgrains within the country, to import them from abroad, to maintain central reserves, and to control and regulate prices. In April 1942, the Government called a conference of representatives of Provinces and the Indian States. It made recommendations for increasing food production within the country. These formed the basis of what came to be known as the Grow More Food Campaign (GMF). It was about the first all-India agricultural development programme initiated and directed from the Centre and it set a pattern for agricultural development programmes as centrally directed 'campaigns'.

In February 1944, the Advisory Board of the Imperial Council of Agricultural Research submitted to the Government a Memorandum on the development of agriculture and animal husbandry in India. It pointed out that, in view of the wide diversities in India of climates and soils, and of cultivation practices under irrigated and rainfed conditions, much of the detailed planning must fall on the shoulders of the Provinces and States which alone were in a position to frame their plans to suit their own conditions and with which their ultimate execution would rest. Large expansion was needed on the research side, both at the Centre and in the Provinces and States. The Centre must take the lead in many matters if progress was to be rapid. On the research side, it must accept the main responsibility for fundamental research. It must advise on policy and must arrange adequate coordination of effort to avoid overlapping and achieve maximum result in the shortest time. The Centre could not remain entirely aloof from the extension of the results of research into farm practice throughout the country, even though the practical extension of those results must primarily be the function of Provincial or State Departments of Agriculture. It must also be in a position to assist financially when funds were needed for encouraging and promoting research, extension or other action in the provinces.

The Memorandum recommended the creation of a Federal Department of Agriculture charged with the duties of fostering agriculture and animal husbandry in their broadest sense and in all their phases. It would formulate and establish general policies, co-ordinate all scientific investigations in the Federal Institutions, not only within themselves but with work in the provinces, and administer federal grants for research and extension by Provincial and State institutions. Many of the activities of the Federal Department would be exercised through the Imperial Council of Agricultural Research which would become a Federal Agricultural Council dealing with both research and development.

The existing Imperial Agricultural Research Institute and the Imperial Veterinary Research Institute would be expanded into Federal Institutes for Agriculture and Animal Husbandry, respectively. Side by side would be set up a chain of Commodity Research Stations and Substations, each dealing with problems connected with its own commodity or group of commodities. Each would be administered and controlled by an Indian Central Commodity Committee for the particular commodity.

The proposals in the Memorandum were generally endorsed by the Policy Committee on Agriculture, Forestry and Fisheries. The recommendations of this Committee were also generally accepted by Provincial Governments, and in June 1945, were approved by the Standing Committee of the Legislature. The Government of India announced in 1945 an all-India policy for agriculture and food, as well as the objectives to be achieved, the measures to be adopted and the respective roles of the Centre and the

Provinces for their attainment. In September 1945, the Government of India set up a separate Department of Agriculture in the Ministry of Agriculture. A panel of special officers were appointed as Advisers in different disciplines of agricultural production, vegetables, fruit, livestock, dairying, fish, seeds, fertilisers, plant protection, forestry, irrigation, minor works, and training.

Among the various functions to be undertaken by the Central Department of Agriculture were (a) assessment of the requirements of the country as a whole in respect of the different types of agricultural produce and of nutrition; (b) payment of grants to Provinces for schemes of agricultural development; (c) to provide facilities for training, to conduct research, and to make available expert advice to Provinces and to set up special organisations to serve particular all-India purposes. The Department was to deal with the Survey of India, the Botanical Survey of India, and the Zoological Survey of India; agriculture and horticulture (including agricultural education, statistics and research); animal husbandry including veterinary training and research; protection of wild birds and animals; forests and fisheries; cooperative societies; general questions relating to land; procedure in rent and revenue courts; recovery of claims and acquisition of land; etc.

Such was the agricultural administration which the British administration created and left behind at the time India became independent. There was the Ministry of Agriculture with a Department of Food and a Department of Agriculture with very wide ranging scope and functions. It was admitted, in so many words, that the Provinces and States alone were in a position to make plans for agricultural development in the light of their resources. But, at the same time, it was emphasised that it was necessary for the Central Government to take the initiative in coordinating the proposals and bringing them into a framework of an overall plan for agriculture. This has remained the refrain justifying the central control of agricultural development in the country.

In the field of agricultural research and education, the British administration had created three imperial institutions: the Imperial Council of Agricultural Research, the Imperial Institute of Agricultural Research, and the Imperial Institute of Veterinary Research. Of these, the Imperial Institute of Veterinary Research did not achieve the imperial status which the Imperial Institute of Agricultural Research did because development of animal husbandry remained relatively unattended as it continues to-date. The Imperial Council of Agricultural Research was, of course, conceived imperial. The concept has remained very much the same even after Independence, except for the nominal change from Imperial to Indian, so that the ICAR and the IARI have remained very much the same ICAR and IARI.

On March 12, 1947, at a Special General Meeting, the Imperial Council of Agricultural Research, in anticipation of the impending Independence, decided to change its name to the Indian Council of Agricultural Research (ICAR). Under the aegis of the ICAR, the work of research and extension in the sphere of agriculture was shared by three different agencies. First, there was the Indian Council of Agricultural Research proper which by grants for research, initiated and sponsored projects all over the country; second, there were the Central Commodity Committees with their own research stations and performing similar functions in respect of their respective commodities; third, there were the all-India Central Research Institutes which carried on research within their respective fields through their respective divisions. The unwieldy and unplanned expansion had made both coordination and direction difficult. The funds available for research in the country were divided into earmarked compartments, each for a specific purpose.

On his appointment as Minister for Food and Agriculture, and as ex-officio Chairman of the Indian Council of Agricultural Research, Shri K.M. Munshi felt that with the achievement of Independence, the Council required reorientation in its outlook from colonial to national. To justify its existence, the ICAR should not merely content itself with the coordination of effort in the field of research by the various State Governments, etc.; its object should be to help achieve the fulfillment of the Intensive Cultivation Programme of the Government of India; its activities should extend to the field of agriculture, animal husbandry, forestry, fisheries and allied subjects in all the three different stages, viz., (a) fundamental research, (b) technological investigation, and (c) introduction into practice, in other words, extension.

In order to achieve these objectives, it was decided that the administrative set up of the Council should be so altered that a coordinated programme of research could be evolved in each sphere for the whole country and its execution secured by different research institutions, either controlled directly or indirectly by the Centre, a State Government, a University or a private body. In order that the Council might function effectively, its Governing Body, which on account of the number of States in the Union had become very bulky, should have a Standing Committee with a Board of Research and a Board of Extension to advise in their respective spheres.

Accordingly, in November 1950, the constitution of the ICAR was revised. The Governing Body of the Council was given assistance of a Board of Research and a Board of Extension to evolve integrated programmes of work in these two major spheres, and of a Standing Committee which could meet at regular intervals and enforce the policy laid down. The Council and its various administrative bodies were reinforced by additional representation for forestry and fisheries and for specialised organisations such as the Indian Central Commodity Committees, the Central Board of Forestry, etc.

Between 1947 and 1950, the Government was naturally concerned about intensifying the Grow More Food Campaign. Towards the close of 1948 the Government of India, invited Lord Boyd Orr to review the working of the campaign and to make suggestions. In the light of his suggestions, the Government of India appointed a Commissioner of Food Production and the States also appointed corresponding officers. Subcommittees of the Cabinet were set up in all the States with the State Food Commissioners as Secretaries for taking quick decisions and implementing policies without delay. The objective of the new policy was to attain self-sufficiency by March 1952. Shortly after, acute shortage of cotton and jute was felt owing to devaluation and the difficulty of getting these raw materials from Pakistan. A policy of simultaneously increasing production of cotton and jute along with foodgrains was announced in June 1950.

Before Independence and until January 31, 1951, the Department of Agriculture and the Department of Food functioned as separate Ministries. The activities of the Ministry of Agriculture and its attached and subordinate offices fell mainly into six broad categories, viz., production, controlled distribution, research and extension development, agrarian reform, and international relations. With effect from February 1, 1951, the two Ministries were merged to form the Ministry of Food and Agriculture. It had two main Wings, viz., (a) Food Wing and (b) Agriculture Wing. From April 1, 1954, the Food Wing was reconstituted as an attached office, called the office of the Director General of Food.

At the end of 1950-51, the working of the Grow More Food (GMF) campaign was reviewed in the Ministry of Food and Agriculture. At the same time, India's First Five Year Plan was being formulated in which food production was a major issue. In consequence, important changes were made in the GMF campaign. Concentration of the GMF in suitable areas was discussed with the States in connection with the programmes for 1951-52. The advantages of intensive blocks were supposed to be: (i) administration of measures including supply and services could be more efficient; (ii) the assessment of results could be made with greater precision; and (iii) additional production was more likely to be reflected in increased procurement. The attitude of the States, generally speaking, was that over-insistence on this principle was likely to lead to discontent in the areas which would be left out. However, by 1952-53, the State Governments were gradually realising the need for concentrating efforts in intensive areas.

Grow More Food Enquiry Committee, June 1952

In February 1952, the Government of India set up a Committee of Enquiry to examine the working of the GMF. The Committee pointed out that, though the GMF operations covered only a small proportion of the total cultivated area, only two to four per cent, never before were sustained efforts made on such a scale as in these years. Their effect had been to spread knowledge of the possibilities of improved agriculture among a wider section of the agricultural population than in any previous period.

The GMF Committee recommended that (i) the GMF campaign should be enlarged so as to cover a wider plan for development of village life in all its aspects - finding a solution to the human problem; (ii) the administrative machinery should be reorganised; and (iii) non-official leadership available should be mobilised. It recommended the setting up of an ‘extension’ service for undertaking intensive rural work which would reach every farmer and assist in the coordinated development of rural life as a whole. For such an organisation, the taluk or tehsil, the lowest administrative unit above a village, should be taken as a development block. It should be in charge of a Development Officer or Extension Officer who would be the revenue divisional officer, relieved of his other duties by a special assistant appointed for the purpose. The Extension Officer should be assisted by four technical officers, for agriculture, animal husbandry, cooperation, and engineering; the last one to deal with minor irrigation works, drainage, anti-erosion measures, etc. At the village level, there should be one worker for 5 to 10 villages who would be the joint agent for all development activities and who would convey to the farmer the lessons of research, and to the experts the difficulties of the farmer, and arrange the supplies and services needed by the farmer, including first aid in animal and plant diseases. The village level worker should be in daily contact with the farmers and their problems, advising them on improvements, arranging supplies of seeds, fertilisers, etc., and assisting them in every way.

The Extension Organisation was expected to secure local cooperation, to stimulate local initiative, to promote community activities, and to see that the vast unutilised energy in villages was harnessed to work for the benefit of apart or whole of the community. Training of the staff was the first requisite before the extension organisation could be spread all over the country and necessary arrangements should be made for getting the required number of trained personnel particularly at the level of village workers. The Committee recommended the organisation of cooperative societies and; through them, granting of loans, short, medium and long term, and a special programme of minor irrigation works, land improvement, and supply schemes. The Committee recommended that initially the GMF should be concentrated as far as possible in the 55 Community Projects set up under the Indo-U.S. Technical Assistance Programme. Preference should also be given to intensive blocks in which GMF was being carried on in the States. The Committee further recommended that the role of the Government of India should be confined to: (a) formulation of overall policies and coordination of programmes of village development including targets of additional production; (b) giving of financial and technical assistance; (c) making arrangements for supplies and movement of essential materials; and (d) assessment of results of the programme. A special Division in the Central Ministry of Food and Agriculture should deal with these functions with regard to the entire programme. One wonders what the Committee thought they were confining the role of the Government of India to. Formulation of policies, coordination of programmes, financial and technical assistance, assessment of results, these are precisely the reins of power which the Government of India has been reigning with.

First Five Year Plan (1951-56)

The First Five Year Plan (1951-56) made its proposals, *inter alia*, on agricultural research, education, and training. It was suggested that, in order that the ICAR may discharge its statutory duty of coordinating all agricultural research in the country, all research programmes, whether of the Commodity Committees, State Governments, or Central Institutes, should be sent to this body for scrutiny and approval. Thus, in the name of coordination, all direction and control of agricultural research in the country was vested in the hands of the ICAR. All this was done with the full knowledge that the ICAR was not discharging its responsibility satisfactorily. In fact, it was noted that, the scrutiny of all research programmes received was done by the Scientific Committees of the ICAR which met only for a few days just before the annual meeting of the Advisory Board and the Governing Body and this did not permit a detailed and proper examination of the research proposals. But the Planning Commission would not see that this was inevitable with so much authority concentrated in a single agency. Instead, the Planning Commission was content with suggesting that the Scientific Committees of the ICAR should meet more frequently, at least twice a year, once for examining the schemes and once for assessing their progress and that these meetings should allow sufficient time for a proper examination and assessment; and finally, that the Research Board of the ICAR must consist of top-ranking agricultural scientists in the country! [Planning Commission, 1953, Pp. 271 -272].

The decision under the First Five Year Plan to organise community projects and to spread the national extension service to the entire country required large training facilities. During the First Five Year Plan, 44 extension training centres were established and these turned out 14,426 village level workers, In all, 54 basic agricultural schools and wings were set up. In 1955-56, seven group level workers' training centres were established and these turned out 1,843 supervisory personnel. Also, in the same year, 19 home science centres were set up and programmes for the training of gram sevikas were expanded.

There were 22 agricultural colleges turning out annually about 1,000 graduates, a large proportion for extension, research, and educational work. During the Plan period, training facilities at the existing agricultural colleges in Assam, Hyderabad, Madras and Madhya Bharat were expanded; three new agricultural colleges were established-one each in Rajasthan, Bihar and Travancore-Cochin; and the Punjab Agricultural College at Ludhiana was rehabilitated. As a result, the annual admissions of agricultural graduates increased from 1,292 in 1953-54 to 1,894 in 1955-56. Further, the Government developed inter-institutional arrangements with five United States Universities on a regional basis. Under this arrangement, the country was divided into five regions and each contracting institution in the USA was to cooperate with the States in the region allotted to them by providing technical assistance.

First Joint Indo-American Team on Agricultural Education, Research and Extension, 1956

In April 1954, a project under the Indo-US Technical cooperation Programme was approved providing assistance to agricultural research, education, and extension organisations in India. Consequently, a Joint Team consisting of five Indian representatives and three American specialists in agricultural research and education was set up to make a comparative study of the organisation, functions, and working of Indian and American institutions engaged in agricultural education and research and to recommend steps for removing critical deficiencies in the present methods and facilities in the field of agricultural research and education. The report of the Team was received in 1955. The Team made several recommendations. They were accepted in principle but only a few of them were implemented by the Central and State Governments.

Second Five Year Plan (1956-61)

In March 1957, the Planning Commission set up a Committee on Agricultural Personnel to assess requirements for trained personnel during the Second and Third Five Year Plans. The Committee submitted its report in March 1958. The Committee estimated that there would be need for 8,900 agricultural graduates between June 1957 and March 1961 and another 27,500 during the Third Plan period resulting in an annual demand for 5,500 agricultural graduates. For this purpose, it was necessary to provide facilities for admissions in the agricultural colleges of 6,000 students annually compared to 2,600 in 1957-58. The Committee suggested that this should be done by expanding, wherever possible, the existing institutions to the desired level without lowering the efficiency of training. Assuming that the admissions in the existing institutions could be increased to 4,500, which was almost doubling, and that the new Agricultural University proposed to be established at Rudrapur (Uttar Pradesh) would take about 200 students per year, there would still be need for 8 new institutions with a total of 1,300 seats. The Committee recommended that the new institutions may be set up in States or Zones where the gap between the output and prospective demand was the greatest and that in selecting the locations for the new agricultural colleges, certain principles enunciated by the Indo-American Team on Agricultural Research and Education, with the object of developing research, education and extension as an integrated programme, should be borne in mind.

The Committee made similar estimates for animal husbandry, dairying, fisheries, forestry, soil conservation, agricultural marketing, cooperation, agricultural statistics, agricultural economics, agricultural engineering, and plant protection. The Committee also commented upon the training of village level workers as very inadequate. It suggested that, while in the interim period, training to village level workers could be for a period of two years, in the long run it was desirable that the village level workers should possess a degree in agriculture, or a level of training roughly equivalent to that of an agricultural graduate.

Agricultural Administration Committee, October 1958

The Conference of State Ministers of Agriculture, held in Srinagar in October 1957, noted that serious delays in the execution of several agricultural production schemes in the States were due to administrative complexities and over-centralisation of powers, both administrative and financial. Consequently, in February 1958, the Government of India set up a Committee to (i) suggest simplification of administrative and financial procedures in order to expedite the implementation of agricultural production schemes; and (ii) suggest a model agricultural organisation in the States, along with suggestions for delegation of suitable powers at various levels in the States, so that agricultural production schemes may be carried out speedily. The Committee submitted its report in October 1958.

The Committee observed: "It is indeed, a sad commentary on administration that the recommendations made nearly thirty years back in the epoch making Report of the Royal Commission on Agriculture in India, received only nominal attention. Many other similar documents, produced subsequently, and the recommendations made therein met a similar fate. The Committee" was "strongly of the opinion that a streamlined agricultural administration" was "an urgent necessity and the food situation of the country" could "be appreciably eased if positive steps" were "taken to achieve this objective. Administrative lapses have universally contributed towards shortfalls in implementation of Agricultural schemes and thereby directly caused shortfalls in production. The picture" was "indeed bleak enough to justify that drastic measures be taken, not merely to retrieve the situation but even more, to make up for time already lost. A change of heart, and of purpose and of leadership in the field of agriculture" was "of national importance. A bold attitude to see 'new wine in new bottles' ha(d) to be developed towards reforming Agricultural Administration in India" [Department of Agriculture, 1958, p. 4].

The Committee recommended the establishment of a major regional research station in each agro-climatic region of the country. It was estimated that at least 50 such stations would be required. A team of scientists from various disciplines could be located at these regional stations. The Committee also recommended the creation of an All-India Agricultural Service which should be on par with the IAS in scales of pay and prospects. Other recommendations included the setting up of Committees at the Central and State levels to review periodically the structure, objectives and policies of the Departments of Agriculture, Central Commodity Committees and other Central Institutions; training of officers at different levels and assessment of their work; co-ordination of activities; evaluation and assessment of development work, programme planning; etc. The Third Plan recommended that the States' agricultural administration should be strengthened along these lines.

Second Joint Indo-American Team on Agricultural Education, Research and Extension, July 1960

In September 1959, the Government of India appointed a Second Joint Indo-American Team to evaluate the progress of work pertaining to Agricultural Education, Research, and Extension during the past five years, review the arrangements concluded in 1955 with the five Land-Grant Universities of the USA under the Indo-US Technical Cooperation Programme, and make recommendations with regard to Agricultural Education, Research, and Extension with special reference to the Third Five Year Plan. The Study Team submitted its Report in July 1960.

The Study Team recommended that the arrangements with the five Land-Grant Universities of the USA should continue at least through the Third Five Year Plan and that the post-graduate programmes and the examination system should be developed after the pattern at the Indian Agricultural Research Institute. Assistance to establish an agricultural university should not be granted unless there was adherence to basic principles such as (a) autonomous status, (b) location of Agricultural, Veterinary/Animal Husbandry, Home Science, Technological, and Science Colleges on the same campus, (c) integration of teaching by offering courses in any of these colleges to provide a composite course and (d) integration of education, research, and extension. The technical staff of the Indian Council of Agricultural Research should be strengthened and an agricultural education pattern should be developed covering the vocational schools, the multipurpose high schools, agricultural colleges and universities.

On Agricultural Research, the Study Team recommended, inter alia, that all the Central Research Institutes and the Commodity Committees, including the Central Sugarcane Committee, should be brought under the full technical and administrative control of the ICAR. To ensure the States' capability to assume responsibility for research, the Government of India should make available to the ICAR a substantial allotment of funds in the Third Five Year Plan to be expended on the basis of a careful assessment of the needs of each State. While the Study Team recommended so much concentration of technical, administrative, and financial control in the hands of the ICAR, it could not avoid recommending that measures should be adopted to increase the incentives, morale, and scientific integrity of agricultural research scientists. The Study Team would not see that it was the concentration of the direction of research in the hands of a single agency which was undermining the morale, and integrity of agricultural scientists in the country. On Agricultural Extension, the Study Team recommended streamlining of the organisation of agriculture and community development from the Central Government down to the village level and suggested a pattern of organisational set up for the purpose. The Team recommended that Extension Workers including Village Level Workers, Gram Sevikas, and Block Staff personnel should be trained at agricultural and home science colleges.

Ford Foundation Agricultural Production Teams, 1959

Even before the Second Joint Indo-American Study Team had submitted its report, an Agricultural Production Team sponsored by the Ford Foundation at the request of the Ministries of Agriculture and Community Development had made its report in April 1959. Among the measures the Team suggested were: (i) Security of land tenure and consolidation of landholdings; (ii) stabilisation of farm prices through a guaranteed minimum price announced in advance of the planting season, a market within bullock-cart distance that will pay the guaranteed price, and suitable local storage; (iii) A public works programme requiring primarily manual labour, such as contour bunding, land levelling, surface drainage, irrigation wells and tanks; (iv) Selection of certain crops and certain areas for more intensive efforts.

The last mentioned was the most important recommendation of the Agricultural Production Team. It meant that instead of spreading the development efforts more or less uniformly throughout the country, manpower and other resources should be concentrated in selected areas which had optimum conditions for stepping up production. Sufficient fertilizers, improved seeds, pesticides, proper soil and water management practices, all of these while important in themselves, could be fully effective only if adopted in combination with each other.

This recommendation was considered by a high-level Inter-Ministries Committee of the Government of India in June 1959, and was accepted in principle. To give a precise shape to the recommendation, a second Team of agricultural experts, sponsored by the Ford Foundation, visited the country in October 1959, made a rapid survey of a few selected areas in various States and, in consultation with the experts of the Central and State Governments, developed a programme for an intensive and coordinated approach to agricultural production. The essence of the programme was provision of adequate incentives and aids to cultivators to increase production through the intensive application of all resources in the selected districts. It was called the Intensive Agricultural District Programme (IADP) also popularly the Package Programme.

Third Five Year Plan (1961-66)

During the Third Plan period (1961-66), the number of agricultural colleges was proposed to be increased from 53 to 57 and the annual intake from 5,600 to 6,200. The total requirements of agricultural graduates for the Plan period were estimated at about 20,000 and these were expected to be met. During the Second Plan, an agricultural university was established at Pantnagar (Rudrapur) in Uttar Pradesh. More proposals for setting up agricultural universities were under examination. Research organisations in the States were proposed to be strengthened to deal with problems brought out by extension/research workers in their contacts with farmers. For crops like wheat, rice, millets, cotton and oilseeds, it was proposed to develop research facilities on a regional basis in addition to work undertaken in the States. The Plan provided for intensive study of irrigation practices in river valley projects and for working out the water requirements of crops, new crop rotations, and problems connected with the use of fertilizers in irrigated areas. Among the new centres of research to be established were an institute for soil science and pedology, a forage and grass lands research institute, and a virus research institute.

Intensive Agricultural Development Programme

A focal programme in the Third Five Year Plan (1961-66) was the Intensive Agricultural Development Programme (IADP) recommended by the Second Ford Foundation Team (1959) mentioned earlier. It was introduced on a pilot basis in 1960-61 for a five year period in the first instance and was established in two stages; in seven districts beginning nominally in 1960-61, but really in 1961-62, with support from the Ford Foundation and eight districts beginning in 1962-63 following the pattern of the first group. The districts in the first group were Thanjavur, West Godavari, Shahabad, Raipur, Aligarh, Ludhiana and Pali. Those in the second group were Alleppey, Palghat, Mandya, Surat, Sambalpur, Burdwan, Bhandara and Cachar. Later, the programme was also started in six blocks in Jammu and Kashmir. In June 1961, an Expert Committee for the Assessment and Evaluation of the programme was set up by the Ministry of Food and Agriculture. The Committee conducted two types of investigations: one was a series of bench-mark and assessment surveys conducted yearly in each IADP district and the other was special studies on operational and analytical problems arising in the course of implementation of the programme. The committee submitted four reports during 1960-69.

The committee's major conclusion was that the time had come to move from the limited focus on the 15 IADP districts to an Intensive Agricultural Modernisation Programme geared to the potential of the farmers in all districts. The Committee was convinced that to modernize agriculture in India, the power to direct agricultural programme must rest upon a district organisation. Considering the high degree of technical knowledge needed for handling the complex problems of modern agriculture, technical officers, instead of general administrators, should be appointed in charge of the programmes; they could be given training in management and administration. While the directing function must be local, the Centre and the States should concentrate on exercising a guiding and influencing role, setting policies and creating necessary climate for local effort. There was also need to strengthen the link between the agricultural universities and the State Department of Agriculture.

Report of the High Yielding Varieties Programme, Kharif 1966-67, June 1967

The high yielding varieties (HYV) Programme was launched in the country In the Kharif season of 1966-67. In January 1967, a study was undertaken, at the instance of the All-India Rural Credit Review Committee of the Reserve Bank of India in eight selected districts to assess :(i) Response of farmers to the programme and factors having a bearing on such response; (ii) Extent of the resulting demand for credit and inputs and how such demand was met; (iii) Role of institutional agencies, such as the cooperatives and Government, in providing the required services; and (iv) Extent of coordination among different participating agencies. The Study revealed that it was not sufficient to convince the cultivators about the high yields of new varieties which could compensate the additional costs involved; with small holdings, the cultivators' prejudice against the high yielding varieties for home consumption might influence their response to the Programme. There were other problems too such as harvesting and threshing the HYV crop right in the middle of the monsoon, low straw yield of the crop, and marketability of the produce.

Study Team on Agricultural Administration September 1967

The Study Team on Agricultural Administration was constituted by the Administrative Reforms Commission on July 17, 1966. It submitted its report in September 1967. The Study Team diagnosed the malady correctly, namely, the growing centralisation and bureaucratisation of agricultural administration. It pointed that, although the Centre was responsible only for high level policies and coordination, it had developed a vastly proliferated bureaucracy; that this was due to its increasing concern in seeing to the implementation of the plans in the States; and that this was having adverse effect on the States' initiative in drawing up and implementing realistic plans. It said that the Union-State relationship in agricultural development was not conducive for the maximum utilisation of the potential for increasing agricultural production.

The Team recommended that the Department of Agriculture should be reorganised on functional lines, all aspects of research should be transferred to the ICAR and other development functions to the States. The Central Department of Agriculture should be concerned with inter-national obligations, national policies and problems, and inter-State coordination. It gave a break-up staff requirements at the Block, District, and State levels. Then, characteristically, it recommended the setting up of a Ministry of Agricultural Development at the Centre consisting of the divisions of (i) Agricultural Policy, (ii) Agricultural Planning, (iii) Agricultural Finance, (iv) Agricultural Production, (v) Agricultural Marketing, (vi) Agricultural Industries, (vii) Agricultural Intelligence, (viii) International Collaboration, (ix) National Commissions, and (x) Administration. Departments of Agricultural Development on similar lines were recommended for the States. Here, the Departments of Agriculture, Horticulture, Animal Husbandry and Veterinary Services, Fisheries, and Marketing should be integrated. There should be a single line of command from the State level to the village level. Policies in regard to staffing of posts in agricultural administration should be immediately changed so that technical experts could occupy key posts and look forward to their professional advancement and career prospects.

The Administrative Reforms Commission (ARC) examined the recommendations of the Study Team on Agricultural Administration. According to the ARC, the Centre cannot give up its basic responsibilities in matters like formulation of overall national policy and programmes, and mobilising the support of States for their implementation; and that the relations with Slates call for their handling at the highest administrative level. So not much happened.

Fourth Five Year Plan (1969-74)

The Third Plan expired in 1965-66 and was followed by three years of Annual Plans until 1968-69. Severe stresses had developed in the economy during the period 1961-69 due to the hostilities of 1962 and 1965 and a steep fall in agricultural production over two successive years 1965-66 and 1966-67. Besides bad weather, the steep fall in agricultural production during 1965-64 and 1966-67, was due to certain other deficiencies and failures too. There were deficiencies in the distribution of improved seeds, fertilisers, improved implements, pesticides, and other agricultural production requisites, particularly at the village level. Scarcity of cement, certain types of iron and steel and galvanised sheets had hampered the progress of minor irrigation, storage, and other agricultural construction programmes. Lift irrigation programmes were hampered by shortage of power supply mainly due to lack of power transmission lines. Scarcity was also experienced in the supply of heavy tractors, spare parts, bull dozers, power sprayers, drilling rigs, dairy and poultry equipment, cold storage and refrigeration equipment, etc. To a large extent, this was due to shortage of foreign exchange. There were also inadequacies in administrative coordination, price and marketing policies and implementation of land reforms. Attempts were made to rectify some of these deficiencies during the period 1966-67 to 1968-69.

Nevertheless, the period 1961-69 saw the commencement of a new strategy for agricultural development. The first stage of the new strategy was the Intensive Agricultural District Programme. It was started in 1960-61 in three districts and was subsequently extended by stages to another thirteen. While the performance varied, it clearly demonstrated both the value of the "package" approach and the advantages of concentrating effort in specific areas. After the mid-term appraisal of the Third Five Year Plan in 1964-65, a modified version of the same approach was extended to several other parts of the country in the form of the Intensive Agricultural Area Programme. The main concern of the Programme was with specific crops and the extension staff employed was on a reduced scale and it was taken up in 114 districts in the country; it was in operation in 1,084 blocks in 1964-65 and extended to 1,285 blocks in 1965-66. In terms of cultivated area it covered 64.55 lakh hectares in 1964-65. While both the Intensive Agricultural District and Intensive Agricultural Area Programmes were concerned with the promotion of intensive agriculture, they operated within the limitations set by existing crop varieties which had relatively low response to fertilisers. A major change occurred with the introduction of the high yielding varieties. Hybridisation techniques for maize and millets had been initiated in 1960. Hybrid seeds began to be widely adopted by 1963. In wheat, a beginning was made in 1963-64 by trying out the Mexican dwarf varieties on a selected basis. Paddy seeds of exotic varieties such as Taichung Native-I were introduced in 1965. The propagation of various high-yielding varieties over fairly large areas was taken up as a full-fledged programme from Kharif 1966 onwards. Package programmes were also introduced for cotton, jute, oilseeds, and sugarcane.

With the evolution of high-yielding varieties of seeds, a New Strategy for Agricultural Development was announced in 1966-67. Major changes were made in the working of the Indian Council of Agricultural Research; for instance, appointment of an outstanding scientist as the Chief Executive of the Council with the designation of Director-General, and bringing under the reorganised Council all the research institutions under the control of the Departments of Food and Agriculture, including those under the Central Commodity Committees. The basic intention behind these decisions as to make the Council a truly functional, technically competent, and fully autonomous organisation for promoting, guiding, coordinating, and directing agricultural and animal husbandry research and education throughout the country. Subsequently, nine Central Commodity Committees dealing with cotton, oilseeds, lac, coconut, sugarcane, jute, tobacco, arecanut, and spices and cashewnut were abolished; all research work handled by these Committees, including the administrative control of their research stations and institutes, was transferred to the Council; and all the development and marketing programmes and schemes being handled by the Commodity Committees were taken over by the Department of Agriculture.

In the Fourth Five Year Plan (1969-74), it was contemplated that the principal agencies involved in the research programmes would be the central research institutes, agricultural universities and, to a limited extent, research stations run by agricultural departments in some States. From the point of view of organisation of agricultural research, care was to be taken that there was no overlapping of effort or proliferation of institutions. Existing research substations were, as far as possible, to be attached to agricultural universities where these were established. No new central research institutes were to be set up in the jurisdiction of agricultural universities'. Also, in States where agricultural universities had already been set up, agricultural research should be transferred from the Departments of Agriculture to the agricultural universities.

An important feature of agricultural research was to be the all-India coordinated research projects. These called for a multi-disciplinary approach as well as inter-institutional cooperation, research scientists in the Central and State institutes and agricultural universities working as a team with a project coordinator, appointed by the ICAR, acting as a research leader. On the eve of the Fourth Plan, 38 projects had been sanctioned and 32 projects were in operation. In addition, 44 new all-India coordinated research projects were to be taken up.

National Commission on Agriculture, 1976

In August 1970, the Government of India set up a National Commission on Agriculture to enquire into the progress, problems, and potential of Indian agriculture. The Commission submitted a series of interim reports between 1971 and 1976 and the final report in 1976. In the following, we shall briefly note its recommendations on agricultural administration, research, education, and extension as appearing in its final report.

The National Commission was even more imperial than the Imperial Commission on Agriculture. It suggested several changes in the administrative set up both at the Centre and in the States and recommended a direct and single line of control from the field to the State level and coordination through a senior technical officer belonging to one of the agricultural disciplines. It emphasised that the crucial operational level was the district. In each district, there should be a senior officer, to be designated as Chief Agricultural Development Officer (CADO), to coordinate the activities of all agencies working for agricultural development in the district. He would function under the administrative control of the Agricultural Production Commissioner. At the block level also, there should be a counterpart officer, viz., the Block Agricultural Development Officer (BADO) for coordination. Out of the 10 Village Level Workers (VLWs) in the block, 8 should be earmarked exclusively for agricultural extension. The number of VLWs would have to be trebled and that of Agricultural Extension Officers (AEOs) increased suitably to provide an adequate extension infrastructure. Where the Zilla Parishad was effective, the district field organisation may be placed under its control; but the District Collector should not have administrative control over the agricultural officers and should not be concerned with their detailed working.

At the State level, there should be separate secretariat departments at least for crop production, animal husbandry, fisheries and forestry in all major States. The Agricultural Production Commissioner-cum-Principal Secretary, who should be next in rank to Chief Secretary, should be responsible for overall planning, coordination and guidance. A senior Cabinet Minister, who should be Deputy Chief Minister in the State Cabinet, should assume overall responsibility for agricultural development.

At the Centre, there should be nine departments in the Ministry under the charge of Secretaries, viz., agriculture, crop production, animal husbandry, fisheries, forestry, irrigation, rural development, research and education, and food. The Ministry should have a Principal Secretary for coordination who should also be in charge of the Department of Agriculture which would deal with important functions common to the different departments. It recommended the strengthening of several subject-matter divisions in the Ministry and upgrading of the status of technical officers like Animal Husbandry Commissioner, Agricultural Commissioner, etc. The secretariat proper, both at the Centre and in the States, should be small and compact and technical officers should be delegated full responsibility for administration of programmes. Top management posts in the secretariat including those of secretaries and joint secretaries should be held by technical officers. To facilitate expeditious decisions and implementation of programmes, the heads of technical directorates should be given ex-officio secretariat status. The Commission recommended the formation of an All-India Agricultural Service to provide suitable career incentives. Stressing the need for a channel for flow of technical officers from the States to the Centre, it suggested that the Central technical posts should generally be filled by deputation from the States.

The Commission emphasised the need for strengthening the Planning Division of the Centre in the Ministry of Agriculture and Irrigation and the organisation of strong units for planning, coordination, and evaluation at the State and district levels. To facilitate decisions on key issues of overall importance and assessment of progress of development, the Commission suggested the constitution of consultative machinery at various levels consisting of Ministers, technical and secretariat officers, and other concerned interests; the formation of District Agricultural Coordination Councils, Joint Councils under the respective departments at the State and Central levels, and Agricultural and Rural Development Councils at the State level as well as a Standing Consultative Council at the Centre.

For fuller development and utilisation of local resources as also the involvement of all sections of the community, the Plan had to develop from the village level to concretise in the form of projects/programmes in the different watersheds and agro-climatic regions which could be properly coordinated and integrated at the State level within the framework of the national Plan. While emphasising the need for strengthening the planning machinery at various levels for the formulation of plans, the Commission suggested that an effective evaluation system was essential to keep a watch on the progress of schemes and for keeping the implementing agency adequately and promptly informed of difficulties and bottlenecks for taking necessary corrective measures. Apart from evaluation and appraisal by Government departments, evaluation through independent autonomous bodies like the agricultural universities and research institutions should also be encouraged.

The responsibility for research and development in agriculture lay mainly with the agricultural universities, the ICAR research institutes, and the States' Departments of Agriculture. The agricultural universities and the Central research institutes should be entrusted with fundamental and applied research and the States' Departments of Agriculture with adaptive research which require extensive experimentation on the economics and adaptability to agro-climatic regions. Each of the organisations should accordingly be adequately strengthened with men, materials, and facilities with appropriate mechanism for coordination and cooperation amongst the various agencies.

The Central Government should liberally fund research work in agricultural universities, not on a pro rata but rather on the basis of need, to enable them to come up to desired level. Research and development funding in agriculture was inadequate. This should be raised in a phased manner in such a way that in course of ten years or so it would constitute about one per cent of the contribution which the agricultural sector made to the Gross National Product. Ten to twenty per cent of the total plan outlay under agricultural development programmes should be earmarked in the State budget for agricultural& education and research.

The ICAR should, with the help of its scientific panels, undertake to draw up long term plans of fundamental and applied research, identify gaps in information, and assign them for execution to appropriate scientists, universities, and search institutes. Ad hoc schemes of research, basic to agriculture, emanating from the universities should be liberally funded. The ICAR should concentrate more on problems of national importance and develop suitable coordinated programmes, provide funds, and evolve mechanics of coordination. All research work of local importance should be carried out by the agricultural universities and the States' Departments through their own organisations. A fresh look was necessary with regard to the all India coordinated research projects in respect of their criteria, location, funding, administration, evaluation, and follow-up. The ICAR research institutes should be spread evenly over the different agro-climatic regions. For this purpose, they should preferably be of small and medium sizes having more specific and restricted objectives so that manageability and viability were assured. Research management required specialised training, which every head of an institution should acquire. With the existence of agricultural universities, there was no need for the ICAR institutes to have any regular academic programmes of teaching and degree- awarding. They should also refrain from any commercial production and restrict themselves to researches on development and perfection of the products.

The ICAR had introduced cadres of Agricultural Research services. For the initial induction, the candidates for Agricultural Research Service should possess research experience and evidence of research capability, making it necessary to raise this innovation on the quality of research output should be watched and evaluated before any further changes were introduced.

The Commission noted that agricultural education at the higher levels was well attended to but it was neglected at lower and middle levels. The need for trained men at the lower levels was enormous having a high potential for employment'. For this purpose, vocational training and non-degree and non-formal education in agriculture had to be organised on a massive scale. The ICAR should insist on the creation of an inter-university task group which would study the employment opportunities of agricultural graduates and formulate necessary action programmes. The agricultural universities should act as a link between their graduates and the prospective employers.

The Commission also stressed the need for building up a highly competent organisation with expertise in mass communication and ability to make appropriate use of mass communication media. The Directorate of Extension at the Centre should be strengthened and placed in the Department of Agriculture under the Principal Secretary. The Directorate should be the source of technical guidance and advice regarding extension organisation, extension training, and communication, and should be headed by an Extension Commissioner who should be a technical officer of the rank of Additional Secretary.

Extension of results of agricultural research should be based on well laid out demonstrations. For this purpose, the National Demonstration Programmes should be streamlined. Farmers trained under Farmers' Education and Training Programme should be involved in extension work. There should be at least one Farmer Training Centre for every 15 blocks. Such programmes should specifically include the training of women in the rural areas, at the middle and lower levels. Special curricula bearing on subsidiary occupations, nutrition and food habits, and population education should be introduced in the case of women trainees. For this purpose, a separate wing under the supervision of trained women staff should be set up in the training centres. It would be necessary to put across special broadcasts for women. The Mahila Samities organised under the Applied Nutrition Programme could be suitably expanded to enable them to act as a discussion forum for women. The sections of home science and nutrition education in the Directorate of Extension in the Centre should be suitably strengthened so that they could provide the desirable national leadership. All such programmes handled by other departments and universities should be brought into its fold.

The Departments of Agriculture/Animal Husbandry Fisheries at the State level should have overall responsibility for extension work and should also be responsible for suggesting field problems and formulating new farm technology, conducting field trials, and demonstrations, and, along with the agricultural universities, organisation of training programmes, etc. The Central Directorate of Extension would be responsible for coordinating extension and training activities in the country and laying down the broad principles 3 for the nation in the field in consultation with the States. The Central agency should also conduct sample assessment of the extension and training programmes with a view to drawing conclusions of value for improvement of these programmes. It should maintain up-to-date data on manpower requirements in the context of development programmes.

Having recommended such highly centrally directed agricultural administration and organisation of research, education, and extension, the Commission did not fail to suggest that a careful review be undertaken of the current procedures with a view to decentralising the power of decision making as far as possible. One wonders why the Commission itself did not undertake this task for six years from 1970 to 1976 when it was sitting. It seems that the Commission did not see much possibility of decentralising decision making and indeed probably did not even believe in decentralisation. Its vision was essentially imperial, namely, of a direct and single line of control and command.

Fifth Five Year Plan (1974-79)

At the beginning of the Fifth Plan (1974-79). there were 72 agricultural colleges, 22 veterinary colleges, 2 dairy colleges and 8 agricultural engineering colleges. During the. Fifth Plan period, the number of agricultural, veterinary, and agricultural engineering graduates was estimated at 25,500, 4,200, and 1,400, respectively. It was expected that these would be sufficient to meet the agricultural manpower requirements of the Fifth Plan. Hence, the main emphasis in the Fifth Plan was to be on improvement of standard and quality of education, orientation of curricula and courses to suit the changing needs of agricultural development, strengthening of inter-institutional collaboration, and development of centres of excellence.

There were 19 agricultural universities. While some of them were well developed, a number were still at a nascent stage. During the Fifth Plan period, while older universities were to aim at further development in selected fields, the new universities were to build up requisite facilities. Each agricultural university was expected to draw up a plan for its academic and campus development. It was also contemplated that agricultural universities would give particular attention to development programmes involving work experience and practical training so as to make the students not only more employable but also capable of learning through self-employment. The avowed objective of establishing agricultural universities was to facilitate integration of research, teaching, and extension education. However, in practice, significant deviations had taken place. The Fifth Plan document called upon the ICAR to formulate requisite criteria and make financial assistance to the agricultural universities conditional upon their meeting such criteria.

Considerable regional imbalance in the agricultural educational structure had developed. Three States, namely , Uttar Pradesh, Maharashtra and Rajasthan accounted for nearly two-thirds of the annual intake for higher agricultural education. About one-third of the total agricultural colleges in the country were located in Uttar Pradesh. A number of them were sub-standard. The Plan document stressed the need for upgrading some of these colleges and reorganising others as farmers’ training centres. There was also abnormal student wastage.

In the Fifth Plan, a number of agricultural polytechnics, called Krishi Vigyan Kendras, were proposed to be set up. They were to be run by either agricultural universities or ICAR institutions and provide in-service training to the extension staff of the departments of agriculture, animal husbandry, and fisheries, and public/private sector corporations, and to impart technical skills to selected farmers. They were to cater to the needs of those who were either already in employment or were self-employed. No diplomas were to be awarded by the Kendras. The emphasis was to be on imparting practical training in techniques which were of immediate relevance to the region concerned.

Farmers' Training

In the Fourth Plan, a centrally sponsored programme of farmers' training was contemplated in 100 districts. At the beginning of the Fifth Plan, the programme was operational in about 80 districts. The main shortcomings were: Out of the 80 centres, full complement of staff was not present in 21 districts; programme coverage was too thin, so that a farmer could attend one of the training courses only once in three or four years; and involvement of district level functionaries was inadequate. In the Fifth Plan, the first task was to rectify these shortcomings. It was also contemplated to extend the programme to another 100 districts. In this, districts covered by important programmes for development of commercial crops and pulses were to be given priority.

The programme of national demonstrations covered about 100 districts by the beginning of the Fifth Plan, but the quality and effectiveness of demonstrations had been rather uneven. In the Fifth Plan, the number of districts was proposed to be reduced to 50. The idea was to locate the demonstrations in the vicinity of agricultural universities/institutes so that the staff of the universities and the institutes could give the necessary guidance. Suitable provisions were also made in the State Plans for farmers' training programmes and also for local verification of trials and demonstrations.

Sixth Five Year Plan (1980-85)

The Sixth Five Year Plan summed up the position of the ICAR thus: The Indian Council of Agricultural Research is the apex body at the National level with principal mandate to promote, aid, and coordinate research in the areas of agricultural/ animal sciences, fisheries, and agricultural engineering. The Council has also the unique feature of promoting higher agricultural education including extension education. The triple function of research, education, and extension education was implemented through 34 Central Research Institutes, the National Academy of Agricultural Research Management, five Project Directorates and 54 All India Coordinated Research Projects under the Council and 21 Agricultural Universities located in the State Sector. During the Sixth Plan, National Research Centres with eminent scientists were to be established and a National Agricultural Research Project started to enhance capabilities of Agricultural Universities to locate specific research in each of the agro-climatic zones. This empire of the ICAR was called a national grid of cooperative research and in it the Central Institutes and the State Agricultural Universities were said to be equal partners. It was said that the system aimed at achieving maximum complementarity of resource use with a view to strengthening mission-oriented research.

The Agricultural Universities were set up to bring about an integrated approach to education, research, and extension and the responsibility of research had been transferred to the Agricultural Universities. However, in this process, the links between research and extension had tended to become weak in some cases. Therefore, during the Sixth Plan period, linkages between development departments and Agricultural Universities were proposed to be strengthened. Agricultural Universities were to play a leading role in organising farmers' fairs, extension training, and 'lab to land' programmes. Two new Agricultural Universities were to be set up in Jammu and Kashmir and South Bihar.

It had become increasingly difficult to implement many of the research projects/programmes in tribal and backward areas due to lack of competent technical manpower and specialists. Hence, a Comprehensive Project of additional compensatory benefits was sanctioned for scientists of the ICAR to attract them to such neglected areas. A programme of Human Resource Development was started to provide financial assistance to deserving students from tribal and backward districts for higher studies up to post-graduate level, so that they could go back to their areas and help develop them. The educational programmes in the agricultural universities were to be strengthened to improve their quality and to make them .increasingly relevant to the development needs of the country. Higher educational programmes to train the required manpower for research in different branches was tb receive special attention. The Krishi Vigyan Kendra programme (KVKs) started towards the end of the Fourth Five Year Plan was to be further strengthened. The National Academy for Agricultural Research Management (NAARM), which was set up at Hyderabad during the Fifth Plan period for imparting better management skills to research scientists, was to be fully developed to train the new entrants and in-service personnel at various levels in ICAR institutes, Agricultural Universities and in States and Central Government development departments.

With the assistance of the World Bank, the agricultural extension set up was reorganized on the basis of what is called the Training and Visit (T & V) system. It aims primarily at greater professionalisation of extension staff, and, is designed to transfer technology from the research stations to the farmers, step by step, through the mechanism of workshops between research scientists and subject matter specialists of the extension service for two days every month, followed by training of field level Agricultural Extension Officers (AEOs) and Village Level Workers (VLWs) by teams of subject matter specialists at the subdivisional level for one day every two weeks and visit by the VLWs to groups of farmers on fixed days every two weeks according to a well defined schedule. By 1984-85, the reorganised Extension System was in operation in 13 major States. Steps were taken to undertake training of women and the weaker sections, including Scheduled Castes and Scheduled Tribes. Tours were arranged for farmers from agriculturally less developed areas to developed areas so that they would be acquainted with improved agricultural practices.

Working Group on Agricultural Production for the Formulation of the Seventh Five Year Plan, September 1984

In October 1983, the Planning Commission constituted a Working Group on Agricultural Production, Extension and Administration for the formulation of the Seventh Five Year Plan. The Working Group submitted its Report on September 30, 1984. It examined the working of the T & V system of extension and listed a number of problems, both administrative and technical, that the States encountered in setting up the system. The system was expected to ensure more effective utilisation of the large infrastructure that had been created with only marginal strengthening. But, evidently, recruitment of a large number of field-based staff like Village Extension Workers (VEWs) and AEOs became necessary. The Working Group noted that this posed a formidable problem because of inevitable procedural delays in finalising recruitment rules, promotions, transfers, etc. Escalation of prices of building materials and motor cycles further compounded administrative problems. Sudden transition from a multi-purpose extension system with no linkage with research, no regularity of visit and practically no training at all, to a highly structured system involving close supervision, required orientation of the extension personnel within a short period. This proved difficult. In several states, the extension personnel continued to be burdened with heavy paper work and non-extension duties, because of a number of subsidy-oriented schemes involving subsidies to individual farmers. There was also lack of commitment on the part of some States to professional extension service. Finally, the management system of Agriculture Departments of many States was not capable of giving the kind of service that was needed. The Working Group suggested that it was necessary for the Ministry of Agriculture to have periodical discussions with the State Governments at a senior level, so that these problems were tackled satisfactorily, before these states move to the second phase of T & V.

Other points made by the Working Group were : (a) Extension staff tends to work in a very insular fashion, without establishing proper linkage with other institutions, particularly input organisations. While extension staff are not meant to handle inputs, they should advise the farmers about inputs, their availability, etc., and should, in the fortnightly training sessions, bring to the notice of Subject Matter Specialists (SMSs) any problems regarding inputs which the farmers might be facing. (b) Extension staff should advise farmers on many aspects related to farming, such as, simple tests to find out whether fertilisers are genuine or adulterated, need to preserve the certification tag of the seed bought, etc. (c) VEW's should listen to farmers' problems so that the specific targets expressed in terms of adoption levels of the farmers. The achievement of the targets should be measured by the monitoring and evaluating wing and by the supervisory staff, and not through reports obtained from extension staff themselves.

The Working Group referred to the location - specific research programmes for different farming situations which were being introduced under the National Agricultural Research Project (NARP). Under the NARP, a number of research stations in different ago-climatic zones were being set up. The Group recommended that extension must play a major role in feeding the research stations with the problems of the farmers, so that in the formulation of research programmes, these can be taken note of.

There was also need for a better overall appreciation and understanding of the pre-requisites of an extension system. These included (a) field supervision which was the most essential feature of an extension system. In many states, however, supervisory posts were either not created promptly or not filled. Without field supervision, the entire investment in the extension system is wasteful; (b) mobility -it was futile to recruit and train large numbers of extension staff and keep them immobile; (c) training - in a number of states extension staff were not sent for training for reasons of economy; (d) extension projects should cover all the components of supervision, training, research support, and visual aids and should not be on a piecemeal basis; there was need for better appreciation of the importance of a professional extension system.

Seventh Five Year Plan (1985-90)

The Seventh Plan referred to the experience of the T & V system and reiterated the need for (a) coordination between T & V system and supply of inputs and related services; (b) linkage between the Research Institutions, Agricultural Universities and Extension set-up in different States; (c) orienting extension programme to specific conditions; and (d) strengthening of operational functionaries by equipping them with adequate professional skills and exposing them through actual field visits and suitable incentives and recognition.

A new project called the National Agricultural Extension Project (NAEP) was taken up with World Bank assistance in September 1984. It had three components; (i) the State component covering where the on-going extension projects had already been completed and the second phase was to be introduced; (ii) the Central Sector Project for strengthening the Directorate of Extension, Extension Educational Institutes, and the setting up of a National Institute of Extension; and (iii) the Centrally Sponsored component consisting of special sub-projects to bridge the gaps and rectify weaknesses in the on- going projects.

By 1986-87, of the 17 major States where Training and Visit system was in operation, 10 States had completed the project period of five years. To consolidate their experiences, the National Agricultural Extension Project (NAEP) was brought under operation in three separate parts. Under the first phase of the project (NAEP-I), the States of Madhya Pradesh, Rajasthan and Orissa were taken up for further improvement of the system. Centrally Sponsored Special sub-projects were draw up from time to time to bridge gaps in the on-going extension system. The second phase of the project (NAEP-II) was taken up for the States of Gujarat, Haryana, Karnataka and Jammu & Kashmir and was largely devoted to strengthening the State component of the system. The third phase
(NAEP-III) which had been negotiated with the World Bank, besides covering some Central Sector and Centrally sponsored components, was also to cover extension projects in a number of States, other than those in the first and second phase.

The Central Sector sub-project, ‘operational costs’ had the sub-components: (i) Internal Consultancy, (ii)

Inter-disciplinary teams, (iii) Consultancy for identification and preparation of projects, and (iv) Organisation of workshops and seminars. The internal consultancy programme covered special studies on (i) extension cadre management, (ii) information support, (iii) research linkage, etc. The inter-disciplinary teams reviewed the State extension projects. Clearly, agricultural extension was becoming and more professionalised.

The Directorate of Extension, in the Central Ministry of Agriculture, continued to guide the State Departments of Agriculture in planning, coordinating, implementing, and evaluating the training programmes for extension personnel, farmers, farm women, and farm youth. For upgrading extension functionaries working under the T & V system, intensive pre-service and in-service refresher/special training programmes were organised. In addition, the Extension Education Institutes at Anand (Gujarat) and Rajendranagar in Hyderabad (Andhra Pradesh) imparted post-graduate training in Extension. These two Institutes and the Extension Education Institute at Nilokheri (Haryana), were meeting the Subject Matter Specialists specially in the areas of extension teaching methods and communication techniques. Training support was also provided by these Institutes in areas like social forestry, horticulture, animal husbandry, etc. A net-work of Gramsevak Training Centres/Extension Training Centres and Farmers' Training Centres imparted pre-service/in-service training to the grass-root level extension functionaries and farmers.

A National Centre for Management of Agricultural Extension was established at the National Institute for Rural Development, Rajendranagar, Hyderabad. The objectives of the Centre are: (i) To gain overall insight into Agricultural Extension Management System and Policies together with operational problems and constraints at each step and stage; (ii) To identify, appreciate, and develop modern management tools, techniques in problem-solving approaches and utilising the mechanism of personnel management, resources management, input management and finally the conflict management at the organisational level; (iii) To develop skills in organising need-based field programmes for training and retraining of higher level functionaries for executing extension programmes at apex level; (iv) To conduct policy-cum- programme oriented researches in the area of Agricultural Extension Management as sequel to provide feedback to training programmes; (v) To develop systematic linkages between the national and international institutions of outstanding accomplishments in the field of Agricultural Extension Management, which will also participate in the activities of the Centre; (vi) To forge linkages with national institutions located in the vicinity of Hyderabad under suggested programme of institutional collaboration and employment of internal consultants; and (vii) To serve as a repository of ideas and develop information, communication and documentation services, etc. The Centre organises mining courses in Agricultural Extension Management for master- trainers and senior and middle-level managers in agriculture.

For in-depth training in subject matter, fifteen State Agricultural Universities and State-Level Institutes were identified as Institutes of Advanced Training. The State Agricultural Universities and other Institutes would take care of the training needs of grass root extension workers and others meeting 95 per cent of the training needs.

The pace of implementation of the extension projects was not uniform in all the States. In some states there were serious problems mainly due to inadequate funding and delay in the recruitment and placement of personnel and execution of civil works. Nevertheless, the Mid-Term Appraisal of the seventh Plan found that the overall conclusion of the various evaluation studies was that the reformed extension had induced positive changes both institutional and economic. Of course, first, farmers' education was replaced by professional extension and then by its management.

Reorganisation of the Ministry of Agriculture, 1985

In early 1985, the Ministry of Agriculture was reorganised to constitute departments having a direct bearing on agricultural production, namely, Department of Agriculture and Cooperation, Department of Agricultural Research and Education, Department of Rural Development, and Department of Fertilisers. Of these, the Department of Agriculture and Cooperation is organised into 24 Divisions and 2 Cells. In the implementation of various policies and programmes, the Department is assisted by its three Attached Offices, 63 Subordinate Offices, three Public Sector Undertakings, eight Autonomous Bodies and fifteen National Level Cooperative Federations. The Department of Agricultural Research and Education (DARE) provides the necessary governmental linkages for the Indian Council of Agricultural Research (ICAR) and is intended basically to provide administrative services and support to the ICAR. The

Director-General of the ICAR is the Secretary to the Government of India in the DARE.

Indian Council of Agricultural Research

Within the overall framework of government policies, the ICAR is vested with full authority to determine basic strategies, formulate operational policies, develop necessary programmes, and ensure their implementation on sound technical and economic principles. The main idea of the reorganized set-up of the ICAR is to vest it with autonomy essential for the effective functioning of a scientific organisation and to deal with sister departments of the central government, with state governments and with international agricultural research centres through the DARE. The ICAR is the apex organisation for all agricultural and animal husbandry research and education in the country, with 41 institutes in operation as on 31st March 1987. There were 10 National Research Centres at that time and 10 more Centres were to be set up. There were also 4 National Bureaux, one each under Crop Sciences, Soil Science, Animal Sciences, and Fisheries. In addition, as on 31st March 1987, there were in operation 78 All India coordinated Projects, including 9 Project Directorates, 4 Transfer-of-Technology Projects in Agricultural Extension, and 5 Projects from Agricultural Produce Cess Funds for Guar, Betelvine Acarology, Weed Control and Animal Energy.

The ICAR operated 18 schemes under the agricultural education programme covering three major aspects, viz., (i) institutional development, (ii) qualitative improvement of agricultural education and research; and (iii) manpower development. The ICAR was also implementing the National Agricultural Research Project (NARP) to strengthen the regional research capabilities of the agricultural universities for conducting need-based research. The project came into effect in January 1979 and Phase I of the NARP terminated on September 30,1985. During Phase I, the research reviews of 22 agricultural universities (covering 16 States except Jammu & Kashmir) were completed. The reviews provided detailed information on each agro-climatic zone in the state, the constraints in production and the research requirements of the zone. Based on the information, investment proposals for strengthening the research programmes and for rationalisation of the research organisations of the state, were being formulated. Out of the 127 agro-climatic zones identified under the jurisdiction of 23 agricultural universities, 81 research sub-projects had been sanctioned up to March 31, 1985. In phase II of the Project commencing October 1, 1985 all agricultural universities were eligible for assistance subject to effective implementation of Phase I and the acceptance of the basic eligibility conditions by the universities. There were 26 State Agricultural Universities, which had functional linkages with the ICAR. By the end of the Sixth Plan, about 9,600 seats for agricultural graduates were available in 85 agricultural colleges in the country. These colleges were either part of the 26 agricultural universities or affiliated to traditional universities. The erst-while Central Staff College, now re-designated as the National Academy of Agricultural Research Management (NAARM), has been functioning since 1976 and is training new entrants to the Agricultural Research Service, besides giving orientation courses to senior scientists including directors of institutes.

The transfer of technology programme of ICAR involved four major projects, namely, National Demonstrations, Operational Research Projects (ORP), Krishi Vigyan Kendras (KVK), and Lab-to-Land Programmes. About 2,500 National Demonstrations in 47 districts were being conducted annually at the beginning of the Seventh Plan, while 38 Operational Research Projects with 94 centers were operating throughout the country. There were 89 Krishi Vigyan Kendras and 8 Trainers' Training Centres spread all over the country. Short- and long-term training courses were started at the Kendras in crop production, livestock production, horticulture, home science, agricultural engineering, fisheries and related disciplines. In 1982-84, the Lab-to-Land Programmes covered 75,000 small and marginal farming families and landless agricultural labourers.

The mid-term appraisal of the Seventh Plan had pointed out that, in the longer term, agricultural strategies must be designed to work with local agro-climatic features, particularly soil type, climate including temperature and rainfall and its variation and water resources. In November 1987, Government set up a Central Committee under Chairmanship of Member (Agriculture), Planning Commission for organising agricultural planning on the basis of agro- climatic regions. The terms of reference of the Central Committee were : (i) to organise agricultural planning systems for the 15 Agro-Climatic Zones; (ii) to issue instructions and background papers to conduct techno-agro-climatic studies to each of the planning teams; (iii) to work out principles of integration of plans of the ago-climatic regions with the State and National Plans; (iv) to integrate agricultural planning with animal husbandry, fisheries, forestry, ago-based industries and allied sectors; (v) to recommend appropriate schemes and policies based on the findings of the studies/surveys completed, for the rapid agricultural development of the regions; and (vi) to examine matters related to the subject of planning for ago-climatic regions.

In July 1988, guidelines were prepared for planning at the agro-climatic regional level for use of the Planning Teams appointed for the different ago-climatic zones. According to the guidelines, the Planning Commission had accepted the following regionalisation of the national agricultural economy: (i) Western Himalayan Region, (ii) Eastern Himalayan Region, (iii) Lower Gangetic Plain Region, (iv) Middle Gangetic Plain Region, (v) Upper Gangetic Plain Region, (vi) Trans-Gangetic Plain Region, (vii) Eastern Plateau and Hills Region, (viii) Central Plateau and Hills Region, (ix) Western Plateau and Hills Region, (x) Southern Plateau and Hills Region, (xi) East Coast Plain and Hills Region, (xii) West Coast Plain and Ghats Region, (xiii) Gujarat Plain and Hills Region, (xiv) Western Dry Region, and (xv) Island Region.

A Central Planning Group was set up to coordinate the planning studies to be done at the level of each ago-climatic region by the Planning labourers. Teams. Each Planning Team could sub-divide its zone into sub-regions. The guidelines recommended to the Planning Team were to first undertake a detailed study of indicators relevant for agricultural planning, preferably at the level of districts. Such indicators were to include the growth of population for each Census Year since 1961, composition of the rural and agricultural the work force, land holdings, tenancy conditions, and landless labourers. Projections of the labour force in agricultural and non-agricultural sectors could be attempted. A district level classification of the levels of development and rates of growth of different agricultural indicators - irrigated areas, cropping intensity, irrigation intensity, fertiliser consumption and application per hectare, tractorisation, utilisation of pesticides, pumpsets, agricultural credit and farm business investments - should be made. A very detailed analysis of cropping patterns covering the principal crops of the region as also the aerial spread of special crops like fodder, fruits and vegetables, spices and other high valued crops should be undertaken. Other data to be collected included spread of markets, credit infrastructure, banks and cooperative societies, etc.

The need to look into the problems of land use planning in each region was stressed. Similarly, land and water management questions would need to be taken seriously. The Agro-Climatic Regional Planning Teams should prepare water balances for each identified sub-region and a water development and management strategy. Performance indicators must be set, monitoring mechanisms of a measurable nature operationalised and a sense urgency to these sector The guidelines suggested a number of other programmes for development of agroprocessing and agro-processing and agro-support activities, improved technology and management needs to be designed for improvement of delivery systems for agricultural services and inputs, etc.

Eighth Five Year Plan (1990-95): Perspectives and Issues

The Planning Commission circulated a draft of its views on planning for the Eighth Five Year Plan, 1990-95. It mentioned that the Eighth Plan must aim at a more diversified agriculture in terms of both activities and regions. Inter-regional productivity differentials must be overcome. A more diversified crop mix and land use Pattern must be aimed at and improved land and water management strategies implemented. The promotion of agro-processing as an integral Part of regional agricultural plans is essential.

There has to be a conscious design of policies which can organise and activate institutional systems which provide support to the small peasant structure of the Indian agricultural economy. In addition to the designing of more appropriate technological systems of land and water management and seed and other input systems, a more efficient and widespread distribution system for peasant support is a precondition to agricultural growth in the next phase. Input distribution systems which are targeted to specific agricultural institutional categories of rural producers need to be designed. The agro- climatic regional project will have to organise the details of the big questions of land use as between crop production and other agricultural activities and the regional specialisation of agricultural crops. High level management and planning expertise will need to be used to design and operationalise such policies. The ago-climatic regional project will provide planning back-up, but the details will have to be integrated into the district and State level plans.

Thus, after forty years of try-out, administration for agricultural development has boiled down to management systems with an interface for systemsmanagement. This is typical of what happens when the vastness and the variety of the problem is recognised but there is unwillingness to decentralise. Reality is conceived as a set of systems and variation is reduced to differences in parametric values. High level management in high places does the rest.

To see the road we have travelled, it is worth recalling the vision in the First Five Year Plan. The First Plan began with a recognition that the problems of Indian Agriculture are far more fundamental than is commonly recognized and that many of them are inherent in the structure of the rural economy. It was emphasized that the central problem was to change the character of agriculture from subsistence farming to economic farming and that the uneconomic holdings were at the root of many of the difficulties. A solution was sought in organizing agriculture into two sectors : (i) holdings above a prescribed level organised into private registered f-s; and (ii) the smaller holdings brought together into co-operative farms A Village production would guide, supervise, direct or control the registered farms and the co-operative farming societies in each village. The main functions of the council were : (i) to frame programmes of production to be achieved at each harvest by the village; (u) to frame budgets of requirements for supplies and finance needed; (iii) to assess results attained at each harvest; (iv) to act as the channel through which all Government assistance is provided to the village; (v) to take steps to bring under cultivation land lying uncultivated; (vi) to arrange for the cultivation of land not cultivated or managed by the owners; (vii) to assist in securing minimum standards of tillage to be observed in the village; and (viii) to assist in the procurement and sale of surplus foodgrains.

If that was village utopia, the present one is science fiction. A more realistic set up of administration for agricultural development in India must move to the State capitals and further down to the agricultural universities. It is high time that the role of central ministries, institutions, and agencies is reduced to a minimum; to functioning as a clearing house of information and providing administrative support to mutual consultation between state governments and agricultural universities. The emphasis must shift away from management to agricultural research and education of the farmer rather than training of the extension officer.

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DEVELOPMENT OF INSTITUTIONAL FINANCE FOR AGRICULTURE IN INDIA

V.M.Dandekar and F.K.Wadia

The beginning of institutional finance for agriculture in India goes back to 1793 when the system of taccavi loans was introduced. Subsequent important landmarks are the Land Improvement Loans Act, 1883, the Co-operative Credit Societies Act, 1904, the report of the Rural Banking Enquiry Committee. 1950, the report of the Committee of Direction of the All-India Rural Credit Survey. 1954, which advocated state participation in cooperation at all levels, establishment of the State Bank of India with major state participation in 1955, nationalisation of fourteen largest commercial banks in 1969, establishment of 48 Regional Rural Banks in 1976-77, and of the National Bank of Agriculture and Rural Development in 1982. By 1985,40 per cent of the rural credit was provided by these several institutions. The rest 60 per cent was still supplied by the moneylender. The small and marginal cultivator is dependent on the moneylender to a much greater extent. Moreover, overdues have been mounting and are now threatening the flow of credit. The situation demands a new and fresh thinking.

Introduction

The purpose of this paper is to review the development of institutional finance for agriculture in India. Only official sources of information have been used.

A cultivator is in almost perpetual need of credit both for production and consumption. Traditionally, his needs were met by the landlord-trader-moneylender complex involving usurious interest rates and other exploitative practices. Official cognizance of his needs goes back to 1793, when the system of *taccavi* loans was introduced providing loans at low rates of interest for agricultural improvements, mainly for the digging of wells. During the rule of Lord Mayo (1869-1872), the Land Improvement Act, 1871 was passed. It was amended in 1876 and repealed in 1883 when a more comprehensive piece of legislation was enacted, viz., the Land Improvement Loans Act, 1883, 'to consolidate and amend the law relating to loans of money by the Government for agricultural improvements'. The purposes for which loans were to be granted for improvements were specified to include construction of wells, tanks and other works; preparation of land for irrigation, drainage and reclamation; permanent improvement of land for

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agricultural purposes and renewal or reconstruction of any of these works. Loans were to be granted on the security of land. Where the amount of loan did not exceed three-fourths of the value of the applicants' transferable interest in the land after improvements had been made, no collateral security was required; otherwise further security was required. The rules in most States provided for an interest at the rate of 6-1/4 per cent per annum. Loans were to be repayable in instalments which could be extended over a period of thirty-five years depending upon the durability of the work or the purpose for which the loan was advanced. The Agriculturists' Loans Act was passed in August 1884 to provide for the advance of loans to the owners and occupiers of arable land for the relief of distress, the purchase of seed or cattle or any other purpose not specified in the Land Improvement Loans Act, 1883 but connected with agricultural objects.

Government finance continued to be channelled under the provisions of the Acts of 1883 and 1884. Some special regulations for advancing loans for specific purposes like natural calamities, pumping sets, agricultural machinery, etc., were also passed by a number of States/Provinces. However, defects in the working of the Acts continued to be commented upon. In 1903, the Irrigation Commission pointed to a number of defects, such as high rate of interest, rigidity of collection, the onerous terms regarding periods of repayment, delays in distribution and conditions, relating to securities required, etc. The Punjab Land Revenue Committee, 1938 was of the opinion that the unpopularity of Government loans was due to the petty exactions of subordinate revenue staff, delay in obtaining money, the necessity of repaying on a fixed date, the failure of the revenue officers to take any interest in the grant of loans, and little account being taken of harvest conditions and the borrowers' ability to repay when an instalment was due. Commenting on these findings, the Agricultural Finance Sub-Committee of the Policy Committee on Agriculture, Forestry and Fisheries, 1945, stated 'It is clear, therefore, that the difficulties which have resulted in the comparative failure of State loans so far, have been present almost since the inception of the system and that if the alternative agency is to work successfully some other lines than those of the present *Taccavi* work will have to be contemplated' [Department of Education, etc., 1945, Pp. 32-33).

Co-operative Finance

The co-operative movement was started in India as a defensive mechanism against the usurious money lender. Co-operative finance gained recognition with the passage of the Co-operative Credit Societies Act, 1904. The main objects of the Act, which was limited to primary cooperative credit societies only, were (i) to provide for the constitution and control of co-operative credit societies by an enactment specially adapted to their organisation and aims, (ii) to confer special statutory privileges and concessions upon them with a view to encouraging their formation and assisting their operation and (iii) to ensure that they were co-operative in name as well as in spirit. The Co-operative Societies Act of 1912 was made applicable to all types of societies, credit and non-credit. The real stimulus to the co-operative movement came following the recommendations of the Maclagen Committee in 1915. That Committee had recommended the setting up of a three-tier organisation comprising primary agricultural credit societies at the village or base level, central banks at the district level and provincial banks at the apex or provincial level. Accordingly, changes in the co-operative credit structure were initiated by the Government of India [Reserve Bank of India, 1915, p. 5]. Cooperation became a provincial transferred subject with the passage of the Government of India Act, 1919. The movement expanded rapidly in some states, but lagged behind in others. There was a setback in the progress of the movement in the 1930s, as a result of the Depression. The rise in agricultural prices that took place with the outbreak of the Second World War, eased a difficult situation for the movement.

Two Committees set up by GOI in 1945 had commented on the working of the cooperative credit institutions. In its Report in July 1945 the Agricultural Finance Sub-Committee had noted the weakness of the apex institution of the three-tier provincial structure. The Committee made recommendations for the relief of rural indebtedness, development of private institutional credit (commercial banks), regulation of money-lending and the role of co-operative agencies in financing agriculture. It also recommended the setting up of an Agricultural Credit Corporation in each Province. Earlier in January 1943, the Co-operative Planning Committee was appointed to draw up a co-operative plan for the country. In its Report, submitted in November 1945, this Committee did not agree to the setting up of Agricultural Credit Corporations as much time would be lost in the preparation of the scheme, enactment of the legislation, and setting up of the requisite organisation. Instead the existing three-tier co-operative institutions should be suitably strengthened and provided with the necessary share capital and finance.

The co-operative credit agencies thus included the primary co-operative credit society at the village level, which was the basic unit in the short-term credit structure. The primary societies were usually federated into banking unions or central co-operative banks and these again into the State/Provincial co-operative bank which functioned as the apex institution for the whole State. The long-term credit needs of the agriculturists were supplied by the land mortgage banks. At the top of these layers was the Reserve Bank of India (RBI) which could provide financial accommodation to the co-operative movement for seasonal agricultural operations and the marketing of crops, as well as for non-agricultural purposes through the State co-operative banks. The Reserve Bank functioned as a lender of the last resort to the Provincial/State co-operative banks also and its loans to the co-operative banks carried a concessional rate of interest, 2 per cent lower than the normal rate to other commercial banks. A number of fiscal and other privileges were also granted to the co-operative institutions. These included exemption from income tax, stamp duty, and registration fee; prior claim after Government on the agricultural produce for the recovery of loans; exemption of shares or interest of members from attachment; and exemption of the society's loans from the operations of debt relief enactments.

Independence and After

Thus, at the time of Independence, finance was being advanced to agriculturists by the Government, departmentally in the form of loans and grants, and through the co-operative credit agencies. In 1948-49, there were 112 thousand primary agricultural credit societies with a membership of about 4.4 million, Loans advanced in that year by these societies amounted to Rs. 14.04 crore. Loans and grants given under the Land Improvement Loans Act, 1883 and the Agriculturists Loans Act, 1884 totalled to about Rs. 8.5 crore. These advances to the cultivators formed only a very small percentage of the total needs of Indian agriculturists which were estimated at the time to be between Rs. 500 crore and Rs. 800 crore, the bulk of which continued to be met by the private money-lender. This was corroborated by the findings of the All-India Rural Credit Survey of the Reserve Banks of India, (RCS) in 1951-52, which found that professional and agriculturist money-lenders together supplied about 70 per cent of the total borrowings, while the Government agencies, the co-operative movement and the commercial banks together supplied only 7.3 per cent of the total credit requirements [Reserve Bank of India, 1954, Vol. II, p. 167].

The co-operative credit movement was very unevenly developed over the various States. Nearly 63 per cent of the loans were distributed in only two States - Bombay and Madras - where the movement had made progress due to the special attention paid to its development by the State Governments. The rates of interest on co-operative loans in most states were high. Another unsatisfactory feature of the movement was its failure to mobilise rural savings in any large measure. Again, while professional management of credit co-operatives was considered necessary, it was not emphasised.

There were five central and 283 primary land the mortgage banks in 1948-49 with advances total ling abut Rs. 2 crore. The bulk of the loans was given for redemption of old debts. Again, as in the case of co-operative credit societies, barring Madras and to some extent Bombay and Mysore, land mortgage banks had not made much progress in the country. Also, the banks did not touch the main agricultural population. They catered to the rich and big agriculturists, some of whom were absentee landowners renting out lands [Reserve Bank of India, 1954, Vol. II, p. 225].

The dominant position of the money-lender was due to two basic facts: the weak financial position of most of the borrowers, and their requirements of credit in small amounts for urgent but unpredictable needs, to which the money-lender had completely adapted. The co-operatives and the State supplied credit for specific productive purposes, whereas the requirements of the borrowers were largely for family purposes. The RCS had reported that, in 1951-52,46.9 per cent of the borrowings by cultivators and 69.9 per cent by non-cultivators was for family purposes. Borrowing for expenditure on the farm constituted 42.1 per cent of the total borrowings by cultivators and 7.1 per cent by non-cultivators [Reserve Bank of India, 1956, Vol. I, p. 265].

In November 1949, GOI appointed the Rural Banking Enquiry Committee to consider, among other terms of reference, the measures that could be immediately adopted for the extension of banking facilities in rural areas. The Committee submitted its report in May 1950. It expressed the view that no universally applicable pattern or machinery could be laid down for all regions; adequate machinery should be developed in conformity with local circumstances, traditions and ideas. The Committee felt that 'the assumption generally made that the State would be able to raise from somewhere vast amounts of capital to be put at the disposal of such machinery' was unrealistic. If the problem of rural credit was to be tackled properly, 'the machinery to be established for the purpose must keep in view the necessity for tapping rural savings in order to obtain the funds necessary for its operations'. The Committee favoured a co-operative credit structure and said: 'In any scheme for the setting up of a sound and efficient system of agricultural finance, sufficient emphasis must be laid on the building of a sound structure of primary institutions - whether co-operative credit societies or multipurpose societies, on the basis of limited liability or unlimited liability, as the case may be. The weakness of the co-operative structure seem to lie mainly in these institutions where it comes directly into contact with the rural people rather than in the superstructure, and more thought and effort should be devoted to their development. No other alternative machinery of a suitable type appear to be available at the primary level and the generally favoured plan now is the establishment of strong multipurpose societies able to employ competent paid staff, for each group of contiguous villages' [Ministry of Finance, 1950, Pp. 49-50]. Regarding long-term credit, the Committee said that the land mortgage banks were the most appropriate agencies for the purpose.

First Five Year Plan 1951-56

The First Five Year Plan emphasised the importance of credit facilities to support the targets of agricultural production. For this purpose, while all the existing agencies, moneylenders, commercial banks, co-operatives and the State agencies had to be utilised, it was necessary to build up and expand the system of Government or co-operative credit so that the implementation could proceed according to schedule. The target should be to bring 50 per cent of the villages and 30 per cent of the rural population within the ambit of primary societies within ten years. The provision of short-term accommodation by the Reserve Bank to the co-operative societies through the state apex institutions and further through the district banks had increased short-term advances substantially between 1946-47 and 1951-52. But the bulk of the facilities had been availed of mostly by the developed apex banks of the two States of Madras and Bombay. Absence of adequately trained staff and capital were the chief handicaps. The Planning Commission provided Rs. 10 lakh to subsidise a part of the expenditure on training of staff. As for capital, it was suggested that the State Governments should subscribe a part of the capital of the apex banks and be represented on their boards of management. The State

Governments could also, if necessary, guarantee repayment of advances from the Reserve Bank to the apex banks.

According to the First Plan, the essential characteristics of short-term finance should be cheapness, elasticity, and promptness. The concessional rate at which the Reserve Bank granted loans helped to reduce the interest rate charged to members. However, the characteristics of promptness and elasticity were far from met because of the rigidity of procedures associated with the whole mechanism of co-operative credit.

Greater emphasis on medium term loans had to be placed and adequate accommodation provided for the purpose. While endorsing the amendment to the Reserve Bank of India Act empowering the Bank to make medium term advances upto a limit of Rs. 5 crore, it was recommended that, as an interim arrangement, an additional provision of Rs. 5 crore should be made to supplement the resources of co-operative banks or other credit agencies. Taking into account this additional provision, the accommodation likely to be available from the Reserve Bank, and the funds found within the co-operative movement, the target for medium term finance, Government and co-operative, at the end of 1955-56 was placed at Rs. 25 crore per annum.

The Plan recommended that the function of long term loans could be best discharged by the Land Mortgage Banks which possessed long-term funds raised by shares, debentures, and fixed deposits. The two main problems were lack of trained personnel and the inability of the borrower to offer land as security. Also a major part of the advances made hitherto by the Land Mortgage Banks were for repayment of old debts. There was also apprehension that land mortgage banks as an instrument of long-term credit would languish due to it limited ability to raise funds through floating of debentures. A provision of Rs. 5 crore was therefore made to be spread over the last three years of the First Plan, to supplement the long-term resources of the co-operative movement.

It was further suggested that: *(i)* The loans should be linked to the programme of increased agricultural production; *(ii)* The loans should reach, by preference, areas and classes not served at present by the co-operative credit system; *(iii)* In planning the distribution of credit among such areas and classes, forms of organisation should be devised so as to fit in with the co-operative type of organisation. *(iv)* Where credit is disbursed in areas already served by the co-operatives, that agency should be utilised as far as possible; *(v)* The Government may purchase part of the debentures issued by Land Mortgage Banks; *(vi)* To implement these recommendations, a detailed plan should be chalked out by the Government of India in consultation with the Reserve Bank and other orgarnisations concerned. It was emphasised that these recommendations were only ‘a first step to a comprehensive and integrated policy of agricultural credit to be evolved as early as possible on the basis of the factual material ..... expected to be furnished by the Rural Credit Survey’ [Planning Commission, 1953, Pp. 234-249].

In December 1953, the Reserve Bank of India Act, 1934 was amended to enable the Reserve Bank to advance medium term loans for periods exceeding 15 months but not exceeding five years on the guarantee of the State Governments, subject to two conditions, namely, that the limit of such loans for each State Co-operative Bank should not exceed its own funds and that the total for all State Co-operative Banks should not exceed Rs. 5 crore. These limits were removed by a further amendment of the Act in 1955.

The progress of the co-operative credit movement during the First Plan period was mixed. The target of covering at least 50 per cent of the villages in the country with agricultural credit societies was achieved by 1955-56, when of the 4.81 lakh villages, 55.10 per cent, were so covered. However, ‘coverage’ of villages in some States was only nominal and did not always mean that the societies were functioning effectively. The number of agricultural credit societies increased from 1.08 lakh in 1951-52 to 1.60 lakh in 1955-56 (with a membership of 7.8 million) their owned capital rose from Rs. 17.67 crore to Rs. 29.25 crore and working capital from Rs. 45.22 crore to Rs. 79.10 crore. Over 50 per cent of the working capital constituted borrowings from sources other than the deposits of members, which formed barely 8 per cent of the working capital in 1955-56. Fresh advances increased from Rs. 24.21 crore in 1951-52 to Rs. 49.62 crore by 1955-56 as against the First Plan target of Rs. 100 crore to be loaned as short-term credit, loans outstanding increased from Rs. 33.66 crore to Rs. 59.84 crore during the same period and the overdues from Rs. 8.52 crore to Rs. 14.96 crore. The medium term loans advanced amounted to Rs. 15 crore in 1955-56 as against the First Plan target of Rs. 25 crore. The bulk of loans (over 70 per cent) were advanced for undertaking improvements in agricultural production. Nearly 70 per cent of the loans were taken for a period of one year, 19 per cent for one to three years, while the rest were taken for periods exceeding three years.

The number of central Land Mortgage Banks increased from 6 in 1951-52 to 9 in 1955-56 while the primary Land Mortgage Banks increased from 289 to 316 during the same period. Fresh advances increased from Rs. 2.51 crore to Rs. 2.83 crore by central Land Mortgage Banks and from Rs. 1.30 crore in 1951-52 to Rs. 1.74 crore in 1955-56 by primary Land Mortgage Banks. Outstanding loans increased from Rs. 8.05 crore to Rs. 13.08 crore and overdues from Rs. 6.96 crore to Rs. 10.51 crore. The percentage of overdues to outstandings rose from 0.4 per cent to 1.9 per cent in central Land Mortgage Banks and from 1.4 per cent to 1.8 per cent in primary Land Mortgage Banks [Reserve Bank of India, 1958, Pp. 16-44].

Report of the Committee of Direction - All India Rural Credit Survey. 1954

In the meanwhile, the RBI appointed a Committee of Direction to direct an all-India Rural Credit Survey. The survey was conducted during November 1951 to July 1952. It showed that, during that year, the private credit agencies taken together (excluding commercial banks) supplied 93 per cent of the total amount borrowed by cultivators. The combined contribution of Government and the co-operatives was about 6 cent of the total, while that of commercial banks was less than one per cent. The estimated percentages of borrowings by cultivators from the different agencies are reproduced in Table 1 [Reserve Bank of India, 1954, Vol. II, p. 167]

TABLE 1. BORROWINGS BY CULTIVATORS FROM DIFFERENT AGENCIES, 1951-52

Credit Agency	Per cent
Government	3.3
Cooperatives	3.1
Commercial Banks	0.9
Relatives	14.2
Landlords	1.5
Traders and Commission Agents	5.5
Agriculturist Moneylenders	24.9
Professional Moneylenders	44.8
Others	1.8
Total	100.0

Source: *All India Rural Credit Survey-Report of the Committee of Direction, Vol. II, General Report,* 1954, Reserve Bank of India. Bombay.

Of the total borrowings by cultivators, roughly 50 per cent was for family expenditure, 28 per cent for capital expenditure on the farm, and 10 per cent for current farm expenditure. The rest was for non-farm business expenditure, and other purposes. The borrowings of big, large, medium and small cultivators, according to different credit agencies, showed that relatively larger proportions of the borrowings of big and large cultivators were from institutional agencies. The dependence of the medium and small cultivators on private agencies was much greater in that order.

Based on these findings, the Committee recommended an integrated scheme of reorganisation of the system of rural credit founded on three fundamental principles, viz., (a) State partnership at different levels, (6) full coordination between credit and other economic activities, and (c) administration through fully trained and efficient personnel, responsive to the needs of the rural people. Institutional development on the basis of State partnership was to extend to (i) cooperative credit, (ii) cooperative economic activity, especially processing and marketing, (iii) storage and warehousing and (iv) commercial banking as represented by the important sector of State associated banks.

The main lines of reorganisation and development recommended by the Committee as part of integrated scheme of rural credit were as follows:

(a) Financial, administrative and technical strengthening of state cooperative banks at the apex level; similar strengthening at the district level by either establishing branches of state cooperative banks or expansion and consolidation of central banks; the maximum possible coordination of both these categories with land mortgage banks; the organization of new central and primary land mortgage banks. At the primary base, gradually establishing larger-sized primary credit societies supplying not only agricultural credit but eventually also rural industrial credit; institution of devices for utilizing the primary credit structure for meeting to a limited extent, the consumption needs of agricultural labourers, handicraftsmen, etc., besides those of the member cultivators. (b) The progressive organization, on a cooperative basis, of marketing and processing with the needed financial administrative and technical assistance from the State, and the development of storage and warehousing through State partnered organizations. (c) The progressive organization, on a cooperative basis, of as large a sector of economic activity as possible, e.g., farming, irrigation, transport, milk supply, dairying, livestock-breeding, cottage industries, etc., with financial, administrative, and technical assistance from the State. (d) Establishing a State the Bank of India, through the amalgamation of the Imperial Bank and certain State-associated Banks with major State participation in the new and enlarged institution. (e) The organization by a Central Committee for Cooperative Training all India, regional, and State-wise, for personnel of both cooperative departments and cooperative institutions [Reserve Bank of India, 1954, Vol. II, Pp. 533-534]. Besides the State Governments and the Planning Commission, the main agencies responsible for the reorganization were to be the RBI; the Ministry of Food and Agriculture of the Government of India and, associated with it, the National Cooperative Development and Warehousing Board, the all-India Warehousing Corporation and the State Warehousing Corporations; the State Bank of India; the Central Committee for Cooperative Training, and finally the Cooperative Movement itself.

The Committee proposed the institution of certain funds for the orderly financing of the reorganisation and development proposed. These were:

(1) Under the Reserve Bank of India

(a) The National Agricultural Credit (Long-term Operations) Fund: An annual contribution of not less than Rs. 5 crore, to be reviewed at the end of five years. In addition an initial nonrecurring contribution of Rs. 5 crore. Out of these funds, the Reserve Bank was to make (i) long-term loans to State Governments for the purpose of their subscribing, directly or indirectly, to the share capital of cooperative credit institutions supplying mainly rural credit; (ii) medium-term loans to state cooperative banks and through them to central cooperative banks and societies; and (iii) long-term accommodation to land mortgage banks, by way of direct loans and by purchase of the whole or part of their special development debentures.

(b) The National Agricultural Credit (Stabilisation) Fund: An annual contribution of not less than Rs. 1 crore; the Fund to be utilized for granting medium-term loans to state cooperative banks, etc., to assist the latter to tide over serious short-term credit overdues on account of famine, drought, etc.

(2) Under the Ministry of Food and Agriculture

The National Agricultural Credit (Relief and Guarantee) Fund: Rs. 1 crore annually to be utilised by the Ministry for giving grants by way of relief to cooperative credit institutions, through the State Governments concerned, for writing off irrecoverable arrears arisen due to widespread or chronic famine beyond the control of the cooperative institutions. Relief from the fund was to be given conditional on the State Governments making a stipulated contribution for the same purpose from a corresponding Agricultural Credit (Relief and Guarantee) Fund maintained by them.

(3) Under the National Cooperative Development and Warehousing Board

A sum of Rs. 5 crore should be granted to the Board for instituting (a) the National Cooperative Development Fund and (6) the National Warehousing Development Fund. Long term loans were to be made from the National Cooperative Development Fund to the State Governments to enable them to participate in the share capital of cooperative societies undertaking such activities as processing, marketing, milk supply, dairying, etc. Funds from the National Warehousing Board were to be utilised for the development of storage, warehousing, and distribution.

(4) Under the State Bank of India

An 'Integration and Development Fund' with an initial contribution of Rs. 50 lakh and the diversion of the dividends earned by the Government and the Reserve Bank on their shares in the institution, to meet the net additional cost to the State Bank of India in the programme of branch expansion to the rural areas.

(5) Complementary funds to be provided under each State Government for the creation of the (i) State Agricultural Credit (Relief and Guarantee) Fund, (ii) State Cooperative Development Fund and (iii) in collaboration with the Central Cooperative Banks, the Agricultural Credit (Stabilisation) Fund.

The Committee prescribed a structure of cooperative credit to be established in the country. At the apex level in each State, there was to be a State Cooperative Bank, a Central Land-Mortgage Bank, and a State Cooperative Marketing Society. At the district level, there was to be preferably a District Central Cooperative Bank or a branch of a State Cooperative Bank, a primary Land Mortgage Bank, and a District Marketing Society. As a transitional measure, where central banks or branches of apex cooperative banks were not functioning, Urban Cooperative Banks were to finance rural societies. The primary structure was to compose of large-sized primary agricultural credit societies, primary land mortgage banks, grain banks, and primary marketing societies. The Committee disapproved of the idea of Agricultural Credit Corporations being set up by State Governments and recommended that the State Bank of India should help in the financing of individual cooperative marketing and processing societies.

The Committee recommended that the issue of Government *taccavi* loans for production and land improvement purposes should be strictly limited, subject to certain exceptions of a transitional nature, to periods of widespread distress such as famine, scarcity, floods, etc. Government loans for specific purposes, at concessional rates of interest, should be advanced through cooperative institutions.

Second Five Year Plan, 1956-61

The main proposals of the RCS were accepted by the RBI and the Government. The State Bank of India was established by an Act of the Parliament in 1955. The Reserve Bank of India Act was amended again in 1955 to provide for the establishment of two funds, namely the National Agricultural (Long-term Operations) Fund and the National Agricultural Credit (Stabilization) Fund. The National Agricultural (Long-term Operations) Fund was created in February 1956 with an initial contribution of Rs. 10 crore. With an annual contribution of Rs. 5 crore, the Fund was to have a capital of Rs. 35 crore by 1960-61. From this Fund, loans were to be advanced to the States to enable them to subscribe to the share capital of cooperative credit institutions. The RBI could also give long-term accommodation from this Fund to central Land Mortgage Banks provided that such debentures were fully guaranteed by the State Governments as to the repayment of principal and payment of interest. Medium term loans could also be made out of the Long-term Operations Fund. The National Agricultural Credit (Stabilisation) Fund was provided with an initial contribution of Rs. 1 crore for the year ended June 30, 1956.

Another fund, known as the National Cooperative Development Fund was to be established by the Government of India, from which States would be able to borrow for subscribing to the share capital of non-credit cooperative institutions.

The recommendations of the RCS formed the general base of the Second Five Year Plan proposal in this area. The principal targets during the Second Plan period were the setting up of 10,400 large-sized primary credit societies; short-term credit to reach Rs. 150 crore by 1955-56; medium term credit to Rs. 50 crore and long-term credit to Rs. 25 crore. Membership of cooperative credit societies was proposed to be raised from the then less than 6 million to about 15 million.

In its scheme for reorganisation of rural credit the RCS had recommended the formation of large-sized credit societies meeting both the credit and non-credit needs of the agriculturists. The general pattern of organisation contemplated in the Second Plan was to have a membership of about 500, the liability of each member being limited to five times the face value of the capital subscribed by him. The society would have a minimum share capital of about Rs. 15,000 and would serve a group of villages providing, wherever possible, a total annual business of about Rs. 1.5 lakh. A further recommendation in the Plan was that the rural credit societies, whether already existing or established afresh were to be affiliated to the primary marketing society serving a man& area. Crop loans for agricultural operations upto approved limits were to be given by the credit societies and linked to the marketing of the crop by the primary marketing societies. Members of credit societies could be persuaded to agree in advance to market their produce through the primary marketing societies.

The Second Plan had not provided financial assistance for revitalisating and strengthening small credit societies. A Conference of State Ministers for Cooperation held in July 1956 at Mussoorie called for such a provision. Hence in. January 1957, Government indicated that the programmes of cooperative development for 1957-58 should include schemes for strengthening and revitalising existing small societies and for establishing new ones. The Government of India would share the cost of any temporary subsidies towards working expenses given to small-sized credit societies. The Central assistance was to be for a period of three years only. In September 1957, the Government of India indicated that they considered the organisation of new small sized societies important and these should, therefore, form part of the cooperation programme in the Second Five Year Plan. The Government of India recommended a subsidy between Rs. 120 and Rs. 150 per year for each society for a period of three years which would be shared equally between the Central and the State Governments. The subsidy was to be given to such small societies as were taken up for revitalisation and as would become economic units at the end of about three years [Ministry of Community Development and Cooperation, 1960, p. 61].

By 1960-61 there were 212,129 primary agricultural credit societies with a membership of over 170 lakh as compared to 159,939 societies with about

78 lakh members in 1955-56. Loans advanced by primary agricultural credit societies reached Rs. 202.75 crore in 1960-61 as against Rs. 49.62 crore in 1955-56. Of the loans given during 1960-61, Rs. 182.82 crore were short-term, while Rs. 19.93 crore were for medium term. The performance in respect of short-term loans had exceeded the target of Rs. 150 crore to be achieved by 1960-61, while in respect of medium-tern loans the advances were less than the target of Rs. 50 crore.

The number of central Land Mortgage Banks doubled from 9 in 1955-56 to 17 by 1960-61. Their individual membership rose from 0.91 lakh to 1.86 lakh, their working capital from Rs. 18.52 crore to Rs. 47.60 crore, while debentures increased from Rs. 14.94 crore to Rs. 36.53 crore. Their advances increased from Rs. 2.83 crore in 1955-56 to Rs. 1 1.62 crore in 1960-61. The long term loans outstanding stood at Rs. 36.61 crore in 1960-61 which exceeded the Second Plan target of Rs. 25.00 crore. The number of primary Land Mortgage Banks increased from 302 in 1955-56 to 463 in 1960-61.

However, there was reportedly widespread diversion of loans. In a study published in November 1965, the Programme Evaluation Organisation (PEO) of the Planning Commission had examined the utilisation of cooperative loans - short-term and medium-term - by cultivators during the period 1958-59 to 1960-61. The study was based on a survey of 1,170 respondents covering a sample of 25 central banks selected from different States. There was widespread diversion of both short-term and medium-tern cooperative loans due to economic exigencies and inadmissibility of certain purposes. In some States, institutional deficiencies such as late disbursement of loans was also responsible. As a result, a significant proportion of the loans went to meet non-productive needs like consumption, other household needs, and repayment of old debts [PEO, 1965, Pp. 184-185].

In the meanwhile, the recommendations of the Planning Commission, following those of the RCS, for the formation of large-sized cooperative societies during the Second Five Year Plan had come up for criticism. The critics recognised the material advantages of the large societies, but had serious doubts about their developing real cooperative spirit and concern for the poor. A Conference on Community Development meeting at Mount Abu in May 1958 recommended that a detailed study should be made both of the large sized and small-sized cooperative societies so as to bring out the financial position regarding the extent of coverage of families, extent of promotion of thrift and extent of credit granted in the villages to the weaker section [PEO, 1959, p.(i)].

Resolution of the National Development Council, November, 1958

However, the NDC, at its meeting on November 8 and 9, 1958 took a more decisive position. It resolved that cooperatives should be organized on the basis of the village community as the primary unit and cooperation should be developed as a peoples' movement. Each village cooperative should draw up a comprehensive programme for increased agricultural production in the village and link it with grant of credit. The cooperative movement should be so developed as to bring within its fold all rural families before the end of the Third Five Year Plan. Cooperative credit should be made available on a liberal scale and on terms suitable to all farmers. Cooperative marketing should be linked with credit and arrangements should be made to collect the surplus agricultural produce from farmers through village cooperatives and marketing societies at assured prices. *Taccavi* loans should be channelled through cooperatives. This would induce villagers to join cooperatives. An essential objective of the cooperative movement should be the inculcation of the habit of thrift and savings. In the national savings movement, cooperatives should function as primary agencies in the rural areas [Ministry of Community Development and Cooperation, 1959, Pp. 47-50].

Working Group on Cooperative Policy, January, 1959.

To consider the administrative and organizational arrangements needed to implement the NDC Resolution, the Ministry of Food and Agriculture constituted a Working Group in November 1958. The Working Group submitted its report in January 1959. It recommended two patterns of organisation: one for general adoption and the other for adoption in special areas; e.g., backward areas and areas in which cooperative societies had been chronically stagnant. Under the first pattern, the village community was to be the basis for primary cooperatives which would provide various services including credit. Besides, separate cooperatives for special groups and economic activities could also be organised. In the second pattern, the village societies were to provide services other than credit, while for the supply of credit, a few village societies were to be brought together into compact credit unions. To bring all rural families into the cooperative fold by the end of the Third Plan, as the NDC desired, the Working Group estimated that 20 million rural families would have to be made members of cooperatives by the end of the Second Plan. This would require credit of Rs. 400 crore in the Second Plan. In fact, the credit target in the Second Plan was only Rs. 200 crore. The question of the rate of interest was a complicated one and the Group recommended that it should be examined by the State Governments so that a clear policy might be laid down.

Following the recommendations of the Conference on Community Development in 1958, the Programme Evaluation Organisation of the Planning Commission had conducted a study of the working of large and small sized cooperative societies. Its findings submitted in April 1959 showed that the large societies did not have a better record than the smaller ones. The small cultivators constituted a smaller proportion of their membership, right in land remained the most important consideration, and discrimination in favour of landowners against tenants persisted. Only in a few cases was the credit limit related to the crop produced and even there little attention was paid to the cost of cultivation or the production requirements of the borrower. In both the large and small sized societies, a smaller percentage of the small cultivators than of the big farmers could secure loans [PEO, 1959, Pp. 22-24].

In May 1959, the Government of India advised the State Governments on the future policy in respect of cooperative development. The salient features of the policy were: (*i*) organization of village cooperatives with the village community as the primary unit and, where necessary, grouping of villages to cover a population of about 1000; (*ii*) no further organization of large-sized credit societies; (*iii*) a target of 20 million members for village cooperatives at the end of the Second Five Year Plan period; (*iv*) the village cooperative to be a service society providing, besides credit, agricultural implements, etc., and assisting in the formulation and implementation of plans for agricultural production; (*v*) drawing up of a large-scale programme of reorganization and revitalization of existing societies and provision of managerial subsidies at Rs. 900 per society spread over not more than five years; (vi) effective linkage of credit with marketing; (*vii*) strengthening of staff of cooperative departments and suitable arrangements for their training; and (*viii*) simplification of cooperative law and procedures.

Report of the Committee on Cooperative Credit, May 1960

The entire question of agricultural cooperative credit came up for consideration at a Conference of State Ministers in charge of Cooperation held at Mysore in July 1959. On its recommendation, the Committee on Cooperative Credit was appointed in September 1959. In its report submitted in May 1960, the committee, pointed out that there was generally no organised agricultural production plan for each village or family as envisaged in the Plans. What existed in each State was a plan drawn up under various heads such as minor irrigation, land development, manures, improved seeds, etc. A dynamic programme of agricultural credit and distribution was needed to enable farmers to take full advantage of these plans and facilities available under them. Among other things, the Committee recommended that the Government policy at the village level should be to route the supply of all credit - cooperative credit, loans for community development programmes, and *taccavi* loans - through only one institutional agency, namely the cooperatives. The arrangements for linking credit with marketing should be strengthened throughout the country, so as to give benefit to farmers of organised marketing and help in the recovery of loans out of sale proceeds of the produce. To meet the cyclical shortfalls in agricultural production, the Committee recommended the constitution and strengthening of the Agricultural Credit Stabilisation Fund at various levels of the cooperative credit structure. With the cooperatives undertaking to finance agriculturists on a much bigger scale, the State Governments should set up Relief and Guarantee Funds, provisions for which should be made in the States' Third Five Year Plan [Ministry of Community Development and Cooperation, 1960, Pp. 199-214].

In October 1960, the Ministry of Community Development and Cooperation communicated to the State Governments the following policy decisions:

(i) Cooperatives should be organized on the basis of the village community as the primary unit. Where villages were too small, the number of villages to be covered by a society could be increased in the interest of viability (subject to a maximum limit of population of 3,000 within a radius of 3 or 4 miles from the headquarter village).

(ii) The broad test of viability should be the ability on the part of a cooperative society to meet the requisite expenses without depending upon financial assistance from government except for a limited period.

(iii) The State may participate in the share capital of primary agricultural credit societies on the following conditions: (a) 60 per cent of members of the society and the central bank to which it is affiliated desire it. (b) The amount to be contributed should not be more than the share capital contributed by members of the society, the maximum being ordinarily Rs. 5,000 and in special cases Rs. 10,000. (c) State participation should as a rule be indirect, i.e., through apex and central banks; (d) The central bank which holds shares in the primary society may nominate one-third of the members of the board of directors subject to a maximum of three.

(iv) The funds required by the State Governments for participation in the share capital of primary agricultural credit societies, other than large sized societies, would be available from the Long-term Operations Fund of the Reserve Bank.

Thus, during the Second Plan period the policy regarding cooperative development was being formulated. While the Plan envisaged the strengthening and setting up of large sized credit societies, by July 1956, the Conference of State Ministers called for schemes for strengthening and revitalising existing small credit societies and for establishing new ones too. By 1958, the formation of large-sized cooperative societies came in for further criticism. In November 1958, the NDC resolved that cooperatives should be organised on the basis of the village community as the primary unit. In May 1959, the State Government were advised to organize village cooperatives with the village community as the primary unit and no further organisation of large sized credit societies. Such village cooperatives were also to act as service societies. But in October 1960, the States were advised that where the villages were too small, the number of villages to be covered by a society could be increased in the interest of viability. Because of these shifts in policy, the district cooperative officials were always in two minds regarding the organisation or reorganisation of societies and often they left the things as they were.

All-India Rural Debt and Investment Survey, 1961-62

In 1962, the RBI undertook a resurvey called the All-India Rural Debt and Investment Survey, 1961-62, to assess changes since the RCS 1951-52. It showed that, over the ten years, borrowings from the cooperatives had increased from 3.1 to 15.5 per cent but that private money lenders still predominated as will be seen from

TABLE 2. BORROWINGS BY CULTIVATORS FROM DIFFERENT AGENCIES, 1951-52 AND 1961-62

Credit Agency	Percentage of Borrowings	
	1951-52	1961-62
Government	3.3	2.6
Cooperatives	3.1	15.5
Relatives	14.2	8.8
Landlords	1.5	0.6
Agriculturist Moneylenders	24.9	36.0
Professional Moneylenders	44.8	13.2
Traders and Commission Agents	5.5	8.8
Commercial Banks	0.9	0.6
Others	1.8	13.9
Total	100.00	100.00

Sources: 1. *All India Rural Credit Survey-Report of the Committee of Direction, Vol. II, General Report,* 1954, Reserve Bank of India,
2. *All-India Rural Debt and Investment Survey, 1961-62,* Reserve Bank of India, Bombay.

There was little change in the purposes of borrowing and household expenditure continued to be the major purpose accounting for almost half of the total.

TABLE 3. PURPOSE OF BORROWING CULTIVATORS NON-CULTIVATORS

(Per cent)

Purpose of Borrowing	Cultivators		Non-Cultivators	
	1951-52	1961-62	1951-52	1961-62
Capital Expenditure on Farm	31.5	22.1	6.0	5.9
Current Expenditure on Farm	10.6	13.5	1.1	1.3
Non-farm Business Expenditure	4.5	6.7	18.5	36.9
Family Expenditure	46.9	46.6	69.9	49.2
Other Expenditure	6.0	7.5	4.5	5.0
More than One Purpose	0.5	3.6	0.1	1.7
Total	100.0	100.0	100.0	100.0

Sources: 1. *All India Rural Credit Survey-Report of the Committee of Direction, Vol. II, General Report,* 1954, Reserve Bank of India,
2. *All-India Rural Debt and Investment Survey, 1961-62,* Reserve Bank of India, Bombay.

Third Five Year Plan, 1960-61 - 1965-66

The Third Five Year Plan envisaged that the membership of primary cooperative societies would increase from 17 million in 1960-61 to 37 million by 1965-66, covering about 60 per cent of the agricultural population. The number of societies was expected to increased from 210,000 to 230,000 so as to serve all the villages in the country. It was estimated that the total amount of short and medium term credit would increase from Rs. 200 crore in 1960-61 to about Rs. 530 crore by 1965-66. Long-term credit (loans outstanding) were expected to rise from Rs. 34 crore to about Rs. 150 crore.

Unfortunately, of about 160,000 primary societies existing at the end of the First Plan, a large proportion were functioning in a dormant or in a poor state. During the Second Plan about 42,000 societies were taken up for revitalisation. The Third Plan provided for the revitalisation of about 52,000 more primary societies.

The Plan visualised a large increase in the internal resources of the cooperative movement at various levels. Thus, the share capital of the primary cooperatives (other than State contribution) was expected to increase from about Rs. 42 crore in 1959-60 to Rs. 85 crore in 1965-66, in central cooperative banks from about Rs. 23 crore to about Rs. 62 crore and in apex banks from about Rs. 9 crore to about Rs. 33 crore. It was also estimated that between 1959-60 and 1965-66, deposits of primary cooperative societies would increase from about Rs. 12 crore to about Rs. 42 crore, of central banks from about Rs. 95 crore to about Rs. 212 crore and of apex banks from Rs. 60 crore to Rs. 142 crore. The number of primary land mortgage banks were expected to increase from 408 in 1959-60 to 672 by 1965-66, the central land mortgage banks having already been set up in almost all the States in the country.

The RBI had played a major role in the building up of the cooperative movement during the first two Plans through its financial supervision, arrangements for training, loans to States for participation in the share capital of cooperative banks, and advances to cooperative banks, its loans outstanding having risen from about Rs. 14 crore in 1955-56 to about Rs. 85 crore in 1959-60. It was expected to play an even larger role in Third Plan [Planning Commission, 1962, Pp. 201-206].

Committee on Takavi Loans and Cooperative Credit, 1962

In the light of the NDC Resolution in November 1958 that *takavi* loans and other facilities should be made available through cooperatives, the Government of India appointed a Committee on *Takavi* Loans and Cooperative credit in July 1961 to (a) examine the existing arrangements in different states for the supply of *takavi* loans; (b) suggest measures - organisational, procedural and administrative - to route *takavi* loans through cooperatives; (c) examine the institutional structure of cooperatives and to suggest changes, if any, to facilitate supply of *takavi* loans through cooperatives; and (d) examine whether any guarantee of subsidy to cooperative institutions for undertaking the issue and recovery of *takavi* loans was necessary. The Committee submitted its report on August 31, 1962 [Ministry of Community Development and Cooperation, 1962, p. 18].

The Committee recommended that in those States where the short-term and medium-term credit structure of the cooperatives was sufficiently developed, the State Government should discontinue issuing short and medium-term *takavi* loans and entrust the work exclusively to the cooperatives. In the States where cooperatives had lagged behind, such measures should be taken only in cooperatively developed districts or areas. In those States where the land mortgage banking structure had gained considerable strength the Government should discontinue issuing of long-term *takavi* loans and entrust the work exclusively to the land mortgage banks. Government funds should be routed through the State Cooperative Banks, preferably in the form of medium tern loans. The rate of interest should be the same as that charged by the Reserve Bank of India on the medium-term advances made by it to the State Cooperative Banks.

Informal Group on Institutional Arrangements for Agricultural Credit, RBI, December 1964

Much progress had not occurred in the cooperative sector in some parts of the country despite the efforts made during the first two Five Year Plan periods. In certain areas cooperative credit had ceased to expand and even begun to show signs of contraction and, in others, progress was still slow. Hence, in May 1964, the RBI appointed an Informal Group on Institutional Arrangements for Agricultural Credit [Reserve Bank of India, 1964, Pp. 1-2]. The Group submitted its report in December 1964. The Group found wide variations among the

States. The States with successful cooperative performance (Category A) included Maharashtra, Gujarat, and Madras, although Maharashtra faced the problem of unsatisfactory repayment, Gujarat of halting coverage, Madras of unsatisfactory resource position and operation of loan policies. The performance was most unsatisfactory (Category C) in the eastern region comprising Assam, Bihar, Orissa, West Bengal, Manipur and Tripura and in Rajasthan. There were long-standing overdues with a large number of dormant societies, ineffective central banks, shortage of personnel to man the cooperative structure, and lack of non-official cooperative leadership. The performance in the remaining States (Category B) was found to be not unsatisfactory although in some States the loan policies had as yet to be oriented to production needs; the cooperative banks needed to make all-out efforts to raise resources commensurate with the growing requirements of credit; the State Governments had to take action to support cooperatives in various directions; there was inadequacy in the machinery for supervision; the recovery position was unsatisfactory; and there was need for all-round improvement in some areas.

The Group felt that there was no alternative to the cooperative agency for providing institutional agricultural credit, that the pattern of organisation it should follow was the three-tier structure, and that the framework of agreed policies in this sphere, if faithfully implemented could help ensure adequate credit facilities for agricultural production. Major gaps related to the link with marketing, the smooth flow of credit, and the reorientation of policies and procedures of cooperative long-term credit institutions for expansion of the volume of their operations and assigning to them a specific role in the State programmes for agricultural development.

The lines of remedial action recommended by the Group included revitalisation of the cooperative credit structure from the primary level onwards; liquidation of all dormant societies which were beyond redemption; provision of credit to non-defaulting cultivators of such dormant societies through the central or apex banks or their branches; amalgamation of non-viable central banks; building up of stabilisation funds to the required levels; statutory provisions for creating a charge on the land of the defaulting cultivators; coercive processes for recoveries of outstanding loans; reorientation of loan policies; and mobilisation of deposit resources on a larger scale. Supplementary arrangements for provision of agricultural credit during the transitional period, either through the Food Corporation of India, by *takavi* loans or through commercial banks was also suggested. The Group also recommended the setting up of Agricultural Credit Corporations in the States of the eastern region and Rajasthan as an interim measure.

The RBI conducted a survey in 12 selected districts in the country during 1963-64 to 1965-66, on the role of cooperative credit in increasing farm production (Report published in June 1974). The survey showed that most of the member-cultivators of cooperative societies were in a comparatively better economic position as judged by the size of cultivated holdings, owned area, irrigation facilities, and bigger cash receipts. Consequently, member-cultivators were more creditworthy and could borrow more than the non-members. However, the main sources which financed capital expenditure in agriculture of members and non-members both were their own funds and borrowings from private credit agencies. In fact, in eight of the selected districts, borrowings from credit agencies other than cooperatives accounted for larger financing of capital expenditure of members than advances from cooperatives. In financing the current farm expenditure of members, which was found to be higher than that of non-members in all the selected districts, the role of cooperatives was only a shade better. Thus, barring a few exceptions, cooperative credit did not make any distinct impact on farm business of members as compared to that of non-members. The share of cooperative credit in the total credit was small to moderate in most districts and a considerable part of it was diverted to unproductive purposes. Cooperative credit was not timely, adequate and effective in increasing farm production [Reserve Bank of India, 1974(a), Pp. 73-74].

Progress of Cooperative Credit during the Three Plan Periods, (1951-52 - 1965-66)

The All India Rural Credit Review Committee, appointed by the RBI in 1966, submitted its report in July 1969 wherein it made an assessment of the progress of cooperative credit during the three Plan periods. It is summarised in Table 4.

TABLE 4. PROGRESS OF COOPERATIVE CREDIT. 1951-52 - 1965-66

Particulars	Unit	1951-52	1960-61	1965-66
I. Agricultural Credit Societies				
Number	lakh	1.08	2.12	1.92
Membership	lakh	48.00	170.00	261.00
Share Capital	Rs. crore	9.00	58.00	115.00
Deposits	Rs. crore	4.00	15.00	34.00
Short & Medium-term Loans Advanced	Rs. crore	24.00	203.00	342.00
Loans Outstanding	Rs. crore	34.00	218.00	427.00
Overdues	Rs. crore	9.00	44.00	125.00
Overdues to Outstandings	Per cent	26.47	20.18	29.27
II. Central Cooperative Banks				
Number	-	509.00	390.00	346.00
Share Capital	Rs. crore	5.00	39.00	76.00
Deposits	Rs. crore	38.00	112.00	237.00
Loans Advanced	Rs. crore	106.00	354.00	545.00
Loans Outstanding	Rs. crore	36.00	220.00	438.00
Overdues	Rs. crore	5.00	27.00	87.00
Overdues to Outstandings	Per cent	13.88	12.27	19.86
III. State Cooperative Banks				
Number	-	16.00	21.00	22.00
Share Capital	Rs. crore	2.00	18.00	29.00
Deposits	Rs. crore	21.00	72.00	147.00
Loans Advanced	Rs. crore	55.00	258.00	408.00
Loans Outstanding	Rs. crore	20.00	167.00	307.00
Overdues	Rs. crore	3.00	7.00	9.00
Overdues to Outstandings	Per cent	15.00	4.19	2.93
IV. Central Land Development Banks				
Number	-	6.00	17.00	18.00
Number of Primary Land Development Banks	-	289.00	463.00	673.00
Loans Advanced	Rs. crore	3.00	12.00	56.00
Loans Outstanding	Rs. crore	8.00	36.00	163.00
Overdues	Re. crore	0.01	1.00	3.00
Overdues to Outstandings	Per cent	0.38	2.78	1.84

Source: *Report of the All-India Rural Credit Review Committee,* 1969. Reserve Bank of India, Bombay. Figures for 1965-66 updated.

There was an increase in the number of primary agricultural credit societies from 1.08 lakh in 1951-52 to 2.12 lakh in 1960-61. Subsequent reorganization including amalgamation to form viable societies brought the number down to 1.92 lakh in 1965-66. The membership increased from 48 lakh in 1951-52 to 261 lakh by 1965-66 but did not reach the Plan target of 370 lakh. The loans advanced increased from Rs. 24 crore in 1951-52 to Rs. 342 crore by 1965-66 but again did not reach the Plan target of Rs. 530 crore. Moreover, the overdues had tended to increase; the proportion of overdues to outstanding, which was 26.47 per cent in 1951-52, had come down to 20.18 per cent in 1960-61, rose steeply to 29.27 per cent in 1965-66.

As a result of rationalizing the structure of Central Cooperative Banks so as to have only one Central Bank in each revenue district, their total number was brought down from 509 in 1951-52 to 346 in 1965-66. The overdues position improved slightly up to 1960-61 but deteriorated thereafter. Trends in State Cooperative Banks were similar.

The Central Land Development Banks (earlier called Land Mortgage Banks) were established in States where they did not exist, and many new primary land development banks were also established. The total loans advanced by the Central Land Banks rose from Rs. 2.5 crore in 1951-52 to Rs. 12 crore in 1960-61 and thereafter to Rs. 56 crore in 1965-66, although it fell much short of the Third Plan target of Rs. 150 crore [Reserve Bank of India, 1969 Pp. 138-142].

The Agricultural Refinance Corporation later called the Agricultural Refinance and Development Corporation (ARDC), proposed in the Third Plan, was established in July 1963 with an authorised share capital of Rs. 25 crore and a paid-up share capital of Rs. 5 crore, a major portion of which (i.e., Rs. 2.97 crore) was taken up by the RBI. Scheduled Commercial Banks were also made its share-holders. The corporation was set up primarily as a refinancing agency providing medium-term and long-term finance to State Cooperative Banks, Central Land Development Banks, and Scheduled Commercial Banks for financing reclamation and preparation of land, soil conservation, mechanised farming and development of animal husbandry, dairy farming, pisciculture, poultry-farming, etc.

A policy decision was taken in June 1964 that State Governments should discontinue issue of production *taccavi* direct to individuals and to accept the cooperatives as the normal agency for provision of such credit. State Governments were requested to work out a phased programme for implementing the policy.

Annual Plans Period, 1966-67 to 1968-69

Between the Third and the Fourth Five Year Plan, there was a period of three years 1966-67 to 1968-69 when only annual plans were made, With the introduction of the high-yielding varieties beginning with the kharif of 1966, the demand for credit for the purchase of seeds, fertilisers, etc., was expected to rise. However, because of drought conditions during 1965-66 and 1966-67, the Central Cooperative Bank and primary agricultural credit societies in several States remained in a state of stagnation. The position of overdues and operational efficiency in a few central banks deteriorated so much that they could no longer serve as effective channels for the flow of credit from higher financial agencies. For the first time, in 1965-66, the RBI was called upon to sanction medium-term credit limits (conversion) to some of the State Cooperative Banks by drawing on its National Agricultural Credit (Stabilisation) Fund to help the cooperative credit societies to convert overdue short-term loans into medium-term loans in areas affected by the drought.

The progress of the cooperative credit advances in the three years was as follows (Table 5):

TABLE 5. ADVANCES BY COOPERATIVES, 1965-66 AND 1968-69

Institutions	Year	Loans Advanced	Loans Outstanding	Overdues	Overdues to Outstanding
			(Rs Crore)		(%)
Primary Agricultural Credit Societies	1965-66	342	427	125	29.27
	1968-69	503	619	214	34.57
Central Cooperative Banks	1965-66	545	438	87	19.86
	1968-69	823	641	173	26.99
State Cooperative Banks	1965-66	408	307	9	2.93
	1968-69	667	459	23	5.01
Central Land Development Banks	1965-66	56	163	3	1.84
	1968-69	144	395	4	1.01

Source: *Statistical Statements Relating to the Cooperative Movement in India*, Reserve Bank of India, Bombay. (relevant years)

In the meanwhile, the Administrative Reforms Commission had appointed a Working Group on Cooperation. In its report submitted in June 1968, the Group recommended the establishment of a National Bank for Agricultural and Cooperatives by a statute of the Parliament to perform, among other things, the functions being performed by the Agricultural Credit Department of the RBI *vis-à-vis* the cooperative institutions.

Report of the All-India Rural Credit Review Committee, 1969

As mentioned earlier, the RBI had appointed the All-India Rural Credit Review Committee in July 1966. The Committee submitted its Report in July 1969. Referring to the marked increase in the cooperative credit between 1951-52and 1967-68, the Committee pointed to the lag in dispersal of credit in the cooperatively backward States of Assam, Bihar, Orissa, West Bengal, Rajasthan and Jammu and Kashmir. There were weaknesses in a number of banks and societies, in other parts of the country too, of low deposits, high overdues and, general lack of business-like management. The Integrated Scheme of Rural Credit recommended by the Committee of Direction of the RCS in 1951 -52, with State participation at every level of the cooperative structure, had also not been pursued or implemented vigorously in all the States. Corrective action in the cooperative credit structure was necessary for the reorganisation of the non-viable primary credit societies into economically viable ones; rehabilitation of weak central cooperative banks; administrative and policy measures for checking overdues; direct financing of cultivators by central banks and of societies by apex banks in areas where they were weak or dormant; streamlining of the lending policies and procedures of cooperative institutions; and setting up of Agricultural Credit Corporations in cooperatively backward States.

The Committee emphasised that credit must be made more easily accessible to the small farmers by granting to them loans equal to the full entitlement of the crop-wise scales of finance; and by preferential treatment vis-a-vis large farmers in the rates of interest charged, contribution to the share capital of the cooperatives, dispersal of loans in kind and at appropriate times, etc.

Special pilot programmes called the Small Farmers Development Agencies were recommended, one in each State, to identify the problems of small but potentially viable farmers and help them with inputs, services and credit. The Government of India would provide the necessary funds.

With the likely increase in demand for long-term credit, the Committee recommended that the Land Development Banks should obtain specific details of the land improvement schemes for which credit was sought As far as possible a 'project' approach should be adopted. Regional differences in soil conditions, ground water resources, etc., should also be gone into. In conjunction with the Agricultural Credit Department of the RBI, the ARDC should function as the coordinator, adviser, and financier of the long-term credit structure. Financial resources to the tune of Rs. 50 crore from the National Agricultural Credit (Long-term Operations) Fund and Rs. 140 crore from the Fourth Plan should be placed at the disposal of the ARDC during the Fourth Plan period.

With the advent of the new technology in agriculture, the Committee estimated that the demand for credit would increase, by the end of the Fourth Plan, to Rs. 2,000 per annum of short-term credit, and Rs. 500 crore and Rs. 1,500 crore of medium-term and long-term credit, respectively. As the cooperative credit structure would not be able to meet the entire demand, the Committee recommended an active and positive role for commercial banks in the field of agricultural credit. The direct financing by the commercial banks should be confined, in the first instance, to cultivators of certain categories, such as those engaged in raising high yielding varieties of foodgrains or other remunerative crops, hybrid seed producers, and those covered by special development projects. Production credit to cultivators could be dispensed by the banks in collaboration with agencies or firms engaged in the processing of agricultural commodities or the production/distribution of inputs like fertilisers. The commercial banks could also collaborate with State Electricity Boards and firms engaged in the sale of agricultural machinery.

Taccavi loans could be provided in the short run to assist current agricultural needs in those areas where the establishment/ reactivisation of the cooperatives or the induction of commercial banks was likely to take time. However, this should be a temporary and limited arrangement.

The Committee recommended the creation, within the RBI, of an Agricultural Credit Board to ensure more effectively the formulation, review and modification of the Bank's policies in the sphere of rural credit.

Most of the Committee's recommendations were accepted by the Government and included in the Fourth Five Year Plan. In July 1969, the largest fourteen commercial banks were nationalised and their lending policies and procedures were oriented to meet the requirements of the priority sectors of the economy. Agriculture, particularly the small farmer, was one of the priority sectors.

The predominant role played by the cooperative movement in the supply of institutional credit thus lasted from 1951-52 to 1968-69. Loans advanced by primary agricultural credit societies increased from Rs. 24 crore in 1951-52 to over Rs. 500 crore by 1968-69. However, the weaknesses in the movement continued, despite all the efforts to reorganize and strengthen the cooperative credit institutions. With the advent of the new technology in agriculture calling for timely supply of credit and inputs, the nationalisation of commercial banks and the recommendations of the All-India Rural Credit Review Committee for the setting up of small farmers agencies, there was a shift in emphasis from cooperatives only to a multi-agency approach.

Fourth Five Year Plan, 1969-74

The Fourth Plan noted the significant increase in institutional rural credit. Over 30 per cent of the borrowings by cultivators were from institutional sources. Accepting the All-India Rural Credit Review Committee's estimates of requirements of rural credit, the Plan envisaged that cooperative credit would expand to Rs. 750 crore for short and medium-term credit and Rs. 700 crore for long-term credit during the Fourth Plan period. This would require rectification of some aspects of the working of the cooperative credit institutions, such as: (a) acceleration of the pace of reorganistion of the cooperative short and medium-term credit structure so as to place it on a more viable footing; (b) rehabilitation and reorganisation of weak district cooperative banks which were acting as bottlenecks in the flow of adequate cooperative credit; (c) systematic efforts towards reduction of overdues; (d) substantial increase in deposits at various levels; and (e) liberalisation of loan policies.

Referring to the recommendations of the All-India Rural Credit Review Committee to orient the policies and procedures of credit cooperatives and Land Development Banks in favour of small cultivators, the Plan suggested that (*i*) the needs of small cultivators should be met on a priority basis by primary credit societies; (*ii*) the larger cultivators could contribute a relatively higher proportion of their borrowings towards the share capital of the societies; (*iii*) for an effective implementation of the crop-loan system, the credit limit statements of small farmers should be handled separately from the rest; (*iv*) liberalisation of loaning policies of Land Development Banks in respect of valuation of landed property offered as security, issue of joint loans for groups of small cultivators, operational and economic viability of the proposed investment, etc.; and (*v*) encouraging bigger cultivators with early repaying capacity to avail of medium-term loans, so that a larger volume of long-term credit could be made available to small farmers.

As regards long-term credit, the Plan recommended a review of the lending policies and procedures of Land Development Banks. The primary agricultural credit societies could be utilised on a pilot basis to act as agents of central Land Development Banks for scrutiny of applications, disbursement of credit, and supervision and recovery of loan instalments of small farmers.

In July 1969, fourteen leading commercial banks were nationalised and, among other things, were directed to provide credit for agriculture on a priority basis. It was suggested that each district in the country should be allotted to one bank called the 'lead' bank which would survey the resources and potential for banking development in that district, offer advice to small borrowers, particularly cultivators, assist other primary lending agencies, and maintain liaison with Government and quasi-government agencies. By the end of the Fourth Plan, direct lending to farmers by the banks was expected to increase to Rs. 400 crore. For each district, a credit plan would be prepared and integrated with other development activities. Within this credit plan, the cooperative sector and the commercial banks would have to work in close collaboration [Planning Commission, 1970, Pp. 139-142 and 217-221].

Following the recommendations of the All-India Rural Credit Review Committee, 1969, the Plan envisaged the setting up of Small Farmers' Development Agency (SFDA) in 45 selected districts in the country to assist small holders with holdings of two hectares or less. The SFDA was to identify the problems of the small farmers in its ma, prepare appropriate programmes, help to ensure availability of inputs, services and credit, and evaluate the progress from time to time. In the Plan, direct financial support of Rs. 115 crore was provided for the SFDA. In the 45 SFDA projects, the short-term credit needs were estimated to be of the order of Rs. 90 crore per annum and the long and medium-term credit needs approximately Rs. 170 crore during the Plan period. The Plan also recommended 40 projects for the provision of supplementary occupations and other employment opportunities for sub-marginal farmers, agricultural and landless labourers and allowed an annual short-term credit of about RS. 10 crore; medium and long-term credit was Rs. 30 crore during the Plan period. Thus the total institutional support expected in the long run for the two sets of projects was of the order of Rs. 300 crore, comprising short-term credit of Rs. 100 crore per annum and medium and long-term credit of Rs. 206 crore for the total duration of the projects.

Progress of Agricultural Finance During the Fourth Plan, 1969-74

As against the Fourth Plan target of dispensing Rs. 750 crore of short and medium term loans and Rs- 700 crore of long term loans, the cooperative credit institutions issued Rs. 760 crore of short and medium term loans, and h n s outstanding with central Land Development Banks amounted to Rs. 914 crore by the end of 1973-74 (Table 6):

TABLE 6. ADVANCES BY COOPERATIVES, 1968-69 AND 1973-74

Institutions	Year	Number	Loans Advanced	Loans Outstanding	Overdues	Overdues to Outstanding
				(Rs Crore)		(%)
Primary Agricultural Credit Societies	1968-69	1.68 lakh	503	619	214	34.57
	1973-74	1.54 lakh	763	1055	443	41.99
Central Cooperative Banks	1968-69	341	823	641	173	26.99
	1973-74	341	1249	1163	376	32.33
State Cooperative Banks	1968-69	25	667	459	23	5.01
	1973-74	26	1204	706	63	8.92
Central Land Development Bank	1968-69	19	144	395	4	1.01
	1973-74	19	147	914	42	4.60

Source: *Statistical Statements Relating to the Cooperative Movement in India,* Reserve Bank of India, Bombay. (relevant years)

The proposals to accelerate the pace of reorganising the primary credit societies so that there would be about 1.20 lakh viable societies by the end of the Fourth Plan did not materialise. The overdues position of both the primary societies and the central cooperative banks got aggravated in the same period. However, the small cultivators got more attention; by 1973-74,nearly 25 per cent of the loans disbursed were to cultivators holding not more than 2 hectares.

With the directions given to the nationalised banks to pay greater attention to agricultural credit, the Fourth Plan's recommendation for setting up Agricultural Credit Corporations in cooperatively backward States was not implemented. Instead, in 1970, the RBI formulated a scheme under which in areas where the central cooperative banks were weak, the commercial banks were to finance primary agricultural credit societies as a transitional measure. They would advance short and medium-term credit only through the primary credit societies while they could provide long-term credit directly. In order to pay more specific attention to small farmers, separate credit limit statements were to be prepared for members cultivating less than 1.2 hectares. For the purpose of the scheme, each branch of a commercial bank was to adopt 10 societies within a radius of 10 to 15 miles.

Expert Group on State Enactments having bearing on Commercial Banks lending to Agriculture, 1970

With the responsibility of supplying agricultural credit, it was necessary to extend to commercial certain rights and privileges in regard to security, recovery of loans, etc., available to the cooperatives. To examine the question, the RBI appointed in September 1969 an 'Expert Group on State Enactments having a bearing on Commercial Banks lending to Agriculture'. The Group, in its Report submitted in December 1970, stated that while the interests of the institutional credit agencies financing agriculture should be safeguarded *vis-à-vis* a private agency, all institutional agencies should be placed on an equal footing. The general principle of priority as between two institutional credit agencies in regard to loans based on common security should be adumbrated in the Transfer of Property Act, 1882. Thus, while the cooperatives could continue to enjoy the facility of first charge/ mortgage *vis-à-vis* a private credit agency say, the money lender, their right of priority interest, *vis-à-vis* other institutional agencies such as commercial banks would be with reference to the point of time of creation of such charge/mortgage. However, even among institutional credit agencies, the one lending term loans for development purposes would have priority over the other lending for production credit. For instance, where crop loans were granted by a commercial bank and term loans for development purposes were granted subsequently by another institutional agency, say, a land development bank, against the same landed security, priority would accrue to the land development bank.

To facilitate financing of credit societies by commercial banks under the scheme referred to Above, the Group recommended the making of statutory provisions for (*i*) enabling the societies to borrow from the commercial banks, (*ii*) settlement of disputes through the Registrar of Cooperative Societies, (*iii*) the right of the commercial banks to inspect borrowing societies and to proceed against defaulting members of indebted societies directly, in case the society failed to take action, etc. The intention was to place a commercial bank financing a society more or less on the same position/status as of a central cooperative bank.

In December 1970, the RBI issued a circular letter to the commercial banks spelling out guidelines for the financing of agriculture. The banks were advised to adopt an "area approach" for lending for agriculture without any overlapping of efforts and resources by two or more banks. Short-term loans for crop-raising should be based on rational scales of financing taking into account input requirements and off-farm income and resources available to the cultivator. For medium-term loans, the norms should relate to the income generating potential of the proposed investment rather than to the size of the holding. The scheme was initially introduced in 49 districts in 5 States. It was extended to 71 districts of 8 States by the end of June 1974.

Report of the All-India Debt and Investment Survey, 1971-72 - Financing of the Primary Agricultural Credit Societies by Commercial Banks

In November 1972, the Steering Committee of the All-India Debt and Investment Survey (1971-72), RBI, made an assessment of the working of the scheme of bank financing of primary credit societies in the five States in which the scheme was initially introduced. It was found that although the commercial banks did provide the necessary finance to the primary agricultural credit societies transferred to them, they did not pay much attention to the revitalisation of the societies and professionalisation of their management.

During the Fourth Plan period (1969-74), the commercial bank finance to the agricultural sector increased rapidly. The total agricultural advances by the nationalised banks increased from Rs. 162.33 crore at the end of the June 1969 to Rs. 585.68 crore by the end of June 1974 as against the Fourth Plan target of only Rs. 400 crore. The progress over the period may be seen from Table 7.

With the cooperative credit structure not being able to provide the requisite facilities, and the commercial banking structure still not established in the rural areas, a number of committees/teams, during the Fourth Plan period, went into the problems of rural credit and made recommendations.

TABLE 7. DIRECT AND INDIRECT FINANCE BY THE NATIONALISED BANK TO AGRICULTURE, 1969-74

On the last Friday of June	Direct Fiance to Farmers		Indirect Finance to Farmers		Total	
	No. of Accounts (lakh)	Amount Advanced (Rs Crore)	No. of Accounts (lakh)	Amount Advanced (Rs Crore)	No. of Accounts (lakh)	Amount Advanced (Rs Crore)
1969	1.60	40.22	0.05	122.11	1.65	162.33
1970	6.12	160.38	0.19	141.26	6.31	301.64
1971	7.93	206.37	0.24	134.59	8.17	340.96
1972	9.27	231.89	1.44	156.58	10.71	388.47
1973	12.46	297.84	1.93	170.85	14.39	468.69
1974	16.30	391.58	2.54	194.10	18.84	585.68

Note: Indirect financing included (i) fiance for distribution of fertilisers and other inputs (ii) loans to State Electricity Boards for energisation of wells, etc., and (iii) other types.
Source: Ministry of Finance, Department of Economic Affairs. Banking Division, GOI, New Delhi.

In December 1972, a Study Team on Overdues of Cooperative Credit Institutions was constituted by the RBI. The Team found that defaults were by and large wilful and there was hardly any distinction between small and big farmers in this respect. The defective lending policies pursued by the cooperatives, the apathy of the managements in taking quick action against recalcitrant members, and the lack of support from the state governments were the underlying causes. The deficiencies in lending policies especially inadequate and untimely credit or over-financing or lack of supervision over the end-use of credit, inadequate application of fertilisers, fixation of unrealistic due dates and, what was worse, financing of defaulters had encouraged defaults and led to the piling up of overdues. The overdues in the cooperatives had increased from Rs. 214 crore in 1968-69 to Rs. 443 crore by 1973-74 [Reserve Bank of India, 1974, Pp. 224-225].

The Team suggested several measures including automatic disqualification of managing committees/boards of directors, denial of fresh credit and voting rights to defaulters as well as their sureties, amendment of Cooperative Societies Acts of various states, the Registrar to issue orders on his own motion for the recovery of loans as arrears of land revenue and the setting up of State Farming Corporations for the purchase of lands bf defaulters at the time of auction. A programme of rehabilitation by way of relief in respect of defaults under short and medium term agricultural loans by non-wilful defaulters, especially those who belonged to the low income category, was also recommended.

The Study Team reiterated the need to create viable credit units at the primary level with potential business of at least Rs. 2 lakh per society and recommended that weak and dormant units should be denied fresh credit and allowed a slow and natural extinction. The area of adjoining societies could be extended to cover the areas of the dormant and weak societies for meeting the credit requirements of non-defaulters and new members from the area.

In the meanwhile, in December 1971, the National Commission on Agriculture (NCA) submitted an interim report on the credit needs and services for small and marginal farmers and agricultural labourers. It recommended the institution of an integrated agricultural credit service, i.e., provision of credit along with inputs and services covering not only the complete range of farm produce upto the marketing stage, but also ancillary farm occupations, such as those of rural artisans and craftsmen which provide services to the farmers; a single agency providing short, medium and long-term credit as also inputs and services. It would have three constituents: (*i*) Farmers' Service Societies - one for each tehsil/block or any other viable unit of convenient size, with as many branches as were required in the area; (*ii*) a Union of these Societies at the district level, and functional district organisations for specific commodities; and (*iii*) Lead Bank in the district assuming leadership in the matter of organising integrated agricultural credit service [Ministry of Agriculture, 1971, Pp. 1-2, 23-25].

The Farmers' Service Society (FSS) in each tehsil/block was to be registered as a primary cooperative society meeting the development needs of the small and marginal farmers, agricultural labourers, and village artisans selected for assistance under SFDA and MFAL projects, either directly or by special arrangements with other agencies. All facilities by way of funds, concessional rates of interest, managerial subsidy, etc., available to the cooperatives were to be given to the FSS. The society was to have branches or depots to cater to the needs of its members at circle or equivalent levels to serve population groups of 10,000 to 12,000. The Lead Bank in the district was to assume leadership providing suitable linkages between the agricultural credit service and the institutions like land development banks, State agro-industries cooperations, etc. Government accepted the recommendations of the NCA and agreed to set up about 40-50 such societies in major States on a pilot basis. An 'Implementation Committee' was constituted in the Department of Agriculture, to coordinate, review, and guide the pilot scheme.

Banking Commission, January 1972

In February 1969 the Banking Commission was set up to examine and recommend on all important aspects, except industrial relations, of the working of the banking and credit institutions in India. The Commission submitted its report on January 31, 1972. The Commission found that the primary agricultural credit societies, by and large, were not designed or equipped to mobilise rural savings by attracting deposits. There were other serious problems : (*i*) growing overdues; (*ii*) inability of members to provide the prescribed security because of lack of up-to-date land records or inalienable rights in land or inability to produce sureties; (*iii*) ineligibility of certain purposes for loans, (*iv*) inadequacy of credit limits prescribed and (*v*) onerous conditions prescribed such as share capital contribution at 10 to 20 per cent of loans outstanding and compulsory thrift deposits. It was unlikely that the target of reorganization of one lakh primary agricultural credit societies by 1970-71 and to make them into viable units, would be achieved. This was because of (*i*) unwillingness of some societies to amalgamate, (*ii*) administrative delays, (*iii*) absence of legal provision to enforce amalgamation, and (*iv*) reluctance on the part of the States to enforce compulsory amalgamation. The performance of Central Cooperative Banks and State Cooperative Banks had not been very satisfactory either, mainly because of large overdues [Ministry of Finance, 1972, Pp. 155-156].

To remedy the situation, the Commission recommended setting up 'rural banks', which would be essentially 'cooperative' in character but would provide services of a much wider range than that offered by primary agricultural credit societies. Apart from mobilising local savings and meeting the entire credit needs of all medium and small cultivators, a rural bank could in the long run, take up the task of implementing programmes of supervised credit, providing ancillary banking services, setting up and maintaining godowns, supplying inputs and agricultural equipments, providing assistance in marketing and generally helping in the overall development of the villages in its area. The rural bank would be the primary banking institution to serve a compact group of villages covering a population of 5,000 to 20,000, and in sparsely populated areas all the villages comprised by a development block. Suitable institutional link-ups between the rural banks and the central/apex cooperative banks where the cooperative structure was strong and with commercial banks in cooperatively weak areas was recommended.

Because several measures had already been taken for increasing the involvement of commercial banks in rural areas through their financing of primary cooperative societies and establishment of farmers' service societies, Government decided to await the results and not set up immediately rural banks recommended by the Commission.

Working Group for Appropriate Institutional Structure in Rural Areas, 1973

In 1973, the Government of India constituted a high-level Working Group to recommend the most appropriate institutional structure for catering to the needs of rural areas. The Group came to the conclusion that only viable, professionally managed, multipurpose cooperative societies organised on the lines of the farmers' service societies recommended by the NCA either financed by cooperative banks or commercial banks, would fulfil the requirements of rural areas. It was realised that farmers' service societies could not be set up all over the country in view of the complex organisational problems that arose from amalgamation of a large number of existing societies and the consequential requirements of high-level managerial competence. Hence, the Group recommended that the aim should be to reorganise the multipurpose societies and take them ultimately to the level of the farmers' service societies. The Group also came to the conclusion that it would not be possible for the rural branches of commercial banks, at their present level of operational costs and organizational constraints, to provide package of services to the farmers and other population without effective link up with viable and well managed local institutions.

Committee on Cooperative Land Development Banks, December 1974

A Committee on Cooperative Land Development Banks, set up by the RBI submitted its report in December 1974.

Tracing the working of Land Development Banks since 1954, the Committee concluded that, while their achievements were praiseworthy, various problems still remained to be tackled. First, even in States where Land Development Banks were relatively strong, it was necessary to diversify their activities in order to reach a larger number of tenants and small farmers and cater to their several long-term credit requirements. Second, in the cooperatively less advanced States, the land development banking structure was very weak. Third, although a great deal of progress was made in regard to improvement of appraisal techniques and systems of lending, the Land Development Banks had yet to be actively involved in the preparation of agricultural development schemes even in cooperatively well developed States. Fourth, a common weakness in almost all Land Development Banks was the prevalence of overdues which were mounting due to operational weaknesses, apathy of management, lack of sufficient care and interest taken by the boards of directors and the attitude of the State Governments in not creating a climate favourable to recovery of loans. Fifth, although the staffing pattern in most of the banks had improved over the years, there was need for introduction of proper management techniques and procedures [Reserve Bank of India, 1974(c), p. 300].

The Committee recommended (B) continuance of both the federal and unitary structure for land development banking according to its suitability; (b) arrangements for provision of long-term agricultural credit in smaller States through State Cooperative Banks; (c) improvement in the working of the land development banking structure in the cooperatively weak States; (d) for the primary Land Development Banks or branches of central Land Development Banks to function as viable units, a minimum loan business of Rs. 35 lakh to be achieved by the end of three years; (e) coordination between short-term and long-term credit structures and routing of loans through primary credit societies, experimenting with the Farmers' Service Societies for the purpose; (f) improvement of the resources position of the land development banks and measures to mobilise rural savings; (g) production oriented lending system and follow-up measures for the purpose; (h) legal, administrative, and other measures to improve the recovery position; and (i) management and coordination, including training of staff in the preparation and implementation of schemes of agricultural development.

Working Group on Cooperation (Fifth Five Year Plan), December 1972

A Working Group on Cooperation, set up in the Ministry of Agriculture to formulate proposals for the Fifth Five Year Plan, submitted its report in December 1972. It proposed targets for cooperative credit at Rs. 1,200 crore for short-term, Rs. 350 crore for medium-tern, and Rs. 1,100 crore for long-term loans. To reduce the regional imbalances in the development of cooperative credit, the short-term loans should increase by the end of the Fifth Plan by about 10 per cent per annum for the cooperatively progressive (Group A) States, by 15 per cent per annum for Group B States, and by 20 per cent per annum for Group C or the cooperatively most backward States. As the resources available to the cooperative credit institutions in the backward States were inadequate to permit a 20 per cent level of growth, special assistance in the form of loans amounting to Rs. 15 crore from the Central and State Governments may be given to these institutions during the Plan period.

To achieve these targets, a substantial increase in the membership of primary cooperative credit societies from 30 million in 1969-701051 million by 1978-79 was recommended. Expeditious reorganisation and revitalisation of the primary credit societies was necessary. After reorganisation, the 1,60,780 societies in existence in June 1971 would probably be reduced to only about of 1,14,600 primary credit societies. Societies with a potential business of Rs. 2 lakh and an actual business of not less than Rs. 1 lakh may be considered potentially viable and efforts should be concentrated on increasing its business. The Working Group also recommended the appointment of a cadre of paid secretaries for the primary societies, and the constitution of a cadre authority and a cadre fund.

The Working Group recommended the amendment of section 46(b)(ii) of the RBI Act so that the RBI could provide loans from the National Agricultural Credit Stabilisation Fund through the State Cooperative Banks to the Central Cooperative Banks in areas affected by natural calamities, irrespective of their dues to the RBI. As regards the credit stabilisation funds at the State level, the Working Group recommended Central assistance of the order of Rs. 15 crore to meet the shortfalls in the funds in the different Stales. In areas affected by natural calamities, *taccavi* funds could also be used to augment the financial resources of the Central Cooperative Banks temporarily.

The scheme for rehabilitation of selected weak Central Cooperative Banks implemented since 1972-73 should continue during the Fifth Plan and a provision of Rs. 5 crore be made for the purpose. As regards the functioning of commercial banks in the rural areas, the Group felt that the infrastructure of the cooperatives could be utilised by them for disbursement of their resources. The commercial bank could contribute to the share capital of the cooperative banks and primary societies and also participate in their management.

Fifth Five Year Plan, 1974-79

According to the Draft Fifth Five Year Plan, the annual requirements of short-term credit would be around Rs. 3,000 crore by 1978-79. Hence, in 1978-79, the short-term credit advanced by cooperatives and commercial banks should amount to about Rs. 1,700 crore, while medium and long term credit during the Fifth Plan period should be about Rs. 2,400 crore. Short-term advances by primary agricultural credit societies were to be Rs. 1,300 crore by 1978-79; and medium and long-term advances Rs. 325 crore and Rs. 1,500 crore, respectively during the Plan period. Out of the Rs. 1,300 crore of short-term credit, loans to small and marginal farmers, agricultural labourers, tenants and share croppers should be Rs. 520 crore. Central Cooperative Banks should ensure that at least 20 per cent of their borrowings from apex banks were covered by outstanding loans to societies of small farmers and weaker sections.

To achieve these targets, the resources of the cooperative credit institutions should be augmented by larger deposit mobilisation, allocation of additional share capital from grower members, and increased government support for strengthening the share capital base of these institutions. The most crucial but the weakest link in the cooperative credit structure continued to be the primary agricultural credit society. Concerted efforts were to be made in the Fifth Plan for strengthening the primary societies and reducing their number to 1.15 lakh by 1978-79. Overdues constituted the most formidable problem. The Plan recommended that agricultural extension agencies should make repayment of cooperative loans an integral part of the package of practices recommended to the farmers. At the institutional level, linking of credit with marketing was emphasised. Coercive action against wilful defaulters could be considered and the State Government were expected to give active assistance to cooperative societies in this regard. As regards overdues of cooperative long-term credit, the concerned State Governments and the

Land Development Banks should make special efforts to make recoveries. To improve the quality of loan appraisal, technical cells should be established in the Land Development Banks.

To increase the flow of institutional credit to small/marginal farmers, tenants and sharecroppers, the share capital required to be held by them was reduced and further they were allowed to pay the reduced amount in convenient instalments. Other concessions suggested in the Plan included the grant of loans on the basis of indication of survey number of the land proposed to be cultivated; production of solvent surety/sureties of one or two members who were owners of land or registered tenants; or provision of collateral tangible security in the form of gold or silver ornaments. Where this was not possible, loans in kind (*i.e.,* in the form of fertilisers, improved seeds, and other inputs) could be provided upto a limit of Rs. 500, provided a member of the primary credit society concerned would stand surety. Concessional finance provided by the RBI was also to be made available to non-agriculturists and agricultural labourers who were members of primary credit societies for purchase of milch cattle and poultry farming activities. Provision should be made by law that at least 50 per cent of the members of the managing committees of societies should be from the category of small farmers, marginal farmers, tenants, agricultural labourers, and share croppers.

As regards long-term credit, the Plan recommended that the loaning policies of the Land Development Banks should be liberalised in respect of valuation of landed property offered as security and through issue of joint loans to small cultivators. Bigger cultivators who could repay loans in shorter periods could be encouraged to avail themselves of medium term credit for investment. Policies and procedures were to be so designed as not to inhibit the flow of credit to the small farmers, especially in the cooperatively weaker States.

The commercial banks were expected to provide, by the end of the Fifth Plan, a sum of Rs. 400 crore as short term loans and about Rs. 575 crore as long term loans. Their activities in the States and mas where commercial bank finance for agriculture was weak had to be expanded, and the needs of small and marginal farmers looked after.

During the Fifth Plan period, the ARDC was to provide refinance of over Rs. 600 crore. To reduce the regional imbalances, deliberate efforts were to be made to accelerate the rate of investment in the weaker States. Cent per cent refinancing was to continue in respect of viable schemes of agricultural development initiated by the SFDA and 90 per cent for others. Further, the Farmers Service Societies were to be introduced in areas where programmes for small and marginal farmers were undertaken [Planning Commission, 1976, Part II, Pp. 76-82].

Report of the Working Group on Rural Banks, July 1975

To speed up the flow of institutional credit to the weaker sections of the rural community, Government felt that it was necessary to establish 'new institutions on the basis of attitudinal and operational ethos entirely different from those obtaining in the public sector banks'. In pursuance, a Working Group on Rural Banks was appointed to examine in depth, the setting up of new rural banks as subsidiaries of public sector banks to cater to the Credit needs of the rural people. The Group submitted its report on July 30, 1975.

The Group identified the various weaknesses of the cooperative credit agencies and the commercial banks, and opined that the existing institutions were unable to fill the regional and functional gap in the rural credit institutional system within a reasonable time even with such adaptation, reorganisation, and restructuring as may be considered; and further that no single pattern, be it commercial banks or cooperative credit, could be expected to meet all the emerging requirements in all areas. A degree of adaptation and improvisation was called for and the range of institutional alternatives widened. A new type of institution was necessary which combined the local feel and familiarity with rural problems which cooperatives possessed and the degree of business organisation, ability to mobilise deposits, access to central money markets and modernised outlook which the commercial banks had. The role of the new institution, called the Regional Rural Bank (RRB) was however to supplement and not supplant the other institutional agencies in the field.

According to the Group, instead of immediately making these RRBs a pattern for reorganisation of existing rural credit institutions in the country as a whole, a few such banks could be set up in areas where the existing credit structure had not made much impact. The location for the new banks should be so chosen as to avoid overlapping with credit institutions which were working satisfactorily, and over-financing of the same borrowers. Initially five such banks should be set up in selected areas to serve as pilot institutions so as to provide guidelines in respect of the size of operations, coverage, viability, etc., for future development.

Government accepted these recommendations and the Regional Rural Banks Ordinance of 1975 was promulgated on September 26, 1975. It was subsequently replaced by the Regional Rural Banks Act of 1976 dated February 9, 1976. As against 5 Regional Rural Banks recommended by the Group, the Government of India targetted to set up 50 such banks by 1977. Actually, 48 RRBs were set up by that time.

The Regional Rural Banks, though basically Scheduled Commercial Banks, differed in certain respects from the existing commercial banks, the main points of difference being (a) their area of operation was limited to a particular region comprising one or more districts in any State; (b) they were to grant loans and advances particularly to small and marginal farmers and agricultural labourers and to rural artisans, small entrepreneurs and persons of small means engaged in trade and other productive activities in their areas of operation; (c) the lending rate of the banks was not to be higher than the prevailing lending rates of cooperative societies; and (d) the salary structure of their employees was to be determined by the Government, having regard to the salary structure of the employees of the State Government and local authorities of comparable level and status in the area of their operation.

Report of the National Commission on Agriculture, January 1976

The NCA submitted its final report in January 1976. The NCA pointed out that the cooperative credit had been flowing mainly to large cultivators because (a) land ownership was the dominating criterion for admission of new members and extending credit; (b) cooperative leadership and management were mainly in the hands of bigger farmers; and (c) lack of technical expertise and operational efficiency inhibited the application of the principle of lending relating it to possible increase in income so as to have a larger coverage of small farmers. Further, the rise in the overdues from year to year had affected the credit-worthiness of the cooperative system and its ability to extend further credit to the farmers. The same was true of the lending by the public sector banks. No serious attempt had been made either by the commercial banks or the cooperatives to understand the special credit needs of the small farmers, let alone the marginal farmers or agricultural labourers, and develop the ability to attend to their needs. In fact, on grounds of equity and optimum use of manpower and land, weightage should be given to their needs on preferential terms, both in regard to interest charged and quantum of advances. For this purpose, a comprehensive ground-level organisation was needed which would facilitate the conversion of credit into inputs and services as well as the realisation of fair price for the produce, and would operate fully on commercial basis covering all the needs of the farmers [Ministry of Agriculture and Irrigation, 1976 Pp. 568-570]. The Farmers Service Societies provided the desired organisation but, while regional adaptations were made, it was necessary to ensure hat distortion of objectives did not take place and that the individual banks were not loaded with the heavy strain of organisational work for new FSS.

The NCA worked out the credit requirements for crop production in 1985 taking the norms of Rs. 600 per hectare for irrigated areas and Rs. 450 per hectare for unirrigated areas for short-term loans. For medium and long-term loans the yardsticks used were: (a) Rs. 1,350 per hectare for preparation of land covered under major and medium irrigation (8 million hectares); (b) Rs. 200 per hectare for improvement in 5 million hectares already developed under major and medium irrigation; (c) Rs. 200 per hectare for improvement in areas covered by minor irrigation (1 million hectares); (d) Rs. 1,000 per hectare for groundwater development over 9 million hectares; and (e) Rs. 500 per hectare for land development in unirrigated areas covering 98 million hectares for programmes of levelling soil conservation, water-harvesting, ponds, etc. Assumptions for requirements of credit for milk production, piggery, poultry, sheep and fisheries were also made. Based on these considerations, the NCA estimated that the credit requirements of agriculture in 1985 would be Rs. 16,550 crore, including Rs. 400 crore for farm machinery and implements. This was on the assumption that the credit needs - short, medium and long-term - of all the farmers - big, small and marginal - will be covered. On a more realistic assumption that medium and long-term credit needs of the small and marginal farmers will be met in full in irrigated areas and to the extent of 50 per cent in unirrigated areas, the estimate of credit requirements comes down to Rs. 9,433 crore. During the period 1975 to 1985, the cooperative societies should strive to almost double their short, medium and long-term credit and the banking system should work towards increasing their agricultural loans from Rs. 1,450 crore in 1978-79 to Rs. 4,050 crore in 1984-85. The credit policy should be designed to provide an integrated agricultural credit service, to facilitate the adoption of new technology, to extend its scope to cover all aspects of rural development including production, marketing, transport and processing, and to provide linkages between finances and services for current inputs as well as investment in land improvement, minor irrigation and farm equipment.

Report of the Review Committee on Regional Rural Banks, February, 1978

In June 1977, the RBI appointed a Committee to examine the working of the RRBs set up a year earlier, particularly (*i*) to evaluate their performance in the light of the objectives for which they were set up; (*ii*) to indicate their precise role in the rural credit structure; and (*iii*) to make recommendations with regard to the scope, methods, and procedures of their functioning and other matter germane to the enquiry. The Committee thought that the performance of the banks, considering the limited time, was good judged both by quantitative and qualitative tests such as branch expansion, lending operations and mobilisation of deposits and that their credit-deposit ratios were distinctly superior to those of the rural branches of commercial banks. The financial results of some of the RRBs showed that they had the potential and capability to attain financial viability and become profitable at levels of business of about Rs. 3 crore to be reached within three to four years. They had succeeded to a great extent in taking banking to hitherto unbanked/under-banked centres in remote rural areas and also in imparting rural orientation and local touch to their operations. The overall recovery position was good. Only in the matter of coverage of the weaker sections, there was much leeway to be covered. The RRBs with some modification in their organisation and functions could become a very useful component in the totality of the rural credit structure [Reserve Bank of India, 1978(a), Pp. 67-68].

The Committee recommended that, with proper orientation and strengthening, the reorganised Primary Agricultural Credit Societies (PACS) and Farmers' Service Societies (FSS) should form the base of the rural credit structure. The RRBs could function at the intermediate level. They should fill the gap where the cooperative credit structure was weak at both the intermediate level (District Central Cooperative Banks - DCCB) and the retail level (PACS and FSS), by routing their credit through the FSS and PACS. In the first place the RRB system should be extended to such areas where the DCCBs were notable to adequately serve he PACS within their jurisdiction. Where the DCCBs were fairly strong, the RRBs and DCCBs could co-exist without overlapping and clash of interest. The type of financing done by the two systems was not wholly identical. Leaving aside the question of long-term finance, the cooperatives had an edge over the commercial banks in the matter of crop loans and the latter had succeeded more in the field of medium term loans. The cooperatives confined their agricultural lending mostly to seasonal finance. Diversification of agriculture through horticulture, animal husbandry, forestry, etc., would increase the demand for credit which the cooperatives alone would not be able to meet. The requirements of non-agricultural finance would expand considerably and the. RRBs with the support of the commercial banks would be in a better position to meet their needs.

As regards their relationship with commercial banks, the Committee recommended that where the RRBs were established, there should be a definite understanding that all commercial banks - not only the banks sponsoring the RRBs - would hand over, in a phased manner, such of their rural credit business to the RRB, as would fall within its jurisdiction or which it could effectively handle. The reasons for preferring the system of RRBs in place of the commercial banks' rural branch net-work were those of comparative simplicity, lower cost 6f operation, local involvement through appropriate staffing pattern and participation in the share capital, etc. Additionally, the business operations of the RRBs, even during its infant stage, had been more varied and more in tune with the social purpose compared to the business of the rural branches of the commercial banks [Reserve Bank of India, 1978(a), Pp. 71-74].

Government accepted the recommendations of the Review Committee that the RRBs would be an integral part of the rural credit institutional structure and decided that an RRB could be sponsored either by a commercial bank or by a State Cooperative Bank singly 'or jointly with a commercial bank. In addition to the 48 RRBs covering 86 districts, already set up, 14 more RRBs were proposed to cover 15 other districts where the existing institutional credit structure was inadequate. The RBI constituted a Steering Committee to frame and review policies and monitor progress of the RRBs.

The Fifth Five Year Plan was terminated a year earlier, in 1978. The progress made in the cooperative credit sector daring the Plan period is summarised in Table 8:

TABLE 8. ADVANCES BY COOPERATIVES 1973-74 AND 1977-78

Institutions	Year	Number	Loans Advanced	Loans Outstanding	Overdues	Overdues to Outstanding
				(Rs Crore)		(%)
Primary Agricultural Credit Societies	1973-74	1.54 lakh	763	1055	443	41.99
	1977-78	1.16 lakh	1282	1798	809	44.99
Central Cooperative Banks	1973-74	341	1249	1163	376	32.33
	1977-78	338	2116	2115	754	35.65
State Cooperative Banks	1973-74	26	1204	706	63	8.92
	1977-78	26	2023	1338	96	7.17
Central Land Development Bank	1973-74	19	147	914	42	4.60
	1977-78	19	239	1305	127	9.73

Source: *Statistical Statements Relating to the Cooperative Movement in India,* Reserve Bank of India, Bombay. (relevant years)

The short-term loans by PACS very nearly reached, in 1977-78, the targets for 1978-79 in the Fifth Plan; as against the Fifth Plan target of Rs. 1,300 crore, the PACS had advanced Rs. 1,282 crore by 1977-78. The number of PACS had declined from 1.54 lakh to 1.16 lakh during the same period covering 9 1.6 per cent of the villages; however the reorganisation of the societies into viable units expected to be completed by 1966-67 was still continuing; at the end of June 1978, there were 8,994 dormant societies.

Compared to the Fifth Plan target of 40 per cent of the short-term credit to go to small and marginal farmers and weaker sections, nearly 39.5 per cent, in 1977-78, went to farmers with holdings of less than 2 hectares, tenant cultivators, agricultural labourers and others. But, the overdues continued to increase.

As at the end of June 1978, the scheme of financing PACS by commercial banks was in operation in 121 districts of 12 States. At the end of June 1978, 18 public sector banks and 2 private sector banks had set up 213 FSS in 13 States and the Union Territory of Delhi. Advances by public sector banks to the agricultural sector increased from Rs. 705.57 crore at the end of December 1974 to Rs. 2,009.52 crore by the end of December 1978 as shown in Table 9:

TABLE 9. DIRECT AND INDIRECT FINANCE BY NATIONALISED BANKS TO AGRICULTURE, 1974-79

(Rs crore)

On the last Friday of December	Direct Finance	Indirect Finance	Total Advances
1974	478.32	227.25	705.57
1975	658.49	278.41	936.90
1976	915.98	313.25	1,229.23
1977	1,150.82	368.65	1,519.47
1978	1,525.42	484.10	2,009.52

Source: Ministry of Finance, Department of Economic Affairs, Banking Division, GOI, New Delhi.

The number of RRBs remained at 48 at the end of June 1978, although their branches increased. Their advances aggregated Rs. 52.27 crore upto March 1978 of which Rs. 48.39 crore were to small/marginal farmers, landless labourers, and rural artisans.

With the multiple institutional agencies operating in the field of rural credit - cooperatives, RRBs and Commercial Banks - a number of problems arose during the Fifth Plan period. These included uncoordinated credit disbursal, diversion to unproductive purposes, inability of the credit agencies to formulate agricultural programmes on the basis of an area approach, overlapping and duplication of banking facilities, lagging recovery, and numerous problems arising out of different systems, procedures, security norms, service charges, interest rates, etc. In 1977-78, the RBI appointed a number of groups and committees to examine the problems. The Working Group on Multi-Agency Approach in Agricultural Finance in its Report in April 1978 recommended that (a) the respective roles of the three agencies should be clearly defined, (b) the rural areas should be covered by a net-work of viable cooperative credit institutions, (c) there should be area demarcation for short-term loans among different credit agencies, (d) uniform pattern of interest rates should be adopted for all the financial agencies, and (e) the field organisations of commercial banks should be strengthened to meet the needs of the integrated rural development programmes [Reserve Bank of India, 1978(b)].

In the same month, another Expert Group recommended effective dovetailing of agricultural credit schemes of commercial banks with development efforts and also with credit schemes for other supportive activities [Reserve Bank of India, 1978(c)]. The Committee on Public Sector Banks on the other hand, suggested that commercial banks should not spread their branches below the block level and that for deposit banking or for providing general banking services, the PACS, FSS, and RRBs would be the appropriate agencies providing a more pervasive credit structure, reducing costs, and better services to the rural population. The Committee further recommended that RRBs should be the core of banking operations in the district and the responsibility of developing that area should be that of the RRBs [Reserve Bank of India, 1978(d)].

The problem of strengthening of the cooperative credit institutions also continued to beset the RBI. In July 1977, a Committee was set up to guide the RBI in this regard. The Committee suggested that schemes for strengthening the cooperative credit structure in selected districts should contain specific action programmes spread over a year or two covering (a) reduction of overdues, (b) increasing the number of borrowing members of the societies and ascertaining specific reasons for a large percentage of non-borrowing members, (c) ensuring full coverage of cultivators, particularly the small and marginal farmers, by membership as well as by financial assistance, (d) ascertaining the reasons for the wide gap between credit limits sanctioned by Central Cooperative Banks to PACS and the amounts disbursed, and (e) initiating steps for completing the programme of reorganisation and revitalisation of PACS on the basis of time-bound programmes [Reserve Bank of India, 1978(e)].

Working Group on Rural Credit and Cooperation for the Sixth Plan, 1978-83

In 1977-78, the Planning Commission set up various Working Groups to make recommendations for the Sixth Five Year Plan, 1978-83. The Working Group on Rural Credit and Cooperation recommended a long-term lending target of Rs. 2,500 crore for the Land Development Banks during 1978-83. Institutional credit requirements were assessed at Rs. 3,890 crore of short-term loans to be reached by the end of the Plan and Rs. 6,290 crore as term loans to be advanced during the Plan period. The cooperatives were to continue to be the major source of credit providing Rs. 2,500 crore of short-term credit and Rs. 3,710 crore in term loans. The commercial banks were expected to provide Rs. 2,600 crore of term loans and reach a level of Rs. 1,400 crore in short-term loans. 50 per cent of the total loans were to go to the weaker sections while in areas with concentration of small and marginal farmers and agricultural labourers, the percentage should be higher.

Draft Sixth Five Year Plan, 1978-83

The Draft Sixth Five Year Plan, 1978-83, envisaged doubling of rural credit obtained in 1977-78 in about three years. The main constraints were low recoveries, high level of overdues, and consequent ineligibility of a large number of cooperative institutions for refinancing. A major objective of the agricultural credit policy should be progressive institutionalisation, with a multi-agency approach and the earmarking of an increasingly larger share for the weaker sections. The main agency should be the cooperatives with commercial banks supplementing their efforts. As far as possible, the deposits collected by commercial banks in rural areas were to be made available for investment in rural development. The loaning operations of the ARDC was also to be considerably expanded and diversified [Planning Commission, 1979, p. 151].

Committee for Reviewing Arrangements for Financing Institutional Credit for Agriculture and Rural Development (CRAFICARD), March 1981

In March 1979, the RBI appointed a committee to suggest improvements in the existing arrangements for institutional credit for agriculture and rural development. The Committee was expected (1) to review the structure and operations of ARDC in the light of growing need for term loans for agricultural and allied purposes; (2) to examine the need for and the feasibility of integration of the short-term and medium-tern credit with long-term credit structure at national, state, district, and village levels; (3) to assess the relative merits and demerits of the three-tier and two-tier cooperative structure and suggest improvements; (4) to study consultancy services provided by the Agricultural Finance Corporation and suggest improvements; and (5) to review the role of the RBI in the field of rural credit.

The Committee submitted an interim report in November 1979 and the final report in March 1981. It noted that problems of agricultural credit had not only grown in complexity and size but had also merged with the larger tasks of rural development and recommended the setting up of a new apex bank - the National Bank for Agriculture and Rural Development (NABARD) - providing undivided attention, forceful direction, and pointed focus to the credit problems arising out of the integrated approach to rural development. The NABARD was to take over from the RBI the overseeing of the entire rural credit system including credit for rural artisans and village industries and the statutory inspection of cooperative banks and RRBs on an agency basis; the RBI could continue to retain its essential control. The NABARD was to be linked organically with the RBI by the latter contributing half of its share capital, the other half being contributed by the Government of India, and nominating three of its Central Board Directors on the board of the NABARD besides a Deputy Governor of RBI being appointed as Chairman of NABARD. The authorised share capital of NABARD would be Rs. 500 crore and paid-up capital Rs. 100 crore. The NABARD would enjoy the term-lending facilities extended by the RBI to the ARDC. As regards short-term credit-/working capital loans, the RBI would fix aggregate credit limits in favour of the NABARD.

Some of the other recommendations made by the Committee were: (a) efficient credit delivery system at ground level for effective implementation of the concept of integrated approach to rural development. The three tier short-term cooperative structure could remain as the general pattern for bigger States; the two-tier structure may be continued in smaller States and Union Territories. There was need for the rehabilitation of weak Central Cooperative Banks. If rehabilitation was not possible, the State Cooperative Banks could sponsor RRBs instead. (b) No dogmatic approach to force the integration of the two wings of the cooperative credit movement. A beginning could be made at the primary level, through PACS acting as agents of LDBs in the matter of dispensing long term credit. The Cooperative Societies Acts of the States could be amended for the purpose. (c) Speedy reorganisation of PACS and their conversion into truly multipurpose service institutions. (d) The PACS should have two categories of members - one exclusively reserved for the weaker sections, distinguished by the lower rate of share capital prescribed for them, and the other earmarked for those contributing at the usual rate. (e) The existing long-term cooperative credit structure be continued. The Land Development Banks should diversify their lending for agricultural purposes and extend their involvement in lending for non-land based purposes. (f) The State Government should introduce a system of regular checks to detect refusal of loans to the weaker section.

The Committee underlined the need for better spread of commercial banks branches in rural and semi-urban’ areas and recommended that the scheme of the commercial banks adopting certain

PACS need not be further extended; instead, the Cooperatives should be permitted to seek credit facilities from commercial banks.

The Committee recognised that the RRBs was the suitable institution to take banking to the rural areas and ensure more effective supervision over the end-use of loans. It recommended that (a) preference should be given to RRBs in regard to licensing of branches in the rural areas; (b) the RBI should facilitate the transfer of eligible business of commercial banks' rural branches to RRBs when such proposals were presented; (c) RRBs' losses in the initial years should be made good by their shareholders and the equity capital of RRBs be raised suitably; (d) RRBs' should continue to confine their operations to the weaker sections; (e) emoluments of the staff of RRBs should continue to be determined with due regard to State Government scales as was being done by Government of India; (f) various facilities from sponsor banks to RRBs should continue for a period of 10 years in each case; (g) non-officials connected with agricultural development may be nominated on the Board of RRBs but politicians should not be considered for this purpose; (h) the control, regulation and promotional responsibility relating to RRBs should be transferred from the Government of India to RBI/NABARD; and (i) as RRBs served the weaker sections exclusively, facilities such as concessional refinance from RBI should be continued. The Government accepted the recommendations of the Committee for the setting up of NABARD and necessary legislation was enacted in December 1981.

There was a change in the Government in January 1980. The 1978-83 Plan was replaced after operating for two years viz., 1978-79 and 1979-80, by the Sixth Five Year Plan, 1980-85.

Sixth Five Year Plan, 1980-85

The main objectives of the institutional credit policy laid down for the Sixth Plan, 1980-85 were to (a) secure an increase in the total volume of institutional credit for agriculture and rural development; (b) direct a larger share of the credit to the weaker sections; (c) reduce the regional imbalances in the availability of credit; (d) bring about greater coordination between different credit institutions under the multiple agency system; and (e) improve the recovery of institutional loans to ensure continuous re-cycling of credit. The availability of institutional credit to agriculture was projected to expand from the base level of Rs. 2,550 crore in 1979-80 to Rs. 5,4 15 crore in the terminal year (1984-85) of the Sixth Plan. The level of credit support during the Plan period projected for the different credit agencies is given in Table 10.

TABLE 10. CREDIT SUPPORT TO AGRICULTURISTS, 1984-85

Agency	Anticipated Advances in 1979-80	Projected for 1984-85
	(Rs. Crore)	
Cooperatives		
Short-term	1300	2500
Medium-term	125	240
Long-term	275	555
Commercial Banks (Including Regional Banks)		
Short-term	450	1500
Term Loans	400	620
Total	2,550	5,415

Source: *Sixth Five Year Plan, 1980-85*, Planning Commission New Delhi.

Thus, the cooperatives were to continue to have the predominant role in terms of both volume and territorial coverage. However, a number of disconcerting features regarding the progress of cooperative credit were noted. The growth of cooperative credit had slowed down because of the mounting overdues which were clogging credit recycling. The write-off of debts as done by some States was setting an undesirable precedent and would hamper recovery effort in the future. There were also considerable regional disparities in the availability of credit. Again, although the cooperatives covered almost the entire country-side the membership was only 45 per cent of the total rural families. The weakest section of the rural community were still inadequately represented. While the share of the weaker sections in credit had risen to about 40 per cent of the total, this fell short of their essential production needs.

Hence, in the Sixth Plan, attention was to be directed to (a) strengthening of the primary village societies so that they were able to act effectively as multipurpose units; (b) re-examining the existing cooperative policies and procedures to ensure greater attention to the rural poor; (c) re-orientation and consolidation of the role of the apex institutions to enable them, through their constituent institutions, to effectively support a rapidly diversifying and expanding agricultural sector; and (d) development of professional manpower and appropriate professional cadres to man managerial positions [Planning Commission, 1981, Pp. 177-179].

The Plan endorsed the setting up or the NABARD which was established by an Act of Parliament (Act 61 of 1981) in July 1982 ‘for providing credit for the promotion of agriculture, small scale industries, cottage and village industries, handicrafts and other rural crafts and other allied economic activities in rural areas with a view to promoting integrated rural development and securing prosperity of rural areas'. NABARD took over the functions of the erstwhile Agricultural Credit Department (ACD) and Rural Planning and Credit Cell (RPCC) of the RBI and the ARDC. Its subscribed and paid-up capital is Rs. 100 crore, contributed by the Government of India and the RBI in equal proportions. It (*i*) serves as an apex refinancing agency for the institutions providing investment and production credit for promoting the various developmental activities in rural areas; (*ii*) takes measures towards institution building for improving absorptive capacity of the credit delivery system, including monitoring, formulation of rehabilitation schemes, restructuring of credit institutions, training of personnel, etc; (*iii*) coordinates the rural financing activities of ail the institutions engaged in developmental work at the field level and maintains liaison with Government of India, State Governments, RBI and other national level institutions concerned with policy formulation; and (*iv*) undertakes monitoring and evaluation of projects refinanced by it. NABARD's refinance is available to State Land Development Banks (SLDBs), State Cooperative Banks (SCBs), Scheduled Commercial Banks (CBs) and Regional Banks (RRBs) [NABARD, Annual Report, 1982-83, p. 74].

Progress in the Sixth Plan (1980-85)

By end of March 1985, the cooperatives with a country-wide net work of 94,089 PACS constituted the dominant agency in terms of volume of loans advanced and territorial coverage. The commercial banks had over 36,000 semi-urban and rural branches and there were 182 RRBs with 8,727 branches. The targets and achievements in the Sixth Plan are shown in Table 11.

TABLE 11. LOANS ADVANCED DURING 1980-85

Programme	Target 1980-85	Achievement 1980-85
	(Rs. Crore)	
Cooperatives		
Short-term Loans	2500	2334
Medium-term Loans	240	662
Long-term Loans Commercial Banks/RRBs	555	
Short-term Loans	1500	1110
Term Loans	620	1450
Total	5,415	5,556

The refinance provided by NABARD under schematic lending amounted to Rs. 1,061 crore in 1984-85. The share of SLDBs and SCBs in total refinancing was 31 per cent while commercial banks and RRBs availed of the remaining 69 per cent.

Inspite of all this expansion of institutional credit, a Committee to review the Administrative Arrangements for Rural Development (CAARD) set up by the Ministry of Agriculture, in its report submitted in December 1985, estimated that only 40 per cent of the rural credit was provided by these institutions; the money lenders still supplied the balance of sixty per cent of the rural credit. The Committee reiterated that it 'should be the goal of national planning arid banking development that the institutional credit becomes the predominant part of rural and agricultural credit in the country' and that this could be accomplished by strengthening of the staffing system of the banking institutions - cooperative, RRBs and commercial; changes in the lending programme by identifying the needs of the poor, procedure of lending, utilisation of loans and recovery of loans; the structure and organisation of the banks in the rural areas and their coordination with development administration; and generally strengthening the cooperative institutions [Ministry of Agriculture, 1985, p. 58].

Moreover, there was little improvement in the recovery of institutional loans. At the end of June 1985, the percentage of overdues to demand at the PACS level was around 40 per cent while at the level of LDBs it was around 42 per cent. The recovery position in the case of RRBs and commercial banks was worse at around 50 per cent. The health of agricultural credit institutions, both cooperatives and commercial banks, was in a very sad state in many parts of the country. Wilful default and overdues were mounting even in cooperatively progressive States like Gujarat and Maharashtra. By writing off agricultural loans and providing subsidies out of the State exchequer, some States had set a bad precedent. According to the Seventh Plan, if this trend was not reversed and if banks were reduced to institutions providing grants rather than recycling credit, the banking system would not be able to meet the ,credit needs of agriculture in future [Planning Commission, 1985, Vol. II, p. 17].

Seventh Five Year Plan, 1985-90

The policy objectives in the sphere of agricultural credit in the Seventh Plan were again the same, namely, (a) to ensure a substantial increase in the flow of credit, particularly to weaker sections; (b) to improve recovery; (c) undertake credit planning and monitoring in a coordinated manner at the National, State and District levels. Operational efficiency of the credit institutions particularly cooperatives, in terms of manpower, financial resources, and procedures, had to be improved. PACS would be converted into multipurpose cooperatives in a phased manner so as to enable them to handle, not only credit but also other services and supplies. The targets of agricultural credit by different institutions proposed in the Seventh Plan are given in Table 12:

TABLE 12. TARGETS OF AGRICULTURAL CREDIT BY 1989-90

Agency	1989-90 (Rs crore)
Cooperatives:	
Short-term loans	5,540
Medium-term loans	500
Long-term loans	1,030
Commercial Banks/RRBs:	
Short-term loans	2,500
Term loans	3,000
Total	12,570

The Seventh Plan Mid-term Appraisal mentioned that, during the fist three years of the Plan, disbursement of agricultural credit was much below the Plan targets. As against the Annual Plan targets of RS. 3,700 crore for 1985-86, RS. 3,960 crore for 1986-87, and Rs. 4,275 crore for 1987-88, the anticipated achievements are reported to be Rs. 3,200 crore, Rs. 3,500 crore and Rs. 3,700 crore, respectively. One reason was severe drought and floods in many parts of the country which affected the recovery of crop loans and resulted in mounting overdues ranging between 40 to 45 per cent. 'The expansion of credit as envisaged in the Seventh Plan would not be possible unless substantial improvement is brought about in the overdues position of the cooperative credit structure at various levels' [Planning Commission, 1988, p. 975].

Eighth Five Year Plan, (1990-95): Perspectives and Issues

The planning Commission circulated in early 1989 a draft of its views On planning in the Eighth Five Year Plan, 1990-95. Referring to rural credit, it mentioned that 'households which had an asset holding of less than Rs. 10,000 were getting between 67 - 90 per cent of their credit from money lenders. The banking system was helping mainly the richer households. For example, households with asset holdings above Rs. 5 lakh secured 95 per cent of their credit from institutional sources; i.e., banking and cooperative credit systems; and households owning assets between Rs. 1 lakh and Rs. 5 lakh got three quarters of their credit from the banking system. Thus the institutional system has uptil now not succeeded in providing credit support to a majority of the small agricultural producers. This in effect means that the subsidy systems on agricultural credit do not reach a majority of the producers who are small, and in fact are highly inefficient in providing support to the production Therefore, 'The balance period of the Seventh Plan and the Eighth Plan will have to be used for the conscious design of policies which can organise and activate institutional systems which provide support to the small peasant structure of the Indian agricultural economy. The present systems are both inequitous and inefficient. Special institutions for smaller peasants, greater openness in be working of rural credit cooperatives and rural development agencies, including advertisement of their allocations at the village level and organisation of poorer beneficiaries, are all the kind of steps that can be considered' [Planning Commission, 1989, p. 17-18].

To sum up: In the four decades since the Rural Credit Survey in 1951-52, the institutional arrangements for the supply of-credit to agriculture have increased greatly. There are now cooperative credit institutions, including Farmers' Service Societies, Regional Rural Banks, Commercial Banks, NABARD, and the RBI looking after the needs of credit in the rural areas. The quantum of institutional credit through PACS alone has increased from Rs. 24 crore in 1951-52 to Rs. 3,700 crore in 1986-87. The proportion of institutional credit available to agriculturists has increased from 7 per cent of their total requirements in 1951-52 to 40 per cent in 1985-86. But, overdues with PACS have increased from 25 per cent of their outstandings in 1951-52 to 40 per cent by 1986-87. Moreover, the small farmer continues to be inadequately attended to. In 1951-52, he depended mainly on private agencies. But, even in 1988, households with an asset holding of less than Rs. 10,000 depended on private agencies for 67 - 90 per cent of their credit needs. New institutions and agencies have not helped much the small and marginal farmers and the landless labourers for whom they were primarily set up.

These problems were identified and articulated in the Rural Credit Survey in 1951-52. It was also then recognized that the persistence of these problems meant a failure of fifty years of cooperative movement in India. But there appeared no other solution. Hence, the conclusion in the famous phrase: "Cooperation has failed, but Cooperation must succeed" [Reserve Bank of India, 1954, Vol. II, p. 372]. The remedy was to create "new conditions in which it can operate effectively and for the benefit of the weaker". The essence of the new conditions was state partnership at all levels. The need for a strong base was recognised. There were repeated exhortations to strengthen, to reorganize, to restructure, to revitalise the primary cooperatives. But, there was little appreciation that this could not be done by initiative from above. Instead, a weak base was vastly expanded as per plan targets and an immense governmental and semi-governmental superstructure was created. The driving principle seemed to be: 'If people cannot or will not do it, the state can and will do it'.

There has been an admirable concern for the weak and the poor. But, understandably, credit was the panacea. That sometimes it can do more harm than good was recognised but was forgotten or overlooked. The Committee of Direction of the RCS makes a perceptive observation: "'Credit' says an old French proverb, 'supports the farmer as the hangman's rope supports the hanged.' But if credit is sometimes 'fatal', it is often indispensable to the cultivator. ... Agricultural credit is a problem when it cannot be obtained; it is also a problem when it can be had but in such a form that on the whole it does more harm than good," [Reserve Bank of India, 1954, VI. II, p. 151]. Unfortunately, this perception was not pursued and liberal credit was advocated not only where it was needed but where it would be taken. In justification, the Committee said that 'a large part of the working funds which the subsistence farmer needs has the appearance of being related to his consumption rather than to his production' and then with a certain prescience noted: "Such a farmer in effect requires what is familiar to Governments in India as 'ways and means advances'". Exactly, the ways and means advances are supposed to be very short term borrowing by the Government. But the Government systematically converted them into long term debt which now amounts to over two-thirds of the national income of the country and the interest payments on which amount almost to a quarter of the annual revenues of the Government. Precisely in similar manner, overdues are mounting in agricultural credit with this difference that they are called by their proper name, namely, overdues.

Soon after the publication of the Report of the Committee of Direction, Sir

Malcolm Darling [Darling, 1955], referring to the vast and rapid expansion of cooperative credit advocated by the Committee, said: "The Committee have certainly made out a strong case, on paper at least, for a large increase in the flow of credit, but I cannot forget Professor Carver's dictum that 'farmers who do not keep accurate accounts (and how many do this in India?) and who have not a keen sense of values should avoid use of credit like the plague'. But that was written before the age of planning, and the trouble is that one plan necessitates another. Hence in large measure this particular plan." "What guarantee" he asked "is there that it (credit) will go only to the creditworthy or that the cultivator with more money to spend will be more punctual in repayment, more provident and less feckless? The camel driver, says an Arab proverb, has his plans, and the camel has his. So has it often been between Government and peasant in the past, and it may well be so again." Evidently, it was so. The overdues mounted and soon threatened to clog the flow of credit. Committee after committee noticed this but ended up recommending bypasses to let the credit flow round the overdues acting on the dictum :'Credit should be given not only where it is due but also where it is overdue'.

Referring to the state participation, Sir Malcolm Darling raised the fundamental question: "How will self-help and mutual help fare with so much done for the members by Government ? ... Are they not likely to wilt, or even be crushed under the weight of the proposed state structure. It is intended that Government should gradually withdraw from partnership as societies become more competent to manage their own affairs; but, as India knows, it is never easy to persuade those in authority that the time has come for withdrawal, still less easy to get employees to train others to take their place." [Darling, 1955].

Soon after, Sir Malcolm Darling was invited by GOI "to review recent developments in the field of Co-operation with reference to programmes in the Second Five Year Plan ..." We may note that Sir Malcolm Darling was a member of the Indian Civil Service. He joined the service in 1904 and, as a senior civil servant, served mostly in Punjab. He was the Commissioner of Income Tax, Punjab, etc., 1921-27; Registrar, Cooperative Societies, Punjab, 1927; President, Indian Economic Association, 1928; Chairman, Punjab Banking Enquiry Committee, 1930; Commissioner, Rawalpindi, 1934; on special duty, Finance Department, Government of India, 1934; Vice-Chancellor, University of Punjab, 1931 and 1937-38, Chairman, Punjab Land Revenue Assessment Committee, 1938; President, Aliens Interrogation Committee, 1939-40; President, Indian Society of Agricultural Economics, 1940. He was the author of (i) Some Aspects of Cooperation in Germany and Italy, 1922; (ii) The Punjab Peasant in Prosperity and Debt, 1925; (iii) Rusticus Loquitor or the Old Light and the New in the Punjab Village, 1930; and (iv) Wisdom and Waste in the Punjab Village, 1934. He submitted his report on June 17, 1957. We quote below the first three paragraphs of his Introduction.

"The Second Five Year Plan involves the most spectacular effort ever contemplated in the field of agricultural co-operation. Briefly, the supply of credit is to be increased from Rs. 43 to 255 crores, over 2,200 marketing and processing societies, including 160 ginning and sugar factories, are to be formed, 5,500 godowns and 350 warehouses are to be built, and the number of members of societies is to be raised from 5 to 15 million. In short, Co-operation is to be ‘the vital principal of all rural development’.

"I need hardly say that I am in entire sympathy with this principle. It has long been my belief that Co-operation is the only satisfactory means of securing the peasant’s well-being in this complicated world. But if this faith is to be justified, nothing must be done to endanger the movement, particularly at the primary level, where it has its real being. Too much is at stake and too many millions affected. Accordingly, in considering the programme ... and its relation to the movement *as it is*, it was necessary to consider whether so much could be done in so short a time without endangering it. The field I was specially concerned with was agricultural credit and ... I came to the conclusion that the pace proposed was too fast for sound development even in the four States - Bombay, Andhra, Madras and the Punjab - where the movement is strongest; doubly so in the others I visited or was able to consider.

"Against this it is urged that India must develop at the pace of totalitarian countries, with however this difference that the stimulus must come from below, and on a co-operative basis; otherwise democracy will not survive. The difference is all important, for all democratic processes involve a slower pace than authoritarian. In the Draft Out- line of the Plan it is rightly said that ’if strong primary units exist at the base, effective organisations can also be built. Yet it is proposed to add an imposing storey - for co-operative manufacturing, marketing and processing - to a structure ... nowhere very strong and in some States deplorably weak, and to do this without any systematic strengthening of its foundations. This is sooner or later to risk partial, perhaps even in some areas, total collapse. And if that happens, experience shows only too clearly that rebuilding is extremely difficult - also very costly. Bihar and Bengal are conspicuous examples of this; indeed in every State the path of Co-operation is strewn with wreckage." [Planning Commission, 1957, Pp. 1-21. Unfortunately, his forebodings have come true. Evidently, the situation demands, not more of the same thing but, a new and fresh thinking.

ABBREVIATIONS

ACD	Agricultural Credit Department of the Reserve Bank of India
ARDC	Agricultural Refinance and Development; Corporation
DCCB	District Central Cooperative Banks
FSS	Farmers' Service Society
GOI	Government of India
LDB	Land Development Banks
NABARD	National Bank for Agriculture and Rural Development
NCA	National Commission on Agriculture
NDC	National Development Council
PACS	Primary Agricultural Credit Societies
PEO	Programme Evaluation Organisation of the Planning Commission
RBI	Reserve Bank of India
RCS	Rural Credit Survey Report, 1951-52
RPCC	Rural Planning and Credit Cell of the Reserve Bank of India
RRB	Regional Rural Banks

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STATEMENT I. ADVANCES BY PRIMARY AGRICULTURAL CREDIT SOCIETIES

Year	Number of Societies	Membership	Loans and Advances	Loans Recovered during the year	Loans Outstanding	Loans Overdue	Percentage of Overdues to Outstandings
	(lakh)	(lakh)	(Rs. Crore)				(%)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1947-48*	0.85	35	10	8	16	4	25.00
1948-49*	1.12	44	14	11	21	5	23.80
1949-50*	1.17	48	18	13	25	5	20.00
1950-51*	1.15	51	23	18	29	6	20.69
1951-52	1.08	48	24	19	34	9	26.47
1952-53	1.12	51	26	21	38	10	26.32
1953-54	1.27	58	30	26	42	12	28.57
1954-55	1.43	66	35	29	49	15	30.61
1955-56	1.60	78	50	38	59	15	25.42
1956-57	1.62	91	67	51	77	17	22.08
1957-58	1.67	102	96	65	107	23	21.50
1958-59	1.83	119	126	96	135	27	20.00
1959-60	2.03	144	169	126	178	38	21.35
1960-61	2.12	170	203	163	218	44	20.18
1961-62	2.15	196	228	190	257	63	24.51
1962-63	2.11	217	257	211	294	77	26.19
1963-64	2.10	237	297	247	343	77	22.45
1964-65	2.01	254	316	288	371	96	25.88
1965-66	1.92	261	342	284	427	125	29.27
1966-67	1.79	267	366	278	477	160	33.54
1967-68	1.72	281	428	374	534	171	32.02
1968-69	1.68	292	503	421	619	214	34.57
1969-70	1.63	298	542	455	711	268	37.69
1970-71	1.61	304	580	505	784	322	41.07
1971-72	1.57	320	613	536	858	377	43.94
1972-73	1.55	335	776	655	979	368	37.59
1973-74	1.54	350	763	669	1,055	443	41.99
1974-75	1.53	364	904	782	1,177	503	42.74
1975-76	1.34	395	1,026	898	1,299	561	43.19
1976-77	1.23	448	1,307	966	1,599	683	42.71
1977-78	1.16	479	1,282	1,077	1,798	809	44.99
1978-79	0.96	525	1,458	1,232	2,049	927	45.24
1979-80	0.95	548	1,629	1,305	2,372	1,088	45.87
1980-81	0.94	577	1,769	1,637	2,621	1,085	41.40
1981-82	0.94	632	2,223	1,904	2,965	1,248	42.09
1982-83	0.93	640	2,441	2,179	3,233	1,417	43.83
1983-84	0.92	667	2,499	n.a.	3,497	1,574	45.01
1984-85	0.92	691	2,693	n.a.	3,980	1,630	40.95
1985-86	0.92	721	3,140	n.a.	4,323	1,806	41.78
1986-87	0.89	719	3,149	n.a.	4,636	1,996	43.05
1987-88	0.90	873	3,687	n.a.	5,262	2,132	40.52

* Inclusive of Grain Banks.

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STATEMENT II. ADVANCES BY STATE COOPERATIVE BANKS

Year	Number of Societies (lakh)	Membership (lakh)	Loans and Advances (Rs. Crore)	Loans Recov-ered during the year (Rs. Crore)	Loans Outstanding (Rs. Crore)	Loans Overdue (Rs. Crore)	Percentage of Overdues to Outstandings (%)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1947-48	11	0.15	22	22	9	n.a.	-
1948-49	12	0.16	41	33	17	n.a.	-
1949-50	14	0.19	30	32	14	2	14.29
1950-51	15	0.21	42	38	18	2	11.11
1951-52	16	0.23	55	53	20	3	15.00
1952-53	17	0.26	40	41	20	3	13.04
1953-54	22	0.32	52	49	23	3	16.67
1954-55	24	0.36	50	49	24	4	11.43
1955-56	24	0.36	68	58	35	4	8.00
1956-57	23	0.33	123	110	50	4	8.00
1957-58	21	0.32	219	57	75	6	5.94
1958-59	22	0.32	101	74	101	6	4.62
1959-60	22	0.22	197	91	130	6	4.19
1960-61	21	0.22	258	122	167	7	4.06
1961-62	21	0.23	256	141	197	8	3.74
1962-63	21	0.16	295	148	214	8	2.90
1963-64	21	0.23	318	291	241	7	2.47
1964-65	22	0.21	402	357	283	7	2.93
1965-66	22	0.21	408	322	307	9	5.23
1966-67	25	0.21	451	262	325	17	5.03
1967-68	25	0.21	540	377	358	18	5.01
1968-69	25	0.21	667	423	459	23	5.49
1969-70	25	0.18	704	488	510	28	6.74
1970-71	26	0.19	749	383	534	36	6.88
1971-72	26	0.19	947	523	552	38	5.95
1972-73	26	0.20	1,135	675	635	42	8.92
1973-74	26	0.20	1,204	806	706	63	4.78
1974-75	26	0.19	1,382	843	920	44	4.81
1975-76	26	0.20	1,515	1,056	894	43	5.33
1976-77	26	0.23	1,898	1,138	1,088	58	7.17
1977-78	26	0.30	2,023	1,382	1,338	96	8.94
1978-79	27	0.36	2,283	1,531	1,420	127	11.59
1979-80	27	0.23	2,363	1,578	1,510	175	8.82
1980-81	27	0.25	2,870	1,844	1,836	162	6.62
1981-82	27	0.31	3,675	2,009	2,477	164	6.19
1982-83	28	0.30	4,144	2,588	2,909	180	6.10
1983-84	28	0.30	4,444	1,783	2,916	178	7.75
1984-85	28	0.31	4,417	2,137	3,150	244	7.58
1985-86	28	0.38	5,514	2,931	3,853	292	9.00
1986-87	28	0.40	7,278	2,660	4,066	366	8.35
1987-88	28	0.56	9,323	3,153	4,805	401	

Source: As in Statement I.

STATEMENT III. ADVANCES BY CENTRAL COOPERATIVE BANKS

Year	Number of Societies	Membership	Loans and Advances	Loans Recov-ered during the year	Loans Outstanding	Loans Overdue	Percentage of Overdues to Outstandings
	(lakh)	(lakh)	(Rs. Crore)				(%)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1947-48	469	1.67	63	61	22	n.a.	
1948-49	484	1.83	93	86	29	n.a.	
1949-50	498	1.90	75	76	29	3	10.34
1950-51	505	2.07	83	77	34	3	8.82
1951-52	509	2.31	106	102	36	5	13.88
1952-53	505	2.49	66	65	36	6	16.67
1953-54	499	2.48	65	62	38	7	18.42
1954-55	485	2.72	69	65	43	8	18.60
1955-56	478	2.99	80	68	54	8	14.81
1956-57	451	3.11	101	65	72	9	12.50
1957-58	418	3.23	160	79	101	12	11.88
1958-59	402	3.41	210	107	131	15	11.45
1959-60	400	3.69	297	147	176	24	13.64
1960-61	390	3.88	354	185	220	27	12.27
1961-62	387	3.99	384	208	259	41	15.83
1962-63	375	3.91	434	236	289	52	17.99
1963-64	372	3.65	529	267	340	54	15.88
1964-65	360	3.65	607	308	390	66	16.92
1965-66	346	3.61	545	322	438	87	19.86
1966-67	346	3.34	625	353	499	124	24.85
1967-68	344	3.54	727	377	549	136	24.77
1968-69	341	3.40	823	423	641	173	26.99
1969-70	340	3.12	855	497	740	215	29.05
1970-71	341	3.10	866	546	813	274	33.70
1971-72	341	3.04	1,020	638	889	319	35.88
1972-73	344	3.02	1,246	730	1,028	310	30.16
1973-74	341	3.06	1,249	759	1,163	376	32.33
1974-75	341	3.08	1,524	900	1,347	434	32.22
1975-76	344	2.98	1,722	1,066	1,428	460	32.21
1976-77	344	2.89	1,988	1,119	1.796	596	33.18
1977-78	338	2.86	2,116	1,316	2,115	754	35.65
1978-79	338	2.70	2,432	1,391	2,328	835	35.87
1979-80	337	2.76	2,695	1,341	2,617	969	37.03
1980-81	337	2.63	3,211	1,713	2,987	940	31.47
1981-82	337	2.75	4,167	2,022	3,733	1,110	29.73
1982-83	340	2.90	4,905	2,348	4.380	1,329	30.34
1983-84	349	2.84	5,110	2,294	4,707	1,567	33.29
1984-85	350	2.63	6,476	2,501	5,075	1,463	28.82
1985-86	352	2.68	7,233	2,788	5,444	1,696	31.15
1986-87	353	2.92	6,343	2,942	6,217	1,883	39.00
1987-88	351	2.82	8,515	3,486	7,915	2,044	25.82

Source: As in Statement I.

STATEMENT IV. ADVANCES BY PRIMARY LAND MORTGAGE/DEVELOPMENT BANKS

Year	Number of Banks	Membership	Loans and Advances	Loans Recovered during the year	Loans Outstanding	Loans Overdue	Percentage of Overdues to Outstandings
	(lakh)	(lakh)	(Rs. Crore)				(%)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1947-48	268	1.39	1	0.3	4	neg.	neg.
1948-49	272	1.51	1	0.4	4	0.4	10.00
1949-50	283	1.86	1	0.4	5	0.1	2.00
1950-51	286	2.15	1	0.5	6	0.1	1.67
1951-52	289	2.14	1	0.5	7	0.1	1.43
1952-53	288	2.45	1	0.5	8	0.1	1.25
1953-54	291	2.65	1	0.6	9	0.2	2.22
1954-55	292	2.91	1	1	9	0.2	2.22
1955-56	302	3.14	2	1	11	0.2	1.82
1956-57	326	3.34	2	1	12	0.3	2.50
1957-58	347	3.75	3	1	13	0.3	2.31
1958-59	363	4.40	3	1	15	0.4	2.67
1959-60	408	5.50	5	1	19	1	5.26
1960-61	463	6.69	7	2	25	1	4.00
1961-62	536	8.52	13	2	35	1	2.86
1962-63	571	10.51	19	3	51	1	1.96
1963-64	583	12.78	23	6	69	2	2.90
1964-65	643	14.93	31	7	93	2	2.15
1965-66	673	18.43	41	10	124	4	3.23
1966-67	707	21.57	41	11	155	6	3.87
1967-68	731	24.47	65	16	204	6	2.94
1968-69	740	28.42	104	22	286	7	2.45
1969-70	809	31.22	113	33	367	10	2.72
1970-71	865	35.37	104	38	448	18	4.02
1971-72	870	39.06	111	48	516	18	3.49
1972-73	855	38.28	102	45	447	18	4.03
1973-74	857	41.17	96	55	472	20	4.24
1974-75	872	44.19	111	55	518	25	4.83
1975-76	890	46.38	136	78	577	31	5.37
1976-77	892	51.52	191	84	667	52	7.80
1977-78	889	55.54	160	82	735	62	8.44
1978-79	890	56.06	170	103	796	91	11.43
1979-80	896	62.05	206	115	891	122	13.69
1980-81	858	65.66	234	159	986	130	13.18
1981-82	880	70.20	260	153	1,083	106	9.79
1982-83	885	75.27	264	141	1,212	141	11.63
1983-84	885	69.86	280	n.a.	1,262	176	13.95
1984-85	890	72.78	312	n.a.	1,247	141	11.31
1985-86	910	78.26	390	n.a.	1,326	152	11.46
1986-87	899	87.95	390	n.a.	1,461	196	13.41
1987-88	906	88.25	443	n.a.	1,494	231	15.46

Source: As in Statement I.

STATEMENT V. ADVANCES BY CENTRAL LAND MORTGAGE/DEVELOPMENT BANKS

Year	Number of Banks	Membership	Loans and Advances	Loans Recovered during the year	Loans Outstanding	Loans Overdue	Percentage of Overdues to Outstandings
	(lakh)	(lakh)	(Rs. Crore)				(%)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1947-48	0.06	5	1	03	3	neg.	neg.
1948-49	0.07	5	1	03	4	0.01	0.25
1949-50	0.09	5	1	04	5	0.01	0.20
1950-51	0.10	5	1	05	6	0.01	0.17
1951-52	0.35	6	3	04	8	0.03	0.38
1952-53	0.37	7	2	1	9	0.31	3.44
1953-54	0.50	9	2	3	10	0.30	3.00
1954-55	0.66	9	2	1	12	1	8.33
1955-56	0.91	9	3	1	13	0.24	1.85
1956-57	1.17	12	4	2	15	1	6.66
1957-58	1.20	17	5	2	19	1	5.26
1958-59	1.40	15	6	2	23	1	4.35
1959-60	1.54	18	9	2	28	1	3.57
1960-61	1.86	17	12	3	36	1	2.78
1961-62	1.94	17	15	4	48	2	4.17
1962-63	2.34	19	25	5	68	2	2.94
1963-64	2.66	18	30	7	90	2	2.22
1964-65	3.09	18	37	10	118	2	1.69
1965-66	4.03	18	56	11	163	3	1.84
1966-67	4.67	19	59	16	207	5	2.42
1967-68	5.39	19	92	22	278	2	0.72
1968-69	6.58	19	144	27	395	4	1.01
1969-70	7.96	19	153	35	512	5	0.98
1970-71	9.12	19	168	38	638	11	1.72
1971-72	10.57	19	145	53	729	13	1.78
1972-73	18.41	19	171	49	849	41	4.83
1973-74	20.14	19	147	88	914	42	4.60
1974-75	20.89	19	184	89	993	55	5.54
1975-76	21.74	19	205	114	1,069	64	5.99
1976-77	27.18	19	249	199	1,211	94	7.76
1977-78	24.34	19	239	222	1,305	127	9.73
1978-79	25.59	19	249	277	1,392	166	11.93
1979-80	26.52	19	309	258	1,535	205	13.36
1980-81	27.71	19	363	339	1,697	243	14.32
1981-82	29.05	19	370	350	1,861	191	10.26
1982-83	30.59	19	427	369	2,049	229	11.18
1983-84	33.11	19	439	364	2,236	283	12.66
1984-85	33.11	19	461	358	2,386	268	11.23
1985-86	34.72	19	533	394	2,625	323	12.30
1986-87	n.a.	19	551	438	2,829	405	14.31
1987-88	39.14	18	1,024	488	3,084	495	16.05

Source: As in Statement I.

STATEMENT VI SCHEDULED COMMERCIAL BANKS' DIRECT FINANCING TO AGRICULTURE

Last Friday of December	Number of Accounts	Limits Sanctioned	Balance Outstanding
	(lakh)	(Rs. Crore)	
(1)	(2)	(3)	(4)
1969	5.56	171.00	116.06
1970	10.49	308.97	240.38
1971	12.32	593.76	395.46
1972	14.55	377.57	310.52
1973	19.50	499.72	422.60
1974	22.67	640.17	539.49
1975	30.96	834.21	724.88
1976	44.13	1,135.14	1,002.83
1977	52.26	1,431.28	1,260.25
1978	60.73	1,908.98	1,665.07
1979	76.03	2,568.42	2,204.58
1980	85.01	3,282.52	2,789.15
1981	99.10	4,147.96	3,586.70
1982	105.13	4,678.74	4,060.54
1983	120.67	5,604.20	4,902.82
1984	138.36	7,141.40	6,135.61
1985	154.12	8,786.66	7,611.99
1986	169.71	10,493.34	9,160.35

Source: *Report on Currency and Finance*, Reserve Bank of India, Bombay, various years.

SALARIES OF CENTRAL GOVERNMENT EMPLOYEES IN INDIA

V.M. Dandekar and F.K. Wadia

The revision of salaries of Central Government officers and staff have been examined from time to time, both before and after Independence. The earliest revision took place in 1856, when the duties and responsibilities of each Office and the salaries that should be attached to them was spelt out. Since 1947, four Pay Commissions and a number of ***ad hoc*** *committees have made recommendations on the basic salary, dearness allowance, city compensatory allowance, pensions, etc., and on the streamlining of the various categories of service. As a result, we have now a well provided Central Government Service in India.*

Before Independence

The matter of salaries of officers of the covenanted civil service of the British Government of India was examined by a Commission in March 1856 under the Chairmanship of Mr. Henry Rickets. The guiding principles were: 'Wherever the duties are the same in nature and extent, me salaries should also be the same; ... Where the duties vary, the difference of salary should correspond to the difference of duty. All salaries disproportioned to the duties to be performed, or which admit of reduction, should be prospectively reduced.' Accordingly, the Commissioner prepared a statement of duties and responsibilities of each office and the salaries that should be attached to them and expressed his confidence that his report would 'be as useful in 1958 as in 1858.'

Meston Committee, 1908

Fifty years later, in 1908, the Government appointed a Committee presided over by Sir James Meston to deal with the pay and prospects of clerks in the Secretariats of the Government of India and certain other offices. At that time, the clerical establishments of the Secretariat were divided into two divisions. In view of the cost of living and the need for attracting the proper type of men, the Committee fixed the initial pay for the first division clerks at Rs 140 to reach the maximum of Rs 400. They regarded the second division as standing on a different footing because its work was assumed to be of a simple or routine character. Its recruitment was therefore held to be subject to the ordinary laws of demand and supply. They therefore fixed the initial pay for this division at Rs 60 and

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the maximum at Rs 200, adding a personal allowance of Rs 25 or Rs 50 after the 28th and 30th year of service. They were opposed to the incremental system and proposed that in each division there should be a considerable range of grades at short intervals of pay. Referring to Registrars and Superintendents, they said, 'It is a matter of high importance that both these classes of officers should be liberally paid not only on account of the responsibilities of their work but because these appointments are practically the only goals towards which the ambition of the first division can press.' They accordingly suggested Rs 800 for the Registrar and three grades of Rs 500, 600 and 700 for Superintendents. In recognition of the importance and responsibility of the work done by the Superintendents, the Committee recommended that they should be granted the rank of gazetted officers.

Report of Royal Commission on the Public Ser vices in India, 1915 (Lord Islington)

The Islington Commission was appointed in September 1912 to examine and report on (i) methods of recruitment and systems of training and probation; (ii) conditions of service, salary, leave, and pension; (iii) such limitations as still exist in the employment of non-Europeans and working of the existing system of division of services into Imperial and Provincial; and (iv) generally to consider requirements of Public Service, and to recommend such changes as may seem expedient. The Commission submitted its Report on August 14,1915.

The Commission limited its enquiry to the higher services and grouped them under three heads:- (i) those which required a preponderating proportion of British Officers, (e.g., Civil Service and Police); (ii) those in which it was thought desirable that there should be an admixture of both Western and Eastern elements, (e.g., education, military, finance, medicine, telegraph, engineering, railways, and survey of India) and (iii) scientific and technical services where they held that there were no special reasons for having a large number of officers recruited from Europe. For the fast, they decided that recruitment should continue to be made exclusively in England; for the second, they recommended that recruitment might be made both in England and in India; for the third, they were of the opinion that it should be the aim eventually to recruit in India for their normal requirements.

The Commission discussed at some length the question of salaries and laid down the broad principle that Government should pay 'so much and so much only to its employees as was necessary to obtain recruits of the right stamp and to maintain them in such a degree of comfort and dignity as would shield them from temptation and keep them efficient for the term of their service'. Regarding the salary differential between the European and Indian officers, they stated: The advantages of equal pay for all officers who do the same work are obvious. Under such a system, there can be no suspicion that Europeans are favoured at the expense of Indians, whilst the danger of racial friction in the services is reduced to a minimum. On the other hand, to set in India for the public services a standard of remuneration which is in excess of what is required to obtain suitable Indian officers is to impose for all time on the country a burden which she ought not to bear. The choice is thus between the two evils of inequality on the one hand and disregard of economy oil the other. So far as the Indian Civil Service, the Indian Medical Service, and certain other Services were concerned, the Commission felt that they should take 'existing facts' into account and they accordingly allowed that members of these services should thaw the same pay, whether they were Europeans or Indians. For the services to be recruited for in India, they drew up separate scales of pay for Europeans and Indians, respectively.

The Commission disapproved of the graded system of remuneration then in vogue and recommended substitution of an incremental system subject to the proviso that no increment should be given as a matter of right. Even among time-scales, they expressed a preference for what they called the compartment system under which 'separate scales are fixed for separate groups of officers in each department and a process of selection takes place before an officer can pass from one scale to another or from any scale into a selection post'. They suggested the following as reasonable scales of pay for Indians in the higher services:- Rs 250 - 40/3 - 450 - 50/3 - 500 per month for all the higher services recruited from the average graduate class and Rs. 300 - 50/2 - 500 - 50 - 1,050 for services requiring higher initial qualifications; beyond these, they provided selection scales or posts. Further, they recommended amalgamation of the Imperial and Provincial Sections into a single service and suggested that over and above the subordinate services there should be two classes in the services under the Government of India to be described as Class I and Class II.

The consideration of the Commission's report had to be deferred during the First World War, 1914-1918. Final orders on their proposals were passed only during 19 19-20; and in doing so the authorities took into account the further rise in prices that had taken place between 1912 and 1920. The Commission's recommendations were mainly responsible for the system of classification and pay scales obtaining in the country at the time of Independence.

Report of the Royal Commission on the Superior Civil Services in India, March 1924

With the passage of the Government of India Act, 1919 and changes in the recruitment policy, it was hoped that the primary cause of unrest in India would be eliminated. However, unrest increased. Within four years from the passing of the Government of India Act, the Secretary of State and the Government of India were obliged to reconsider the whole question of the Services. Accordingly, in June 1923, a second Royal Commission on Superior Services in India was appointed to enquire into and make recommendations on: (i) organisation and general conditions of service, financial and otherwise, of those services; (ii) possibility of transferring immediately or gradually any of their present duties and functions to services constituted on a provincial basis; (iii) recruitment of Europeans and Indians respectively for which provision should be made under the Constitution established by the said Act, and the best methods of ensuring and maintaining such recruitment. The Commission submitted its Report in March 1924.

The Commission classified the superior civil services under three heads, viz., (i) Services operating in the reserved fields of administration, namely, Indian Civil Service, Indian Police Service, irrigation Branch of Indian Service of Engineers (whole cadre of this service in Assam), and except in the Provinces of Burma and Bombay, Indian Forest Service. For all these Services, the Commission recommended that appointments should be controlled by the Secretary of State in Council such that 50 per cent of posts should go to Indians within 15 years in ICS and within 25 years in IPS. Apart from Indian Police Service and Indian Service of Engineers, the Commission did not recommend any increase in the basic pay of the Services. In Indian Police Service, the basic pay of the inferior scale was to be raised by Rs. 25 a month and of the superior scale which began at the sixth year of service by Rs. 50 a month up to the tenth year, then by Rs. 75 a month to the thirteenth year of service, Rs. 100 per month for the ensuing four years, then by Rs. 75, Rs. 50 and Rs. 25 a month for the 18th, 19th and 20th year of service, thereafter remaining at the scale then prevailing. For Indian Service of Engineers, their technical pay of Rs. 75 per month was to be included in the basic pay. (ii) Services operating in the transferred fields, namely, Indian Educational Service, Indian Agricultural Service, Indian Veterinary Service and Indian Forest Service (in Burma and Bombay) and Roads and Buildings Branch of Indian Service of Engineers (except in Assam). The Civil side of Indian Medical Service also fell within this category but was discussed separately. For all these services, the Commission recommended that Local Governments should have powers to recruit personnel in future. The Local Legislatures should pass Public Service Acts, setting up Public Service Commissions, for regulating selection to these services. The Commission did not recommend any increase in the basic pay of these services, except for Women's Educational Service for which the Government of India was requested to give special consideration to enhance their emoluments and make necessary recommendations to the Secretary of State. (iii) Central Services, namely, appointments to Political Department, Imperial Customs Department and Ecclesiastical Department. All the appointments to the three Departments were to be made by the Secretary of State in Council. No revision in their basic pay was recommended.

The Commission recommended a number of concessions for Europeans Officers in the three groups mentioned above. These included (i) a rise in overseas pay from Rs. 150 to Rs. 250 a month until the twelfth year of service and from Rs. 250 to Rs. 30() a month thereafter; (ii) four return passages during their service, (iii) higher pensions and (iv) remittance of money to England at the rate of 2 shillings to a rupee.

Between 1908 and 1928, all classes of public servants under the Central Government had their emoluments increased, in some instances more than once. When the economic crisis of 1929-30 set in, Government had to review the whole position. To meet the immediate emergency, certain percentage cuts were made in the salaries of most public servants for four years. On the suggestion of a Retrenchment Advisory Committee, the question of revision of rates of pay for 'future entrants' was taken up. Recommendations on this behalf were made by certain sub committees of the Retrenchment Advisory Committee; and Mr. (Sir Tenant) Sloan was placed on special duty to examine the subject and make proposals.

A uniform percentage reduction was considered undesirable; it was felt that it would be better to make heavier cuts at the top. Some coordination between the

Central and Provincial Services was considered appropriate and a sub-committee of the conference of Provincial representatives concluded (May 1931) that pay of Class I Officers should be fixed at Rs. 300 to 1,000 per month, that pay of administrative heads of the biggest departments should be fixed at Rs. 1,600 to 2,000, pay of heads of other departments at Rs. 1,450 to 1,750 and of deputy heads at Rs. 1,250 to 1,500. Uniformity of scales as between different departments was not considered practicable. In the light of these considerations, a revised scale of salary was drawn up involving a reduction of over 20 per cent in the minimum and of nearly 30 per cent in the maximum of the existing salaries.

Though the revised scales were settled only late in 1933, they were made applicable to all persons who had entered service after July 1, 1931. As regards persons already in service, the new scales were not made applicable to them. There thus came into vogue the system of two scales of pay - referred to as the old and new scales - according to which among two sets of persons working side by side and doing the same kind of work, one set of people had been thawing salaries according to the higher scale and the other set paid according to a lower scale.

With outbreak of the Second World War in 1939, prices particularly of foodgrains began to rise and, about the middle of 1940, the Government of India sanctioned a scheme of grain compensation allowance for their lower paid employees. In August 1942, this was replaced by a scheme of dearness allowance. The country was divided into three areas (A, B and C) in accordance with the difference in cost of living. The classification followed an existing arrangement adopted by the Posts and Telegraph Department for purposes of pay scales. Subsequently, a number of towns which showed a marked rise in cost of living were upgraded. The beneficiaries were divided into two classes, those receiving Rs. 40 per month and above and those receiving less. In view of the difference in the wage and standard of living between the two categories, a slightly lower rate of dearness allowance was adopted for persons drawing less than Rs. 40. The scheme was commended to the Provincial Governments and was in operation in 1946-47 with minor changes to suit local needs.

In the first instance, dearness allowance was granted only to non-gazetted employees. Later on, the rate of allowance as well as the maximum pay limits were raised from time to time but the increases sanctioned were in no way proportionate to the rise in prices. Later still, it was thought proper to grant some relief even to higher officers and a 'war allowance' equal to 17-1/2 per cent of pay was sanctioned with effect from July 1, 1944 for all married gazetted officers up to certain pay limits and for non-gazetted officers drawing pay above the maximum limits fixed for eligibility to dearness allowance. The rate of allowance was however restricted to 7-1/2 per cent of pay in the case of unmarried gazetted officers. The maximum pay limit up to which war allowance was granted to married officers was Rs 2,000 per month and in the case of single officers Rs 1,000. This allowance was subject to a minimum of Rs 50 per month and a maximum of Rs 263 per month in the case of married gazetted officers and a minimum of Rs 30 per month in the case of single gazetted officers.

In Railways, officers drew dearness allowance on the scale of war allowance fixed for Government officers. As regards subordinate employees, the Government of India, after consultation with the All-India Railwaymen's Federation, decided on the following scales:- Bombay and Calcutta including suburbs - Rs. 3 to those drawing Rs. 60 per month and below; Industrial Areas - Rs. 2-8-0 to those drawing Rs. 50 per month and below; and Other Areas - Rs. 2 to those thawing Rs. 30 per month and below. Certain grain shop concessions were also allowed to the subordinate employees of railways. Subsequent increases in the rates of dearness allowance were also made in consultation with the Federation on an *ad hoc* basis to meet the rise in prices. The rate of relief as well as the maxima of pay were raised from time to time. Similar changes were made in the scheme of dearness allowance for other employees of the Central Government Arrangements were also made for the relief of employees in the Posts and Telegraph Department.

Report of the Central Pay Commission, April-May 1947

As conditions of life became more difficult during the later years of the war, claims, representations, and protests from several sections of the services increased. There were also threats of strike. Ultimately, on May 10, 1946, the Government of India setup a Central Pay Commission (hereafter referred to as the First Pay Commission) with Mr. Justice S. Varadachariar as Chairman. The Commission submitted its Report in April/May 1947. The Report was divided into three Parts. Part I was mainly historical. Part II dealt with the main aspects of the problem relating to conditions of service so far as they were common to all departments of the Central Services. Part III made detailed proposals in respect of salaries payable to and redress of grievances of employees of each of the principal sections of public service.

The Commission recommended change in the nomenclature of categories of Government servants from 'subordinate' and 'inferior' to Class III and Class IV. Thus four classes of Government servants were recommended - Class I, II, III and IV. The Commission presumed that cost of living index would stabilize somewhere between 160 and 175 taking the pre-war index to be 100 and recommended a series of scales of salaries which could be common to all Central Departments. The Commission suggested that Rs. 55 and Rs. 90 were reasonable living wages for a working class family and a middle class family, respectively, at a cost of living index of about 260. Of these sums, Rs. 30 and Rs. 55, respectively were to be the basic pays and the balance the dearness allowance. The Government, while generally accepting the recommendations of the Commission, prescribed over 500 scales instead of the 156 recommended by the Commission. But more than 75 per cent of the staff were in about 30 typical scales (Table 1).

Table 1. Typical Pay Scales Prescribed By Government

(Rupees)

1. 1,800 - 100 - 2,000	16. 160 - 10 - 250
2. 1,600 - 100 - 1,800	17. 150 - 7 - 185 - 8 - 225
3. 1,300 - 60 - 1,600	18. 80 - 5 - 120 - EB - 8 - 200 - 10/2 - 220
4. 1,000 - 50 - 1,400	19. 100 - 5 - 125 - 6 - 155 - EB - 6 - 185
5. 600- 40 - 1,000 - 1,000 - 1,050 - 1,050 - 1,100 - 1,100 - 1,150	20. 80 - 4 - 120 - 5 - 170
6. 350 - 350 - 380 - 380 - 30 - 590 - EB - 30 - 770 - 40 - 850	21. 60 (or 64,68,72) - 4 - 120 - EB - 5 - 170
7. 500 - 30 - 650 - EB - 30 - 800	22. 80 - 5 - 120 - 8 - 160
8. 275 - 25 - 500 - EB - 30 - 650 - EB - 30 - 800	23. 60 - 4 - 120 - 5 - 150
9. 160 - 10 - 300 - 15 - 450	24. 60 - 3 - 81 - EB - 4 - 125 - 5 - 130
10. 250 - 15 - 400	25. 75 - 3 - 105
11. 300 - 20 - 400	26. 55 - 3 - 85
12. 260 - 15 - 350	27. 60 - 5/2 - 75
13. 160 - 10 - 330	28. 40 - 1 - 50 - 2 - 60
14. 200 - 10 - 300	29. 35 - 1 - 50
15. 100 (124) - 8 - 140 - 10 - 200 - EB - 10 - 300	30. 30-1/2 - 35

The scales were all ‘prescribed scales’ and came into force in or after 1947. Exceptions were made in the case of Indian Civil Service and Indian Police Service officers whose grades were kept higher than those recommended by the Commission.

To assess further rise in cost of living, the Commission suggested that the index should be an All-India number to be prepared by the Economic Adviser to the Government of India and that changes in the index should be reflected in dearness allowance every six months. The Commission recommended the following slabs of dearness allowance based on average cost of living index for different cities in the country (Table 2).

Government sanctioned dearness allowance on the basis of the Commission’s recommendations as from August 16, 1947. In addition, they extended the dearness allowance scheme to pay ranges above Rs. 1,000 and up to Rs. 2,150 on the following basis:

Rs. 1,001 - 2,000 ... 10 per cent of pay subject to a maximum of Rs. 150

Rs. 2,001 - 2,150 ... the amount by which the pay fell short of Rs. 2,150.

Table 2. Dearness Allowance Based on Cost of Living

(Rupees)

Pay Range Rs.	Cost of Living Index (Base 1939 - = 100)						
	280	260	240	220	200	180	160
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Upto Rs. 50	30	25	20	15	10	5	-
51-100	40	35	30	25	15	10	-
101-150	45	40	35	30	18	-	-
151-200	55	45	30	30	20	-	-
201-250	60	50	40	30	20	-	-
251-300	75	60	45	30	25	-	-
301-500	85	70	55	40	25	-	-
501-750	105	85	60	40	-	-	-
751-1,000	125	100	75	50	-	-	-

For unmarried gazetted officers, the dearness allowance was fixed at 10 per cent of pay for salaries below Rs. 1,000 subject to a minimum of Rs. 40 and a maximum of Rs. 75 per month; and for the pay range Rs. 1,00l - 1,075, by the amount by which the pay fell short of Rs. 1,075. The Commission had recommended a six-monthly review of dearness allowance and for a revision of the slab rates upward or downward, as the case might be, if the cost of living index number for the last three months for which the information was available, showed a variation of 20 points. Instead, the Government granted an *ad hoc* increase of Rs. 10 in January 1949 and of Rs. 5 in June 1951 to all persons whose pay did not exceed Rs. 250 per month. On account of some marginal adjustments, employees in the pay ranges of Rs. 251 - 300 also got the increase on both these occasions. By 1952, the dearness allowance payable to the lowest pay group of employees (Rs. 30 - 35) was Rs 40 per month.

Report of the Dearness Allowance Commission, 1952

In July 1952, the Government of India set up a Committee to advise on the 'percentage of the dearness allowance now given to Central Government servants which should be allowed to be treated as pay for all purposes in future provided that, by doing so, the present total of pay and dearness allowance is not enhanced'. The Committee recommended that for employees up to a pay of Rs. 750 p.m., 50 per cent of the dearness allowance drawn at present should be treated as pay. It also made recommendations of the manner in which computation of pension, house rent allowance, leave salary, etc., could be made with the inclusion of half the dearness allowance with pay. Government accepted the recommendations, and from April 1, 1953, half the dearness allowance payable to persons whose pay did not exceed Rs. 750 per month was treated as pay for certain purposes.

In August 1957, the Government of India set up the Second Pay Commission called the 'Commission of Enquiry on Emoluments and Conditions of Service of the Central Government Employees'. The Commission submitted an Interim Report in December 1957 and, accordingly, an increase of Rs. 5 per month to all employees drawing pay of not more than Rs. 250 per month was granted with effect from 1st July 1957. As on two previous occasions, the benefit was extended to employees in the pay range of Rs. 251-300.

Report of the Second Pay Commission, August 24, 1959

The Commission submitted its final Report in August 1959. It referred to the structure of emoluments built up over the years based on the First Pay Commission's recommendations. That Commission had "introduced a principle that, as a matter of social policy, the lowest rate of remuneration should not be lower than a 'living wage' and .... the highest salaries should also, as a matter of social policy, be kept down as far as possible, consistent with the essential requirements of recruitment and efficiency. The minimum and maximum having been so determined, the intermediate salaries were fixed largely on considerations of maintaining or establishing satisfactory vertical relativities within a service or a hierarchy of services, and horizontal relativities between one set of services and another." Hence, the Commission opined that "until the economy develops, no substantial improvement in the standard of living of ... the great majority of Government servants (was) possible". But then it hastened to add that "Development planning does not, however, postulate a general reduction in the standard of living ... while thinking of investments and development, it is well to remember that our Plan has social as well as economic objectives, and that investment in human beings is not the one that is least important, or one that brings no return" [Jagannadhadas, 1959, Pp 18-19, 45].

The minimum remuneration of a Central Government employee then was Rs. 75 which the Commission thought was reasonable in view of the minimum wages fixed (between Rs. 30 and Rs. 52.50) under the Minimum Wages Act, 1948. The minimum remuneration had risen from Rs. 55 in 1947 to Rs. 75 in 1958. The Commission compared this rise with the all-India Working Class Consumer Price Index and computed the minimum emoluments which would be necessary for full neutralisation at different dates (Table 3).

Table 3. Minimum Emoluments Based on All-India Working Class Consumer Price Index

Year	Average Minimum Remuneration Including D.A. (Rs.)	Average Consumer Price Index (Base: 1949=100)	Index of Real Minimum Remuneration (a) Jan 47 = 100 (Co12/55)/(Col.3/80)	Minimum Remuneration Including DA required for full neutralisation (a) 55 x (Col.3/80) (Rs.)
(1)	(2)	(3)	(4)	(5)
1947	55	87	92	60
January	55	80 (b)	100	55
1948	55	97	82	67
1949	65	100	95	69
January	65 (c)	100	95	69
1950	65	101	94	69
1951	68	105	94	72
June	70(d)	106	96	73
1952	70	103	99	71
1953	70	106	96	73
1954	70	101	101	69
1955	70	96	106	66
1956	70	105	97	72
1957	73	111	95	76
July	75 (e)	113	97	78
1958	75	116	94	80

(a) Calculated on the assumption that the minimum remuneration of Rs. 55 corresponds to consumer price index of 285 with August 1939 as base, or 80 with 1949 as base. (b) Index for January 1947 was assumed, on the limited information then available, to be 285 with August 1939 as base. More reliable information since available places the index for January 1947 at 289 with August 1939 as base. However, for the purpose of this table, the figure of 80 is retained. (c) An increase of Rs. 10 in dearness allowance was allowed with effect from 1st January 1949. On time basis of avenge consumer price index for preceding 12 months (data for 6 months were not available), minimum remuneration would be Rs. 67. (d) An increase of Rs. 5 in dearness allowance was allowed with effect from 1st June 1951. On the basis of average consumer price index for preceding six months (which was 108). minimum remuneration would be Rs 70. (e) The interim increase of Rs. 5 in dearness allowance was allowed with effect from 1st July 1957. On the basis of the avenge consumer price index for the preceding 6 months (which was 108), the minimum remuneration would be Rs. 74.

Thus, with consumer price index at 116, a remuneration of Rs 80 would restore the real income of the employees, on the lowest pay, to the level at which it was in 1947. Hence, the Commission recommended that the minimum remuneration payable to a Central Government employee should be increased to Rs. 80 per month. As regards the highest salary scales, the Commission pointed out the significant reduction in disparity between the starting salary of an IAS Officer and a peon since 1947-48, "from 1:6.9 to 1:5.1, or taking a married lAS Officer from 1:7.4 to 1:5.5. ... If the lowest scale of pay" was "raised to 70-1-85, with a dearness allowance of Rs. 10/- the disparity both at the starting and maximum levels would be further reduced" [Jagannadhadas, 1959, Pp. 79-80]. Therefore, "keeping in view the necessity of maintaining a high standard of recruitment to the superior services, and the erosion of the real income which had taken place", the Commission did not recommend any reduction in the salaries prescribed for the highest grades [Jagannadhadas, 1959, p. 576].

Having recommended the lowest and highest scales of pay for Central Government employees, the Commission worked out in all about 140 scales and fixed rates of pay for Classes I, II, Ill and IV employees. These scales were determined with reference to the requirements of different services, grades and occupational groups and were generally accepted by the Government. Regarding dearness allowance, the Commission recommended that it should continue as a separate element in remuneration of Central Government employees whose salaries were below Rs. 300 per month. In future adjustments of dearness allowance to meet rise in prices, the case of employees in pay-range of Rs. 300-400 should be grouped with those in pay-range below Rs. 300. Should consumer price index continue to rise, the case of employees in pay range of Rs. 400-1,000 for grant of dearness allowance may be considered. There should not be an automatic adjustment of dearness allowance with price index. Nevertheless, it should be Government's endeavour not to allow the standard of living of their employees in lower range of remuneration to fall.

For the employees thawing pay below Rs. 300 per month, the Commission recommended the following rates of dearness allowance:

(a) basic pay below
Rs. 150 ... Rs. 10 per month.
(b) basic pay of Rs. 150
or above but below
Rs. 300 ... Rs. 20 per month.

There should be marginal adjustments for employees drawing a basic pay of Rs. 300 or above but below Rs. 320 per month.

The rates of dearness allowance recommended by the Pay Commission were accepted by the Government of India and they were brought into force from July 1, 1959. With rise in working class consumer price index, rates of dearness allowance were revised from time to time (Table 4).

Table 4. Rates of Dearness Allowance

(Rupees)

Pay Range	From 1-7-1959	From 1-11-1961	From 1-7-1963	From 1-2-1964
Below 110	10	15	17	20.50
110 and above but below 150	10	15	20	25.50
150 and above but below 210	20	30	35	42.00
210 and above but below 300	20	30	40	50.00
300 and upto 320	Amount by which pay falls short of 320	Amount by which pay falls short of 330	Amount by which pay falls short of 340	...
300 and up to 315				Amount by which pay falls short of 350
321 and upto 380			20	
381 and upto 390			Amount by which pay falls short of 400	
391 and above		Amount by which pay falls short of 400	Amount by which pay falls short of 400	

Pay Range	From 1-2-1964
316-384	35
385 and upto 400	Amount by which pay fails short of 420
401 - 580	20
581 and above	Amount by which pay falls short of 600

It may be noted that while increasing the rates of dearness allowance from 1st July 1963, Government split up the two categories of employees drawing pay below Rs. 300, into four categories as indicated by the Pay Commission: (a) Below Rs. 110; (b) Rs. 110 and above but below Rs. 150; (c) Rs. 150 and above but below Rs. 210; and (d) Rs. 210 and above but below Rs. 300.

The marginal adjustments were continued upto Rs. 399 except that, for the pay range of Rs. 316 to Rs. 384, a sum of Rs. 35 was fixed as dearness allowance from February 1, 1964 with a marginal adjustment between Rs. 385 and upto Rs. 400, and, for the pay range of Rs. 401 to Rs. 580, a sum of Rs. 20 was fixed as dearness allowance with a marginal adjustment in the pay range of Rs. 581 to Rs. 600. In other words, Government not only gave effect to the recommendations of the Pay Commission that benefit of dearness allowance should, in future adjustment, be extended to all employees drawing basic pay below Rs. 400 per month but also granted dearness allowance to employees drawing pay upto Rs. 599.

After World War I, compensatory allowances were granted to All-India Service Officers working in a number of high-cost cities like Bombay, Calcutta, Karachi, Madras and Rangoon. Following the fall in prices and the introduction of revised scales of pay subsequent to 1931, these allowances came under review and were either withdrawn or reduced. By the time the First Pay Commission was appointed (1947) compensatory allowance was allowed to gazetted officers as also non-gazetted staff of certain organisations in Bombay and Calcutta. In its Report that Commission recommended that local allowances at the following rates might be paid to all non-gazetted staff serving in Bombay and Calcutta (Table 5).

Table 5. City Compensatory Allowance for Bombay and Calcutta

(Rupees)

Pay	Amount of Allowance
Not exceeding 35	5.00
35-60	7.50
61-80	10.00
81-140	12.50
141-200	15.00
201-300	17.50
301-500	20.00

The First Pay Commission had also suggested that Government should make a review of conditions prevailing in other high-cost cities and decide to what extent similar benefits may be extended to staff serving in those cities. The Second Pay Commission recommended modified rates of city compensatory allowance as given in Table 6.

Table 6. City Compensatory Allowance

	Class of Cities		
	A	B	C
Below Rs. 150	10% of pay subject to a minimum of Rs. 7.50 and a maximum of Rs. 12.50	5% of pay subject to a minimum of Rs. 5 and a maximum of Rs. 10 for all persons drawing below Rs. 500 per mensem	Nil
Rs. 150 and above but below Rs. 300	8% of pay subject to a minimum of Rs. 12.50 and a maximum of Rs. 17.50		
Rs. 300 and above	6% of pay subject to a maximum of Rs. 75		

A:- Bombay & Calcutta; B:- Cities with Population over 5 lakh; C: Cities with Population over 1 lakh.

Higher allowances were recommended for Simla and Shillong and other hill stations.

One-Man Independent Body to Enquire into the question of Dearness Allowance Payable to Central Government Employees, January 1965

Certain associations of Government employees represented to Government that the increase of dearness allowance which Government had sanctioned from time to time was not adequate. Accordingly, on August 27, 1964, Government appointed Justice S.K. Das as an Independent Body to examine the question. Justice Das submitted his Report on January 1, 1965. He referred to the dearness allowance formula as recommended by the Second Pay Commission and accepted by the Government which considered revision of dearness allowance if the average cost of living index, over a period of twelve months, rose or fell by ten points. Justice Das opined that, in the context of the rise in prices since 1958, the formula did not fulfil its primary purpose; (a) it did not ensure a just compensation for a substantial fall in their real income; and (b) it delayed the consideration over an inordinately long period; hence, as long as prices did not stabilise, some modification of the formula was necessary to deal with abnormal situations.

The consumer price index (1949 =

100) had reached 145 in September 1964 and Justice Das recommended the following dearness allowance with effect from October 1, 1964 (Table 7).

Table 7. Dearness Allowance Recommended By Justice Das

	Pay Ranges (Rs.)	Neutralization for each pay range on the basis of the lowest paid employee in the range (per cent)	Dearness allowance Recommended as from October 1, 1964 (Rs.)
1.	70-109	90	28
2.	110-149	85	42
3.	150-209	80	54
4.	210-399	70	66
5.	400-599	40	70
6.	600-799	30	80
7.	800-999	24	85
8.	1,000-1,200	20	90

The Government accepted the recommendations *in toto* in respect of pay upto Rs. 600 per month. But, the consumer price index continued to rise. When, in February 1965, it reached 155 and later, in November 1965, reached 165, the Government revised the rates of dearness allowance by neutralisation upto 75 per cent of the increase in index in respect of pay ranges Rs. 70-109, Rs. 110-149, Rs. 150-209 and, for pay range Rs. 210-399, 70 per cent neutralisation at the average Index 155 and 60 per cent neutralisation at the average Index 165. Government also sanctioned with effect from March 1, 1965 dearness allowance for those employees who drew pay in the salary range of Rs. 600- 1,000. A year later, dearness allowance at an *ad hoc* rate of Rs. 100 p.m. was granted to employees drawing pay between Rs. 1,000 and Rs. 2,250.

The revision of dearness allowance did not satisfy the employees and on their behalf a persistent demand was made for due revision of dearness allowance at least according to the pay ranges recommended by Justice Das. Government therefore, appointed another Commission on July 26, 1966 to examine the question and, specifically, to report on the following issues:- (a) Considering that the non-plan Revenue expenditure of State Governments gets reflected in the financial assistance given by the Centre on the recommendations of the Finance Commissions and in the annual plan allocations, and having regard to the existing disparities between the pay scales of Central and State employees, is it justifiable to follow a different policy at the Centre from the States and to treat the employees of the former more liberally in the matter of dearness allowance; (b) Any relief which the Central Government gives to its employees entails a burden on the rest of the community, particularly other vulnerable sections with fixed incomes. To what extent should Government give preferential treatment to that section of the community which is directly under its employ? (c) Is it justifiable to compensate Government employees for rise in prices due to taxation and other policy-induced causes, or to occasions such as severe crop failure or a threat to national security necessitating higher levels of expenditure? (d) Should the capacity of Government, and therefore of the community, to pay be the determining factor for granting relief to Government employees? To what extent can this be reconciled with the concept of dearness allowance as a device to protect, to a varying degree, the real income of salaried employees from the effects of rise in prices?

The Commission submitted two reports: One on October 8, 1966 which referred to the question of adequacy of dearness allowance admissible to Central Government employees as from 1st December 1965; the other on May 29, 1967 relating to the question of the grant of dearness allowance to Central Government employees in future.

The Commission could not agree with the Government's contention that the rates of neutralisation of every 10 point rise in the All-India Working Class Consumer Price Index (Base 1949 = 100) should be lower than that recommended by Justice Das. It was also unable to accept the contention of the employees' associations of cent per cent neutralisation. The Working Class Consumer Price Index had reached the level of 165 in November 1965 and 175 in July 1966. The Commission recommended that dearness allowance be paid to the employees drawing pay below Rs. 400 per month at the rates specified by the Das Commission from 1st December 1965 for the entire rise of 65 points and from 1st August 1966 for the entire rise of 75 points. This was accepted by the Government and given immediate effect. In its second Report, the Commission recommended: (i) that compensation to the employees for future rise in prices should be given in the form of additional dearness allowance, as no alternate form of assistance was feasible and practicable; (ii) that for determining the additional dearness allowance admissible from time to time, the All-India Working

Class Consumer Price Index (1949 = 100) be used until such rime as the All-India Working Class Consumer Price Index (1960 = 100) was prepared, published, and accepted, with a suitable linking factor; (iii) that increases in additional dearness allowance be made with reference to every ten-point rise in the twelve-month average of the said Index; (iv) that additional dearness allowance be paid to such employees as draw basic pays ranging from Rs. 70 to Rs. 575 per month, as set out in the Table 8; (v) that in the event of a fall in prices, reduction in dearness allowance be made at the same rates and under the same conditions as for the rise in prices; (vi) that any upward or downward adjustment in regard to dearness allowance, as specified in clauses (iv) and (v) above, should be automatic; (vii) that the aforesaid recommendations should remain in force until the expiry of two years from the date of theft acceptance *or* until the twelve-month average of the All-India Working Class Consumer Price Index (1949 = 100) reaches 245, whichever is earlier (viii) that at the expiry of two years as aforesaid or immediately after the twelve month average of the Index (1949 = 100) reaches 245, whichever is earlier, the Government should undertake the revision of pay scales of all the employees, and sanction suitable interim relief pending such pay revision; (ix) that recommendations (i) to (viii) above were and formed part of an integrated scheme (Table 8).

Government granted additional dearness allowance to its employees in February 1967 when the average index stood at 185 and again in June 1967 (195), November 1967 (205) and September 1968 (215).

Third Central Pay Commission, 1973

In April 1970, the Government set up the Third Pay Commission. Among other things, it was asked to examine the Central Government employees' demand for a need-based minimum wage recommended by the 15th Indian Labour Conference. The Commission was to make its recommendations having regard, among other relevant factors, to the economic conditions in the country, the resources of the Central Government and the demands thereon such as those on account of developmental planning, defence, and national security, the repercussions on the finances of the State Governments, public sector undertakings, local bodies, etc.

Table 8. Dearness Allowance Recommended, 1967

Pay Range (Basic Pay without Dearness Allowance) (Rs.)	Percentage of Neutralisation for a 10-Point rise in the avenge of the Index above 175 (%)	Amount of Dearness Allowance for a 10-Point rise (Rs.)	Dearness Allowance now being paid at Index 175 (Rs.)	Additional Dearness Allowance to be paid in future when the avenge of the Index reaches					
				185 (Rs.)	195 (Rs.)	205 (Rs.)	215 (Rs.)	225 (Rs.)	235 (Rs.)
70-109	90	6	47	6	12	18	24	30	36
110-149	60	7	70	7	14	21	28	35	42
150-209	55	8	90	8	16	24	32	40	48
210-399	45	9	110	9	18	27	36	45	54
400-449	25	10	120	10	20	30	40	50	60
450-499	24	11	120	-	-	33	44	55	66
500-575	24	12	120	-	-	-	-	60	72

The average consumer price index (base 1949 = 100) for the twelve month period ending June 1970 was approximately 218. Hence, pending the submission of its final report, the Commission, in September 1970, recommended interim relief (Table 9).

Table 9. Interim Relief, September 1970

Pay Range (Rs.)	Amount of Interim Relief per month (Rs.)
Below 85	15
85-209	25
210-499	30
500 - 1250 (with suitable marginal adjustments)	45

The interim relief was to be given with effect from 1st March 1970. The overall financial implications were estimated at Rs. 102.90 crore per annum. The Commission pointed out "that it would be an exercise in futility to keep on increasing the emoluments of Central Government employees, if these" were "largely wiped out soon afterwards by increases in prices of goods and services". There was therefore paramount need to maintain price stability. Government should take "fiscal, monetary and other measures, including control over production and distribution, to maintain the price line. ... If, however, the price situation remains intractable despite all the measures the Government" might take, "a review" would be called for by the Commission "when the 12-monthly average of the index reached 228" [Raghubeer Dayal, 1973, p. 171]. Government accepted the recommendations of the Commission and issued necessary orders.

The 12-monthly average index ending September 1971 reached 228 and on

November 27, 1971, the Commission recommended the grant of additional interim relief with effect from 1st October, 1971 (Table 10).

Table 10. Interim Relief, October 1971

Pay Range (Rs.)	Amount of Interim Relief per month (Rs.)
Below 85	7
85-209	8
210-499	10
500 - 1250 (with suitable marginal adjustments)	15

The additional interim relief was estimated to cost Rs. 37 crore for a full year. A review would be necessary if the Index average reached 238. Government accepted these recommendations.

The monthly index of the All-India Working Class Consumer Price Index (1949 = 100) rose to 249 in July 1972 and the index average for 12 months reached 238.58. The Commission pointed out that the price rise had been of such an order that grant of further interim relief to lower paid Government employees was desirable. However, if the Government were "of the view that having regard to the Government's own finances and to the need to restrain inflationary pressures, no further interim relief should be granted ... then the freeze in wages should be of general applicability and not confined to Government employees." The Commission referred to the various factors responsible for the spurt in prices which had placed a heavy burden on finances of the Central Government In the circumstances, while being "fully conscious of the difficulties of Government employees ... a certain measure of austerity (was) called for." The Commission therefore, recommended that the upper pay limit for the grant of the third interim relief be fixed at Rs. 575 p.m. instead of Rs. 1,250 p.m. and that the maximum amount of relief be brought down from Rs. 15 to Rs. 10 p.m. The additional interim relief was to be paid with effect from 1st August 1972 (Table 11).

Table 11. Interim Relief, August 1972

Pay Range (Rs.)	Amount of Interim Relief per month (Rs.)
Below 85	7
85 - 209	8
210 - 575 (with suitable marginal adjustments)	10

The additional interim relief was estimated to cost Rs. 35.93 crore for a full year in respect of the Central Government employees including Armed Forces personnel and employees in Union Territories. The recommendations were accepted by the Government [Raghubeer Dayal, 1978, Pp. 177-178].

Report of the Third Pay Commission, March 31, 1973

The Commission submitted its main Report on March 31, 1973. It reviewed the increases in the wage bill of the Government of India since the sixties. The continuous pressure exerted by the rise in prices on the cost of living was such that from 1959 to date Government had to grant additional D.A./Interim relief as many as 16 times and refer the D.A. issue for review first by the Das Body in 1964, and second by the Gajendragadkar Commission in 1966. The present Pay Commission had also to recommend three interim reliefs during a span of two years. Table 12 shows the dates from which additional D.A./Interim relief was granted and the additional cost thereof.

Table 12. Grant of Additional D.A./Interim Relief, 1959-72

Date of Grant	Annual Avenge Index Level	Total Cost per Annum (Rs. Crore)
1-7-1959	115	31.74
1-11-1961	125	16.14
1-7-1963	ad hoc	10.85
1-2-1964	135	17.36
1-10-1964	145	36.38
1-3-1965	155	25.21
1-12-1965	165	24.90
1-12-1965	165 (Revised)	10.60
1-8-1966	175	28.60
1-2-1967	185	29.05
1-6-1967	195	29.05
1-11-1967	205	30.00
1-9-1968	215	30.00
1-3-1970	218	97.43
(Order issued in September 1970)		(Interim Relief)
1-10-1971	228	37.08
(Order issued in December 1971)		(Interim Relief)
1-8- 1972	238	35.93
		(Interim Relief)
	16 times	

Besides these, the quantum of compensatory city allowance and house rent allowance also rose due to changes in classification of cities and conversion of major part of D.A. as dearness pay for calculation of such allowances. Other concessions granted included revision of daily allowance in 1971, enhancement of night duty allowance and running allowance for railway employees in 1970-72, etc.

The wages and salaries bill of the Central Government in respect of regular employees alone had increased from Rs. 417 crore in 1960-61 to Rs. 1,186 crore in 1970-71. This was largely due to improvement in wages and salaries, but partly also due to an increase in the number of employees. Between 1960-61 and 1969-70, for example, the number of employees increased from 20.94 lakh to 28.51 lakh; an increase of about 36.2 per cent over nine years, while the increase in the wages bill was 152.8 per cent.

The increase in the wages and salaries bill was viewed by the Commission, against growth of receipts and total expenditure. Table 13 shows the trends in the growth of wages and salaries bill of the Central Government from 1960-61 to 1987-88 and its relationship with growth of revenue receipts and expenditure.

(The Third Pay Commission covered the period from 1960-61 to 1970-71. We have extended the table upto 1987-88 for ready reference and comparison.)

Thus over the years, both revenue expenditure and revenue receipts increased faster than the wages and salaries bill. From 1960-61 to 1970-71, the wages and salaries bill increased by 184.7 per cent, when revenue receipts went up by 235.7 per cent and revenue expenditure by 236.4 per cent From this, the Commission concluded that there was "some leeway for raising the wage and salary levels without placing an undue strain on the exchequer."

Table 13. Wages and Salaries Bill of Central Government Employees

Year	Revenue Budget		Wages & Salaries Bill	Wage Bill as percentage of	
	Total Revenue Receipts (a) (Rs. Crore)	Total Revenue Expenditure (b) (Rs. Crore)	Amount Value (c) (Rs. Crore)	Revenue Receipts	Revenue Expen-diture
1960-61	1,297	1,246	417	32.2	33.5
1961-62	1,488	1,363	445	29.9	32.6
1962-63	1.930	1,817	492	25.5	27.1
1963-64	2,381	2,193	581	24.4	26.5
1964-65	2,617	2,343	663	25.3	28.3
1965-66	3,022	2,703	754	25.0	27.9
1966-67	3,280	3,051	856	26.1	28.1
1967-68	3,358	3,254	940	28.0	28.9
1968-69	3,671	3,590	1,007	27.4	28.1
1969-70	3,998	3,873	1,053	26.3	27.2
1970-71	4,354	4,191	1,186	27.2	28.3
1971-72	4,028	4,128			
1972-73	4,578	4,592			
1973-74	5,073	4,836			
1974-75	6,558	5,793			
1975-76	8,075	7,189	1,887	23.4	26.3
1976-77	8,739	8,440	1,926	22.0	22.8
1977-78	9,792	9,362	2,019	20.6	21.6
1978-79	11,240	10,948	2,153	19.2	19.7
1979-80	11,340	12,034	2,427	21.4	20.2
1980-81	12,829	14,544	2,761	21.5	19.0
1981-82	15,574	15,868	3,183	20.4	20.1
1982-83	18,091	19,346	3,594	19.9	18.6
1983-84	20,493	22,890	4,421	21.6	19.3
1984-85	24,384	27,881	4,646	19.1	16.7
1985-86	29,207	34,772	5,262	18.0	15.1
1986-87	34,768	42,554	5,914	17.0	13.9
1987-88	40,208	48,705	6,945	17.3	14.3

(a) Include Defence, Railways and P & T. (b) Excludes payment of Central taxes to States and certain other adjustments (c) Excludes Casual labour.

Sources: 1. 1960-61 to 1970-71 Ch IV, Third Pay Commission Report.

2. Wage Bill for 1975-76 to 1983-84, Brochure on Pay and Allowances of Central Government Employees, Department of Expenditure, various issues.

3. IV Pay Commission 1975-76 to 1983-84 data. Department of Expenditure, Ministry of Finance.

The Commission also analysed the increase in emoluments *vis-à-vis* the increase in per capita national product during the interval between the Second and Third Pay Commissions and commented that "a large section of the Government employees had not received their due share of the increase in the national product. When per capita national income at current prices increased by 95.2 per cent, the Class IV employees alone received an equivalent increase of 95 per cent The emoluments of all the other categories had lagged far behind. The increase in their monetary emoluments ranged from 51 to 74 per cent for clerical categories, 25.4 per cent for Class II and 11 to 16.7 per cent only for Class I employees" (Table 14).

Table 14. Increase in Emoluments of Central Government Employees, 1960-61 - 1970-71

	1960-61 (Rs.)	1970-71 (Rs.)	Percentage Increase of (3) over (2)
1	2	3	4
Per Capita National Product at Current Prices	306.1	597.4	95.2
Emoluments of Government Employees per mensem Class IV	80	156	95.0
L.D.C.	171	298	74.3
U.D.C.	220	347	57.7
Assistant	345	521	51.0
Class II	650	815	25.4
Class I A	1,250	1,395	11.6
Class I B	2,250	2,500	11.1
Class I C	3,000	3,500	16.7

The erosion in real earnings of a few selected during 1960-72 was worked out (Table 15). categories of Central Government employees.

The Commission emphasised that the analysis had "clearly shown how a large section of Government employees ha(d) suffered a grievous fall in real wages and their position *vis-à-vis* the employees in the organised private and public sectors ha(d) deteriorated considerably. The disparities ha(d) widened to such an extent that" the Commission could "not hope to bridge the gap at one step. But a fair deal to Government employees demand(ed) that the gap should be narrowed to the extent that the finances of Government would permit" [Raghubeer Dayal 1973, Pp. 20-24].

Table 15. Erosion in Earnings of Central Government Employees, 1961-72

Salary*		1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972
Peon:	Salary(Rs.)	80	80	85	85	90.5	103	111	123	135	141	156	156	170
	Index	100	96	99	97	91	94	92	89	95	101	106	103	105
LDC:	Salary(Rs.)	171	171	181	181	193	216	229	249	265	273	298	298	314
	Index	100	96	99	96	90	92	89	85	88	91	95	92	91
UDC:	Salary(Rs.)	220	220	230	230	242	265	276	298	314	322	347	347	363
	Index	100	96	98	95	88	88	84	79	81	84	86	83	82
Asst:	Salary(Rs.)	345	345	355	355	380	426	441	464	482	491	521	521	541
	Index	100	96	96	94	88	90	85	78	79	81	82	80	78
Class II	Salary(Rs.)	650	650	650	650	650	740	755	770	770	770	815	815	830
	Index	100	96	94	91	80	83	77	69	67	68	68	66	63
Class IA	Salary(Rs.)	1250	1250	1250	1250	1250	1250	1350	1350	1350	1350	1395	1395	1395
	Index	100	96	94	91	80	73	72	63	61	62	61	59	56
Class IB	Salary(Rs.)	2250	2250	2250	2250	2250	2500	2500	2500	2500	2500	2500	2500	2500
	Index	100	96	94	91	80	81	74	65	63	64	60	59	55
Class IC	Salary(Rs.)	3000	3000	3000	3000	3000	3000	3500	3500	3500	3500	3500	3500	3500
	Index	100	96	94	91	80	73	77	68	66	67	63	61	58

* Salary includes basic pay and D.A. only (for the years 1970 onwards it includes interim relief also)

At the same time, the Commission was aware of the repercussions of a rise in salaries bill on resources available for development The additional annual burden on the Centre on account of increases in dearness allowance and interim relief, in the context of rising prices, produced repercussions on the State Governments, public enterprises and local bodies, as will be seen from Table 16.

Table 16. Additional Annual Liability

(Rs. Crore)

Year of Revision	Extra Annual Liability		Total Extra Liability for Centre and States
	For Centre on Account of D.A. Revisions and Grant of Interim Reliefs **	For all States Together on account of Revision of Pay and Allowances	
1959-60	31.74	-	31.74
1960-61	-	13.24	13.24
1961-62	16.10	10.79	26.89
1962-63	-	6.87	6.87
1963-64	28.21	1.73	29.94
1964-65	36.38	57.08	93.46
1965-66	60.71	58.58	119.29
1966-67	57.95	97.85	155.80
1967-68	59.05	103.92	162.97
1968-69	30.00	70.92	100.92
1969-70	-	50.64	50.64
1970-71	97.43	85.16	182.59
1971-72	37.08	116.96	154.04
1972-73	35.93 (a)	54.23 (b)	90.16
Total 14 years	490.58*	727.97*	1,218.55

*This does not take into account the annual growth subsequent to each revision as a result of increase in the number of employees.
** Excludes additional burden on account of increase in other allowances.
(a) Full year effect of third interim relief sanctioned in September 1972.
Additional liability in 1972-73 is only Rs. 20.96 crore.
(b) Revisions made upto 15th September 1972.
Note:- In all cases where revisions have been effected during the course of the year, the full year effect has been shown for that year in this table.

Further, the Commission recognised "The revision of salaries and D.A. by the State Governments, ha(d) to some extent, recoiled on the Central Governments' resources position as it became incumbent on the Centre to grant special accommodation to some States for meeting non-Plan gaps, to sanction ways and means advances to States for clearing their overdrafts with the Reserve Bank of India, and to make a larger devolution of funds under the Finance Commission's awards - from Rs. 240 crore in 1960-61 to Rs. 1,325 crore in 1973-74 .... The .... decade" was thus "one of continuous stresses and strains on the finances of the Central Government" [Raghubeer Dayal 1972, Pp. 26-27].

Minimum Salary

"Having regard to the low per capita income of the country, the acute unemployment situation, the state of finances of the Central Government and the likely repercussion of a high minimum wage on the finances of the State Governments" the Commission considered "it to be supremely important that the maximum restraint should be exercised in devising a new pay structure." The Commission examined a number of approaches "and keeping in view the various limiting factors, it seemed to them "that a minimum remuneration of Rs. 185 p.m. for the lowest paid full time adult employee of the Central Government, at the All-India Consumer Price Index of 243 points (1949 = 100) or 200 points (1960 = 100), being the average of 12 months ending 31st October 1972, would be compatible with general economic conditions in the country and one that the tax-payer could be reasonably called upon to bear. This level of minimum remuneration secure(d) to the Central Government employees not only full neutralisation over the figure recommended by the Second Pay Commission, but also a reasonable share of the increase in per capita income. This would also compare quite favourably with the trend in the earnings of factory workers earning less than Rs. 400 p.m." Accordingly, the Commission recommended that the minimum remuneration for the whole time Central Government employee at the start of his career should be fixed at Rs. 185 per month and that the revised scale for employees drawing pay in the scale of Rs. 70-1-85 should be Rs. 185-2-193-3 -220 (14 years), except where otherwise recommended for any particular category. This scale was inclusive of the dearness pay, dearness allowance, and interim relief admissible at that time.

With regard to Class I Services, the Commission commented that "over the years, service under the Government ha(d) lost much of its old glamour and prospective candidates for employment have now many more alternatives to choose from". Further, "there had been an unduly sharp decline in the number of first-class graduates taking the competitive examinations, even though the output of such graduates had been steadily increasing". The Commission opined that Government should strive to "attract a fair share of the outstanding talent from the universities into the higher services" in view of its expanding role and "increasing responsibilities for planned social and economic development". Nevertheless, the Commission thought, the starting salary of Class I Services, should not exceed the then prevailing ratio of 1:4 to the starting salary of Class

IV services. Accordingly, the Commission recommended that the starting salary for entry into the Class I Services, including the all-India Services, should be Rs. 700 per month.

Maximum Salary

As regards maximum salaries, the Commission referred to the following changes made by Government in 1965 and suggested that no change need be made in the ceiling of Rs. 3,500 per month.

	From	To
Joint Secretary	Rs. 2,250	Rs. 2,500 - 125/2,750
Addi. Secretary	Rs. 2,750	Rs. 3,000
Secretary	Rs. 3,000	Rs. 3,500

In reaching this conclusion, the Commission "kept in view the social desirability of reducing disparities in the levels of income generally and in the Government in particular." As a result of these recommendations "the disparity ratio between the minimum remuneration and the pre-tax prescribed maximum salary under the Government" would be reduced from 1:20.6 to 1:18.9 [Raghubeer Dayal, 1972 Pp 66-72].

Scales of Pay

The Second Pay Commission had recommended 140 scales in all. But, there were already over 500 scales by January 1971. Table 17 gives the extent of proliferation, by different classes, that had occurred since the Report of the Second Pay Commission made in August 1959.

Table 17. Number of Scales

	As Recommended by 2nd Pay Commission	As on 1-1-1971	Percentage Increase
Class I	25	117	368
Class II & III	106	395	273
Class IV	9	24	167

Thus, as on January 1, 1971, there were in all 536 scales. But, only 35 scales accounted for nearly 92 per cent of the 29.82 lakh employees while the remaining 8 per cent were spread over 501 different scales. Clearly, a very large number of scales were created to suit individual requirements. It was found that "among the civilian personnel above, the various standard clerical categories" were "borne on as many as 9 scales of pay, with their supervisors accounting for another 24 scales. Storekeepers" were "on 42 scales. Stenographers and Stenotypists on 19, Draughtsmen on 30, Library staff on 38, and Drivers on motor vehicles on 21 scales Many of the scales" were "only marginally different from others" [Raghubeer Dayal, 1973 p. 50].

In devising the pay structure, between the recommended maximum and minimum, the Commission "had to balance various considerations some of which" were "mutually conflicting." The Commission examined the various aspects of pay fixation and scales, including common categories of posts, time scales, length of scales, efficiency bars, increments, overlapping scales, pay fixation on promotion, special pay, deputation allowance, etc. and recommended eighty scales of pay along with the incremental steps and the efficiency bars and suggested that these should be made applicable from 1st March 1973 (Table 18).

Table 18. Pay Scales Recommended by Third Pay Commission

(Rupees)

1.	160-2-170	41.	650-30-740-35-880-EB-40-960
2.	185-2-193-3-205-EB-3-220	42.	650-30-740-35-880-EB-40-1040
3.	190-3-208-4-220-EB-4-232	43.	650-30-740-35-810-EB-35-880-40- 1000- EB -40-1200
4.	190-3-208-4-220-EB-4-240	44.	700-30-760-35-900
5.	200-3-212-4-240-EB-5-260	45.	700-40-900-EB-40-1100-50-1300
6.	200-3-212-EB-4-240-RB-S-280	46.	700-40-900-EB-40-1100-50-1250-EB-50- 1600
7.	225-5-260-6-290-EB-6-308	47.	740 - 35 - 880
8.	225-5-260-6-326-RB-8-350	48.	775-35-880-40-1000
9.	260-6-326-EB-8-350	49.	775-35-880-40-1000-EB-40-1200
10.	260-6-290-EB-6-326-8-366-EB-8-390- 10-400	50.	840-40-1040
11.	260-8-300-EB-8-340-10-380-EB-10-430	51.	840-40-1000-EB-40-1200
12.	260-8-300-EB-8-340-10-360-12-420-EB -12-480	52.	900-40-1100-EB-50-1400
13.	290-6-326-EB-8-350	53.	1050-50-1600
14.	290-6-326-8-350-EB-8-390-1O-400	54.	1050-So-1500-EB-60-1800
15.	290-8-330-EB-8-370-10-400-EB-10-480	55.	1100-50-1500
16.	290-10-350-EB-12-410-EB-15-500	56.	1100-50-1600
17.	290-8-330-10-380-EB-12-500-BB-15- 560	57.	1100-50-1500-60-1800
18.	320-6-326-8-390-10-400	58.	1200-50-1600
19.	330-8-370-10-400-EB-lo-480	59.	1200-50-1700
20.	330-1o-380-EB-12-500-EB-15-560	60.	1200-50-1500-60-1800
21.	380-12-500-15-530	61.	1200-S0-1300-60-1600-EB-60-1900-100- 2000
22.	380- 12-500-EB-15-560	62.	1300-50-1700
23.	380-12-440-EB-1S-560-EB-20-640	63.	1500-60-1800
24.	425-15-530-EB-15-560-20-600	64.	1500-60-1800-100-2000
25.	425- 15-560-ER-20-640	65.	1650-75-1800
26.	425-15-500-EB-15-560-20-700	66.	1800-100-2000
27.	425-15-500-EB-15-560-20-640-EB-20- 700-25-750	67.	1800-100-2000-12512-2250
28.	425-15-500-EB-15-560-20-700-EB-25- 800	68.	1850 Fixed
29.	440-15-515-EB-15-560-20-700-EB-25- 750	69.	2000-125/2-2250
30.	455- 15-560-RB -20-700	70.	2000-125/2-2500
31.	470-15-560-20-580	71.	2250-125/2-2500
32.	470- 15-530-RB -20-650-EB-25-750	72.	2250- 125/2 -2500- RB - 12512 -2750
33.	500-20-700-RB -25-900	73.	2500 Fixed
34.	530-15-560-20-620	74.	2500-125/2-2750
35.	550-20-650-25-700	75.	2500-125/2-3000
36.	550-20-650-25-750	76.	2750 Fixed
37.	550-20-650-25-800	77.	3000 Fixed
38.	550-25-750-RB-30-900	78.	3000-100-3500
39.	600-25-750	79.	3250 Fixed
40.	650-30-710	80.	3500 Fixed

Dearness Allowance

The amount of dearness allowance, dearness pay, and interim relief admissible to Government employees in various pay ranges at the time of submission of the Pay Commission's report (1973) were as in Table 19.

Table 19. Allowances Admissible to Government Employees

(Rupees)

Pay Range	Dearness Pay	Dearness Allowance	Interim Relief	Total
- 85	47	24	29	100
85 - 109	47	24	41	112
110 - 149	70	28	41	139
150 - 209	90	32	41	163
210 - 399	110	36	50	196
400 - 449	120	40	50	210
500 - 542	120	As of 663	70	AS+70
543 - 575	120	-	70	190
@				
576 - 999	120	-	60@	180
1000 - 1250#	**	100	60#	160
1251 - 2250##	-	100##	-	100

AS = Amount Short of
** = except for marginal adjustments up to Rs. 119
# = with marginal adjustments up to Rs. 1,310
= marginal adjustments up to Rs. 2,350
@ = except for marginal adjustments up to Rs. 645

As for the future, the Commission recommended the continuance of the formula for adjustments in dearness allowance except that adjustments should be made when twelve monthly average of the index (1960 = 100) changed by 8 points rather than 10 points as before. The pay structure recommended by the Commission was related to index average of 200 points for the twelve months ending October 1972 (1960 = 100). It was accordingly recommended that the various categories of employees be brought within the purview of the dearness allowance scheme as given in Table 20. The dearness allowance was to be granted in the future on the basis of the formula given in Table 21.

Table 20. Employees to be Covered by D.A. Scheme

Rise in Prices over the Base Period Adopted for Devising the Pay Structure	Employees to be Covered
For the price rise of first 8 points in the 12-monthly average of the 1960 basic index	All employees drawing revised pay up to Rs. 900 per mensem with suitable marginal adjustments
On the index average rising by 16 points	All employees drawing revised pay up to Rs. 1,600 per mensem with suitable marginal adjustments
On the index avenge rising by 24 points	All employees drawing revised pay up to Rs. 2,250 per mensem with suitable marginal adjustments

Table 21. Dearness Allowance Recommended

Pay Range (Rs.)	Amount of D.A. admissible for an increase of 8 points in the index average (1960 basis)
Up to 300	3.5 per cent of pay subject to a minimum of Rs. 7 per mensem and a maximum of Rs. 10 per mensem.
Above 300	2.5 per cent of pay subject to a minimum of Rs. 10 per mensem and a maximum of Rs. 20 per mensem.

Should the price level rise above twelve-monthly average of 272 (1960=100), it was recommended that the Government should review the position and decide whether the dearness allowance scheme should be extended further or pay scales themselves should be revised.

Compensatory City Allowance

Table 22 gives the rates of City Compensatory Allowance in force in 1973, when the Commission submitted its report.

In view of the revised pay scales recommended, the Commission felt that these would generally compensate for the increase in cost of living and hence that there was no need to increase the existing quantum of city compensatory allowance; all that was necessary was to ensure that the absolute quantum of compensatory city allowance that employees were already receiving should generally be protected. Accordingly, the Commission recommended the following revised schedules of compensatory city allowance rates in conformity with the new pay scales (Table 23):

Table 22. City Compensatory Allowance, 1973

Class of City	Pay per month (Rs.)	Rate of Allowance
A (Population above 16 lakh)	Below 150	10% of pay subject to a minimum of Rs. 7.50 and a maximum of Rs. 12.50
	150 and above	8% of pay subject to a minimum of Rs. 12.50 and a maximum of . Rs. 75.00
B-1 (Population above 8 lakh but not exceeding 16 lakh)	Below 250	7-1/2% of pay subject to a minimum of Rs. 6.00 and a maximum of Rs. 15.00
	250 and above	6% of pay subject to a minimum of Rs. 15.00 and a maximum of Rs. 50.00
B-2 (Population above 4 lakh but not exceeding 8 lakh)	Below 620	5% of pay subject to a minimum of Rs. 5.00 and a maximum of Rs. 10.00
	620 and above	Amount by which pay falls short of Rs. 629

Table 23. City Compensatory Allowance for New Pay Scales

Class of city	Pay per month (Rs)	Rate of Allowance
A	Below Rs. 250	6.5% of pay subject to a minimum of Rs. 12
	250 and above	6% of pay subject to a maximum of Rs. 75
B-1	Below Rs. 330	5% of pay
	330 and above	4.5% of pay subject to a maximum of Rs. 50
B-2	Below Rs. 750	3.5% of pay subject to a maximum of Rs. 10
	750 and above	Amount by which pay falls short of Rs. 759
C	(Population above 0.5 lakh but not exceeding 4 lakh)	No allowance.

Implementation of the Third Pay Commission's Recommendations

While implementing the recommendations of the Third Pay Commission, the Government *ab initio* raised minimum remuneration from Rs. 185 to Rs. 196. The rates of dearness allowance recommended by the Commission were also modified by the Government *ab* initio, as indicated below, after discussion with representatives of Staff Side in the National Council of Joint Consultative Machinery, set up in October 1966, comprising recognized staff unions/ associations and the Government

Pay Range	Additional D.A. for every 8 point increase in avenge cost of living index
Upto Rs. 300	4 per cent of pay.
Above Rs. 300	3 per cent of pay subject to a minimum of Rs. 12 - and a maximum of Rs. 27/- per month.

Dearness allowance at the above rates was paid up to index average 272. Subsequently, the rates were revised in August 1974 and dearness allowance at the rates recommended by the Third Pay Commission was paid up to index average 312. Later, after discussion with the Staff Side in the National Council, the rates were further revised in March 1979; the revised rates were as follows:

Pay Range	Rate for every 8 point increase
Upto Rs. 400	4 per cent of pay.
Above Rs. 400	3 per cent of pay subject to a minimum of Rs. 16/- and a maximum of Rs. 30/- per month.

The above rates provided a neutralisation of 100 per cent to employees thawing pay up to Rs. 400/- per month and 75 per cent to those drawing pay up to Rs. 1,000/- per month after which the neutralisation went on decreasing.

The salaries of posts at the level of Joint Secretary and above and equivalent thereto were revised in 1965 and the Third Pay Commission suggested no change therein. Initially they were given an *ad hoc* dearness allowance of Rs. 150/- with effect from December 1, 1978 which continued thereafter for every rise of 24 points in index average. Since this was much less than the rise in prices, Government decided, in March 1982, as a one time measure, to raise the level of neutralisation to about 45 per cent for the level of Joint Secretary and equivalent posts. This resulted in raising the dearness allowance payable to officers thawing pay of Rs. 2,750/- and above from Rs. 900/- to Rs. 1,500/- with effect from January 1, 1982. The above level of neutralisation for senior officers was maintained by granting suitable increase in dearness allowance subject to a maximum of Rs. 150/- on every increase of 24 points in index average.

Government decided on three occasions to treat part of dearness allowance as dearness pay for certain purposes more particularly to provide relief in the matter of death-cum-retirement benefits to retiring employees. The first 9 instalments of dearness allowance paid upto index average 272 were treated as dearness pay with effect from September 30, 1977 to be reckoned as pay for retirement benefits only. Subsequently, 6 more instalments of dearness allowance upto index average 320 were treated as dearness pay with effect from January 31, 1982 for retirement benefits. Government also decided that the above dearness pay would count as pay for purposes of grant of house rent allowance and city compensatory allowance from February 1, 1982. Later, Government decided to treat 31 more instalments of dearness allowance granted upto index average 568 as pay with effect from March 31, 1985 for retirement benefits only.

Since January 1, 1973, that is, the date from which the revised pay scales recommended by the Third Pay Commission were implemented, 51 instalments of dearness allowance fell due and were "paid covering price rise upto index avenge 608 which was reached with the twelve-monthly average for December 1985". The percentage of neutralisation provided to government employees under the then existing dearness allowance scheme for an 8 point increase in index average was as follows:

Pay (Rs.)	Percentage of Neutralisation
196	100
300	100
400	100
1,000	75
2,250	45
2,750	45
3,500	35

Each instalment of dearness allowance to Central Government employees cost the Government about Rs. 72 crore per annum. The total expenditure "on 28 instalments of dearness allowance which fell due during the Sixth Plan was about Rs. 5,200 crore for the Centre" [Singhal 1986, p. 218].

Report of the Study Group on Wages, Incomes, and Prices, May 1978

In October 1977, the Government of India set up a Study Group on Wages, Incomes, and Prices to undertake a comprehensive study on wages, incomes, and prices policy with the following Terms of Reference:

(i) What should be the minimum wage and what should be the norms with reference to which the minimum wage should be determined.

(ii) Whether the minimum wage should be uniform or could be different as between (a) Agriculture, Industry and Services, (b) Organised and Unorganised Sectors, (c) Urban and Rural Sectors, (d) Different States/Regions, (e) Different employers in the organized sector.

(iii) What should be the relevant criteria for determining differentials between minimum wage and maximum wage and whether the ratio between minimum and maximum wages should be uniform.

(iv) What should be the criteria for determining maximum income and what relationship should exist between maximum income and maximum wage.

(v) What should be the linkage between wages, incomes, and prices, and to review in this connection existing arrangement for regulation of dearness allowance in private and public sectors.

(vi) What fiscal, economic and other policies should be adopted for achieving objectives of proposed policy on wages, incomes, and prices.

(vii) Whether any legislative changes would be required for implementing the proposed policy on wages, incomes, and prices.

The Study Group submitted its Report in May 1978.

Referring to the higher range of salaries in Government, the Study Group pointed out that by and large, they were not raised much for a considerable time, and no dearness allowance was given to those in receipt of more than Rs. 2,400 per month. As a result, the ratio between the post-tax salary income of the lowest and the highest was around 1:9. If perquisites were taken into account, this range might widen slightly. On the other hand, higher salaries and perquisites accrued generally to elder persons with greater length of service. When comparisons were made between the more experienced persons in the lowest and highest categories, the range was considerably narrowed. Thus, the differential was "already a little narrower than what had been "envisaged as the goal ten years hence." There was therefore the question whether there should not be some upward revision of salaries in the higher ranges in order to continue to attract persons of requisite caliber. The Study Group recommended that the problem may be referred to the National Pay Commission.

The Study Group had "found that anything between 2.5 and 5.5 per cent increase in the annual wage bill in Government as well as nongovernment organisations" was "accounted by the prevalence of longish pay scales. This part of the increase in wage bills" was "usually ignored when wage revisions" were "undertaken. There" were "no valid reasons why this should be so. Some progression may be justified on account of improvement in the quality of work as a person acquires experience. At lowest levels, a long scale may also have its merit if opportunities for pro motion axe limited and prolonged stagnation is to be avoided. But, generally speaking, rationalisation requires very considerable shortening of the existing scales and eliminating them where possible at the higher, middle and top levels."

With regard to dearness allowance, the Study Group felt that there was "need for a single national corrective formula to compensate for the rise in cost of the essential consumption basket." "The question arises as to the price index to which the dearness allowance should be linked. The widely adopted index is the All-India Consumer Price Index for Industrial Workers. It is based on a consumption pattern which existed about 20 years back but is now largely obsolete, and this may be true even of the revised 1971 series likely to be introduced shortly. The consumption basket which it represents contains several less essential items; for example, dry fruit, ghee, liquor, cigarette, cosmetics, ornaments and air and taxi fare. Such items, as a matter of policy, do not need to be compensated at the present stage of development of our economy. For regulating dearness allowance a new index covering only the basic consumption items should ideally be utilised. But till such an index can be constructed and brought into use, the Consumer Price Index for Industrial Workers, which has the merit of general acceptance, may continue to be used in spite of its deficiencies." The Study Group further recommended "that the periodicity of dearness allowance revision should be on a quarterly basis for all sectors with reference to the index average of the preceding quarter." As regards the extent of neutralisation, the Study Group considered "that dearness allowance should compensate for the rise in price of the essential items in full only at low salary levels and go on tapering towards the top." It recommended the "adoption of the per point formula uniformly for future revisions" of dearness allowance, "the value per point being around Rs. 1.30. (The rate of Rs. 1.30 per point allow(ed) full neutralisation at the basic pay of Rs. 260 related to the CPI level 200). The same amount of dearness allowance would be admissible to everybody above the line. Since D.A. under this system is not related to salary, it will be admissible to all irrespective of salary drawn" [Bhoothalingam 1978, Pp. 48-75].

Fourth Central Pay Commission

On July 29, 1983, the Government of India appointed the Fourth Central Pay Commission. While making its recommendations, the Commission was asked to bear in mind, among other relevant factors, prevailing pay structure in Public Sector Undertakings, State Governments, etc., economic conditions in the country, the resources of the Central Government and the demands thereon such as those on account of developmental planning, defence and national security. Within the week, that is on August 2, 1983, because of an 8 point increase in cost of living index average, another raise in dearness allowance had become due which the Government sanctioned as interim relief 'pending the recommendations of the Fourth Pay Commissi on'.

Table 24. Categories of Posts in Central Government, 1971, 1984

Departments	Group A		Group B		Group C		Group D		Total	
	Numbers	Per cent Increase	Numbers	Per cent Increase	Numbers	Per cent Increase	Numbers	Per cent Increase	Numbers	Per cent Increase
Railways										
1971	37		38		5,914		7,997		13,986	
1984	77	108.1	36	(-)5.3	8,144	37.7	6,790	(-)15.1	15,047	7.6
Posts and Telegraph										
1971	11		30		3,081		751		3,873	
1984	36	227.3	99	230.0	5,410	75.6	1,247	66.0	6,792	75.4
Defence										
1971	67		63		2,336		3,506		5,972	
1984	117	74.6	88	39.7	3.419	46.4	3,611	3.0	7,235	21.1
Others										
1971	226		330		4,119		1,121		5,796	
1984	450	99.1	577	74.8	5,896	43.1	1,661	48.2	8,584	48.1
TOTAL										
1971	341		461		15,450		13,375		29,627	
1984	680	99.4	800	73.5	22,869	48.0	13,309	(-)0.5	37,658	27.1

Group A: Posts carrying pay/scale of pay with a maximum of not less than Rs. 1300/-.
Group B: Posts carrying pay/scale of pay with a maximum of not less than Rs. 900/- but less than Rs. 1300/.
Group C: Posts carrying pay/scale of pay with a maximum of over Rs. 290/. but less than Rs. 900/-.
Group D: Posts carrying pay/scale of pay, the maximum of which is Rs. 290/- or less.

Report on Interim Relief of the Fourth Central Pay Commission, March 29, 1985

The Commission submitted an interim report on March 29, 1985 recommending an interim relief at the rate of 10 per cent of basic pay subject to a minimum of Rs. 50 p.m. The expression basic pay may not include special pay, deputation pay, special allowance or any addition to pay under any other nomenclature. It may be taken into account for determining the retirement benefits but not for any other purpose. The interim relief was to be paid with effect from

March 1, 1985 and was estimated to cost about Rs. 327 crore in a full year inclusive of expenditure on Armed Forces personnel and the employees in Union Territories.

Fourth Central Pay Commission Report Part I, June 1986

The Commission submitted Part I of its final report in June 1986 and Part II in December 1986. In its report the Commission referred to the increase/decrease that had taken place in the various categories of posts in the Central Government between 1971 and 1984 (Table 24).

It will be seen that the number of Group 'A' posts in 1984 was almost twice the number in 1971. Departmentwise, the number of Group 'A' posts in Railways and in other ministries/departments more than doubled during the period 1971 to 1984 while the increase in P & T was more than 200 per cent. The increase of 74.6 per cent in the case of Defence was somewhat lower. The number of Group 'B' and 'C' posts in the Central Government also increased by 73.5 and 48.0 per cent, respectively. In absolute terms, while majority of the increase in group 'B' posts was accounted for in other ministries/departments (other than Railways, P & T and Defence), P & T accounted for the major increase in group 'C' posts, followed by Defence. However, the maximum percentage increase in both group 'B' and 'C' posts was registered by P & T, and the minimum by Railways. Inspite of an overall reduction in Group 'D' posts, the number of such posts in P & T and other ministries registered sizeable increase of 66 per cent and 48.2 per cent, respectively. The increase in Group 'D' posts for Defence was 3 percent. However, these increases, steep in the case of P & T and other ministries and marginal in the case of Defence, were more than offset by substantial decrease in the number of group 'D' posts under the Ministry of Railways, primarily due to reviews of group 'C' and 'D' cadres between 1971 and 1984 resulting in large-scale conversion/upgradation of group 'D' posts into group 'C'. In the overall, the number of posts in Railways increased by 7.6 per cent, P & T by 75.4 per cent, Defence by 21.1 per cent and other ministries by 48.1 per cent.

Regarding the salaries, the Commission pointed out that "the maximum pre-tax salary in our country in 1947-48 (First Pay Commission) and 1969-70 (Second Pay Commission) was Rs. 3,000 in the case of Central Government employees. It was raised to Rs. 3,500 in 1965 and that was maintained by the Third Pay Commission. The minimum salary was Rs. 55, Rs. 80 and Rs. 196 on implementation of the reports of the previous three Pay Commissions. The disparity in pay (post-tax) which was 41.2 in 1947-48, 28.5 in 1959-60 and 11.9 after the Third Pay Commission report" was expected to "be reduced to 9.15" on the recommendations of the Fourth Pay Commission.

The Commission had recommended, in its interim report, relief at the rate of 10 per cent of basic pay subject to a minimum of Rs. 50 to be granted to all government employees with effect from March 1, 1985. Taking into account the dearness allowance and instalments of interim relief, the minimum remuneration of a government employee was Rs. 691.70 at index average of 608 (1960 = 100). The Commission indicated "the value of the minimum remuneration recommended by the previous Pay Commissions at index average 608 (1960 = 100)" as given in Table 25 and opined: "The existing minimum emoluments of about Rs. 692 at index average 608 not only provide(d) full neutralisation of the price rise since the report of the Third Pay Commission but also, a further increase in emoluments" [Singhal, 1986, p. 51].

Table 25. Value of Minimum Remuneration at Index Average, 608

Minimum Remuneration	(Rs. p.m.)	Index to which related (In terms of Current index with 1960 = 100)	Value at Index average 608 (1960 = 100) . (Rs. p.m.)
First Pay Commission	55	65	514
Second Pay Commission	80	95	512
Third Pay Commission -			
i) As Recommended	185	200	562
ii) As Modified by Government	196	200	596

There were 153 pay scales in existence when the Fourth Pay Commission was appointed. The Commission suggested their rationalisation in the following manner: There were 44 scales in Group A which should be reduced to 15 scales; there were 89 scales in Groups B and C which should be reduced to 18 scales; and there were 17 scales in Group D which should be reduced to 3 scales. Besides, there were 3 fast-track scales in the Atomic Energy Commission; the Pay Commission did not think they were necessary. Thus, there were left only 36 scales which the Commission believed reflected "the distinct differences in responsibility at various levels in Government and it should be possible to place any post created in future in one or the other scale recommended by "them" and thus "avoid any proliferation of scales in future" [Singhal, 1986 p. 111). The 36 scales recommended by the Commission are shown in Table 26.

Table 26. Scales of Pay Recommended by Fourth Pay Commission

Group 'A' (Rs.)	Group 'B' & 'C' (Rs.)	Group 'D' (Rs.)
2,200 - 4,000	825 - 1,200	750 - 940
3,000 - 4,500	950 - 1,400	775 - 1,025
3,000 - 5,000	950 - 1,500	800 - 1,150
3,700 - 5,000	975 - 1,540	
4,100 - 5,300	975 - 1,660	
4,500 - 5,700	1,170 - 1,500	
5,100 - 5,700	1,200 - 1,800	
5,100 - 6,700	1,200 - 2,040	
5,900 - 6,700	1,320 - 2,040	
5,900 - 7,300	1,350 - 2,200	
7,300	1,400 - 2,300	
7,300 - 8,000	1,400 - 2,600	
7,600	1,600 - 2,660	
8,000	1,640 - 2,900	
9,000	2,000 - 3,200	
	2,000 - 2,120	
	2,000 - 3,500	
	2,375 - 3,500	

Compensation for Price Rise:

The pay structure recommended by the Commission was based on the index average 608 (1960 = 100) for the 12-monthly period ending December 31, 1985. The Commission recommended that compensation for price rise should be sanctioned only twice a year, payable with the salary for March and September. For purposes of compensation, the increase in 12-monthly average of index for the periods ending December and June over the index avenge of 608 (1960 = 100) should be taken into account. The compensation should provide full neutralisation of price rise to employees drawing basic pay upto Rs. 3,500, 75 per cent to those getting basic pay between Rs. 3,501 and 6,000 and 65 per cent to those getting basic pay above Rs. 6,000 subject to marginal adjustments. The compensation may continue to be shown as a distinct element of remuneration.

City Compensatory Allowance:

The Commission recommended that City Compensatory Allowance may be paid to government employees in the various pay ranges at the fixed rates mentioned below:

Table 27. City Compensatory Allowance Recommended by Fourth Pay Commission

Pay Range (Basic Pay)	Amount of CCA in Class of Cities (Rs. per month)		
	A	B1	B2
Below Rs. 950	30	25	20
Rs. 950 and above but below Rs. 1500	45	35	20
Rs. 1500 and above but below Rs. 2000	75	50	20
Rs. 2000 and above	100	75	20

Other benefits

Among the benefits to which the Central Government employees are entitled are House Rent Allowance, Children's Education Allowance, Health Service, and Pension and Death-benefits. In the following, we shall briefly describe how they have developed over the years.

House Rent Allowance

During the War, Government had given certain housing facilities by means of requisition of property and housing allowances in major cities at the rate of ten per cent of salary. The First Pay Commission were informed that such assistance was given in areas where there was shortage of accommodation and that Government had not as a general policy accepted liability to furnish residential accommodation for all classes of their employees. Nevertheless, it was represented to the Pay Commission by all sections of the service that Government should (i) provide free quarters for certain grades and categories of public servants and (ii) give house-rent allowance to other categories of public servants in places where it may not be found possible to secure reasonable accommodation within the ten per cent of the salary which was supposed to represent house-rent. In response, the First Pay Commission recommended a house-rent allowance with certain restrictions as regards pay limits and areas and further that, in case the Government under-took a building programme, priority should be given to schemes for housing employees in the lower grades of the services (Table 28).

The Second Pay Commission recommended revised rates of house rent allowance and suggested that, for other areas, house rent allowance could be considered on merit (Table 29).

Table 28. House Rent Allowance Recommended by First Pay Commission

(Rupees)

Pay of Officers (Rs.)	Cities with Population of over 1 lakh	Cities with Population of over 5 lath	Bombay and Calcutta
Below Rs. 55	5	7	10
Rs. 55 - 100	7	10	15
Rs. 101 - 250	-	15	20
Over Rs. 250	-	7-1/2% of pay	10% of pay

Table 29. House Rent Allowance Recommended by Second Pay Commission

	Class of Cities		
	A (Bombay & Calcutta) (Rs.)	B (Pop. exceeding 5 Lakh) (Rs.)	C (Pop. exceeding 1 lakh) (Rs.)
Below Rs. 75	10	7.5	5.00
Rs. 75 and above but below Rs. 100	15	10.00	7.50
Rs. 100 and above but below Rs. 200	20	15.00	7.50 (for those drawing below Rs. 150)
Rs. 200 and above	10 per cent of pay	7-1/2 per cent of pay	Nil

Government accepted the recommendations of the Second Pay Commission except that the rate of house rent allowance, for A class cities would be 15 per cent of pay subject to a minimum of Rs. 20 for the pay range Rs. 100 - 499 and 12-1/2 per cent of pay for the pay range Rs. 500 - 999. Subsequently, in 1963, the B class was divided into B-1 and B-2 and the rates of house rent allowance applicable to the erstwhile B class cities were continued for B-2 cities with some modifications, while higher rates were prescribed for A and B1 classes of cities.

At the time of the Third Pay Commission's Report, the cities were classified by population as follows: (A) over 16 lakh; (B1) 8-16 lakh; (B2) 4-8 lakh; and (C) 0.50-4 lakh. The house rent allowance prevailing at the time was as given in Table 30.

Table 30. House Rent Allowance in 1972-73

Class of City	Pay (Including Dearness Pay)	House Rent Allowance
A & B-1	Below Rs. 100	Rs. 15 flat
	Rs. 100 - 3,000	15% of pay subject to a minimum of Rs. 20 and a maximum of Rs. 300
B-2	Above Rs. 3,000	10% of pay
	Below Rs. 100	Rs. 10 flat
	Rs. 100 and above	10% of pay subject to a minimum of Rs. 15 and maximum of Rs. 300
C	Below Rs. 620	7.5% of pay subject to a minimum of Rs. 7.50
	Rs. 620 and above	Amount by which pay falls short of Rs. 665

The Commission was aware of inadequate government housing and the inadequacy of existing house rent allowance and recommended that Government should take houses on long lease and make residential accommodation available to its employees on payment of 10 per cent of their pay; or, should lay down appropriate house rent allowance rates in different cities and towns based, not on population criteria but, on an actual assessment of prevailing levels of rent. Alternatively, certain notional rents for different types of accommodation meant for officers and personnel of specified pay groups should be laid down for particular cities after studying the actual conditions in that city. The difference between the actual rent paid and 10 per cent of pay should be reimbursed subject to a maximum of the difference between the notional rent and 10 per cent of the pay; the verification of rent receipts should be made compulsory. Till Government was able to make such arrangements, rates of HRA should be: For class A, B-1, and B-2 cities/towns, 15 per cent of pay subject to a maximum of Rs 400; for class C towns, 7.5 per cent of pay subject to a maximum of Rs 200. In hill-stations and unhealthy and remote localities where house rent allowance was admissible under special orders, it should continue to be paid. Government may decide upon the appropriate rates.

Government accepted the recommendations which continued until the Fourth Pay Commission's report in 1986.

The Fourth Pay Commission recommended the following amounts of House Rent Allowance in lieu of government accommodation for Central Government employees (Table 31).

Table 31. House Rent Allowance Recommended by Fourth Pay Commission

Type of Accommodation to which entitled	Pay Range in Proposed Scales for entitlement (Rs)	Amount of House Rent Allowance Payable (Rs)		
		A, B1 & B2 Class Cities	C Class Cities	Unclassified Places
A	750-949	150	70	30
B	950-1499	250	120	50
C	1500-2799	450	220	100
D	2800-3599	600	300	150
E	3600-4499	800	400	200
E1	4500-6699			
E2	6700-7299	1000	500	300
E3	7300+			

They also recommended the creation of a Central Government Employees Housing Fund whereby employees axe encouraged to become members of the fund and make some savings for acquiring a house over a period of time.

Children's Education Allowance

The First Pay Commission had suggested that a beginning should be made with a scheme for helping members of subordinate grade services in the matter of the education of their children. Persons drawing a salary of Rs. 100 or less per month may be paid by the State a contribution of 75 per cent of tuition fee in the case of children of Class IV and 50 per cent of the fee in the case of children of Class III employees. The contribution might be given upto the higher secondary stage or a corresponding stage of technical education.

The Government did not accept these recommendations on grounds that '(a) spread of education should be uniform among all classes of population, and children of Government servants should not be treated as a privileged class; (b) there would be numerous practical difficulties in successful working of the recommended scheme; (c) schemes of educational assistance had been tried and abandoned in other countries such as the United Kingdom; (d) grant of an allowance might encourage employees to send their children to more expensive schools; and (e) in some places when there were no schools no benefit could be derived' [Das, 1959, p. 479].

The Second Pay Commission referred to the educational assistance given by the

Railways to its employees who were compelled to send their children to boarding schools from the stations where they were posted because of absence of school facilities or due to linguistic or other reasons; and recommended that a similar scheme be introduced for such Central Government employees whose salary did not exceed Rs. 300 per month [Das, 1959, Pp. 480-481].

The Third Pay Commission recommended that the children's educational allowance should be admissible to employees only if a school of the requisite standard did not exist at the station where an employee was posted or on account of non-availability of accommodation in such a school. The Commission noted that the bulk of non-gazetted employees either did not have a transfer liability or have such a liability within a particular zone or area only and it was mainly Class II and Class I Officers who had transfer liability throughout the country. The Commission therefore recommended that children's educational allowance should be paid to Central Government employees drawing pay up to Rs. 1,200 per month at Rs 15 per month per child for primary classes and at Rs 20 per month per child for secondary and higher classes subject to a maximum of Rs 60 per month per employee.

The Fourth Pay Commission recommended reimbursement of children's tuition fees as defined under the Central Civil Services (Educational Assistance) Order 1983 under which 'children's educational allowance is admissible to a government employee when he is compelled to send his child to a school away from the station at which he is posted/residing owing to the absence of a school of requisite standard at that station or when the child is denied admission in such a school due to their being no vacancy or for any other reason. The Commission recommended that the allowance be paid at Rs 20 per month per child for classes X and below and Rs 25 per month per child for classes XI and XII so long as the same is payable and actually paid by a government employee for the education of his children in a school under the recognised open school system. In the case of physically handicapped or mentally retarded children of government employees, the ceiling of Rs. 20 per month where applicable may be raised to Rs. 50 per month.

Besides reimbursement of tuition fees, the Educational Assistance Order of 1983 provided for children's educational allowance, subsidy for purchase of books, and hostel subsidy. The Commission recommended that, in case of transfer from one station to another, if the employees have to keep their children at the old station for board examination in the interest of continuity of their studies, they may be paid children's educational allowance without insisting on any other condition. Again, for administrative convenience and simplicity in accounting, children's educational allowance may be paid at a uniform rate of Rs. 50 per month per child for primary, secondary, and higher secondary classes. The hostel subsidy paid for children in residential schools, on transfer of the government servant, was recommended to be increased from Rs. 60 to Rs. 150 per month per child. Subsidy for purchase of new books on transfer of the government servant, and admission of children to new schools should be raised to Rs. 120 for secondary/higher secondary classes, and to Rs. 50 per child for other classes. The Commission recommended that the benefit of all the schemes of educational assistance, whether separately or in conjunction, may be admissible for two children only as this would be in consonance with the national objective of a small family.

Contributory Health Service Scheme, July 1954

A contributory health service scheme for Central Government servants in Delhi and New Delhi was introduced with effect from July 1, 1954. The Armed Forces personnel and those employed in the Railway Services were excluded from the scheme. Prior to the introduction of the Scheme, Central Government servants and members of their families were entitled to free medical aid with many reservations. Under the old system, they had initially to incur expenditure on their medical treatment under advice of authorised medical attendants and later get reimbursed from Government to the extent admissible under the rules. This system of reimbursement was a great handicap, especially for low paid Government employees, who could ill afford to incur initial expenditure. Besides, it involved considerable clerical labour causing delays in the settlement of claims. Moreover, the system of allowing the authorised medical attendants, who were mostly working on a part time basis, to charge fees, was unsatisfactory and led to many malpractices. The need for better arrangements for medical attendance of Union Government servants was, therefore, felt and a compulsory Contributory Health Service Scheme was introduced.

The scheme extended the benefit of free medical service to all classes of Central Government servants as well as to their families (other than Armed Forces and Railway Services). The facilities provided under the scheme included: (i) Free medical attendance by authorised medical attendant, both in hospital and at the residence of the patient provided the authorised medical attendant was satisfied that this was necessary owing to lack of hospital facilities or to severity of the illness; (ii) Free medical treatment in hospitals, including free service in respect of diagnostic, medical, and surgical facilities available in the institution. Hospital accommodation suited to the status of the Government servant was also provided without payment In the case of Government servants drawing pay less than Rs. 100 p.m., diet charges were also borne by Government (iii) All medicines, special or ordinary, that are considered necessary by the medical attendant were supplied free of cost; (iv) Facilities for treatment of diseases of eye, ear, nose and throat as well as for dental ailments were provided and arrangements made for the treatment of special diseases like Tuberculosis, Cancer, Poliomyelitis, etc., both in Delhi as well as outside. Dispensaries were opened in different parts of Delhi and New Delhi to cater to the requirements of the Central Government servants. For such improved medical service, Government servants were required to pay monthly contributions at rates noted in Table 32.

Table 32. Monthly Contribution for Health Services

(Rupees)

Gradation according to pay	Rate of monthly contribution
2,000 and above	12
From 1,500 to 1,999	9
From 1,000 to 1,499	6
From 750w 999	5
From 500 to 749	4
From 250 to 499	2.5
From 151 to 249	1.5
From 76 to 150	0.75
Upto 75	0.50

The Fourth Pay Commission recommended revision of the rates of contribution for the Central Government Health Scheme. These rates were to apply to pensioners too (Table 33).

Table 33. Monthly Contribution for Health Services

(Rupees)

Pay Range	Rate of month
5,100 and above	25
2,800 and above but less than Rs. 5,100	20
1,900 and above but less than Rs. 2,800	15
1,400 and above but less than Rs. 1,900	10
1,100 and above but less than Rs. 1,400	5
Below Ra.1,100	2

The Fourth Pay Commission made a number of other recommendations for Central Government servants including those for medical facilities, special compensatory allowances, risk allowance, non-practising allowance, travel allowance, and leave travel concession, general provident fund, etc.

Age of Retirement

The First Pay Commission recommended the age for compulsory retirement uniformly at 58 years for all permanent pensionable employees, and permanent non-pensionable employees who are entitled to alternative retirement benefits, e.g., a Contributory Provident Fund and/or special contribution or gratuity, with an option to Government to retire an employee on ground of loss of efficiency at 55 years. But this was not accepted and the age of retirement remained unchanged at 55. The Second Pay Commission reiterated the recommendations of the First Pay Commission that the age of superannuation should be raised from 55 to 58 years for all classes of public servants, including those for whom the retirement age was 60. The Government raised the age of superannuation to 58 from December 1962. The Third Pay Commission recommended that the age of retirement for the Central Government employees should continue to be 58 years. The Fourth Pay Commission agreed that at the present stage of development of the Indian economy there was no need to change the existing age of retirement of 58 years though it had to be appreciated that in a developing economy there was need to provide employment opportunities to a growing number of educated and skilled personnel.

Pension and Gratuity

Pensions of Central Government employees were dealt with by provisions contained in (a) Superior Civil Service Rules, (b) Civil Service Regulations, (c) Civil Pensions (Commutation) Rules, 1925, and (d) Central (Class IV) Services (Gratuity, Pension, and Retirement) Rules, 1936. The retirement benefits admissible to civilian central government employees mainly consist of superannuation or retiring pension, death-cum retirement gratuity (DCRG), encashment of earned leave, and facility to commute a portion of pension. The main features of the system of superannuation/retiring pension are: (i) that pension is non-contributory; (ii) it is liable to be withheld in certain circumstances; and (iii) it is subject to future good conduct of the pensioner. Main elements which go into computation of pension are length of qualifying service of the retiring employee, his reasonable emoluments, and pension formula. There are also orders prescribing a minimum pension. The rules and regulations governing these have been modified from time to time mainly for improving pensionary benefits. These changes have been made by Government on its own or on the recommendations of Pay Commissions.

The First Pay Commission recommended that the rate of earning pension be reduced from 1/60 to 1/80 per year of service subject to a maximum of 35/80. To compensate the reduction in pension, a gratuity of half a month's pay per year of service subject to a maximum of 15 months' pay was recommended 'as a retiring gratuity or death benefit, as the case may be'. The Commission did not favour extension of the Railway provident fund scheme to other Government servants. They were also opposed to extension of commutation of pension rules and grant of commutation amounts without medical examination. In the case of non-pensionable employees, compulsory insurance could take the form of an option to take an annuity for a given period instead of a pure life insurance cover. The retiring benefit for every public servant should consist of two components: (i) a recurring monthly pension and (ii) an insurance cover, the premia for which would be found by Government by making a reduction of 25 per cent in the amount of pension. The Commission further recommended that if a Government servant should die in harness, after completing 25 years of service, or shortly after retirement, the widow and dependent children of the deceased should be allowed to draw a portion of the pension limited to half of the pension earned subject to a maximum of Rs. 150 per month for a maximum period of say five years.

While accepting pension at 1/80 of average monthly emoluments for each completed year of qualifying service, Government reduced the maximum to 30/80 as against the Commission's recommendation of 35/80. Gratuity was made available at 9/20 of monthly emoluments for each completed year of service, subject to a maximum of 15 times the emoluments, and to a ceiling of Rs. 24,000.

As a result of the recommendations of the First Pay Commission, the Liberalised Pension Rules, 1950 were notified with option to those who had entered permanent pensionable service before October 1, 1938 to come over to those rules or to continue under the earlier regulations and orders. The Liberalised Pension Rules were in the nature of modifications to earlier Civil Service Regulations and instructions; executive instructions continued to be issued under these Rules following the recommendations of the later Pay Commissions and other decisions of Govern ment Ultimately a single set of rules called the Central Civil Services (Pension) Rules, 1972 were issued and came into effect from June 1, 1972. The Civil Pensions (Commutation) Rules, 1925 were replaced by Central Civil Services (Commutation of Pension) Rules, 1981 and came into force from July 1, 1981.

Rule 2 of the Pension Rules of 1972 apply to government employees, including civilian employees in the Defence Services, appointed substantively to civil services and posts in connection with the affairs of the union which are borne on pensionable establishments including employees of Union Territories, but do not apply to (a) railway servants, (b) persons in casual and daily rated employment, (c) persons paid from contingencies, (d) persons entitled to the benefit of Contributory Provident Fund, (e) members of the All-India Services, (f) persons locally recruited for services in diplomatic, consular or other Indian establishments in foreign countries, (g) persons employed on contract except when the contract provides otherwise, and (h) persons whose terms and conditions of service are regulated by or under the provisions of the Constitution or any other law for the time being in force.

Prior to coming into force of Liberalised Pension Rules, 1950 (LP Rules), only permanent service was treated as qualifying service. However, in the light of the recommendations of the First Pay Commission, it was provided under these rules that half the temporary service and full quasi-permanent service, if followed by permanent service, would also count for pension. This position was further liberalised from April 22, 1950 when the entire temporary service which was followed by confirmation was allowed to be treated as qualifying service for pension. Under the LP rules, only periods of earned leave taken by the employee counted for pension. This position was again liberalised from April 1, 1963 and it was decided that periods of leave for which the employee was paid leave salary would count as qualifying service. In 1968 and 1976 even extraordinary leave granted on medical certificate or for prosecuting higher technical and scientific studies, etc., was allowed to count as qualifying service.

Prior to April 17, 1950, employees of 'inferior services', that is, Grade IV were eligible for pension only after completion of 20 years qualifying service, while other employees qualified for pension on completion of 10 years of service. This disparity was removed in the LP Rules and all employees were made eligible for pension after completing 10 years qualifying service.

Earlier, pensions were determined with reference to the average emoluments drawn during the last 36 months of the employee's service. The position was liberalised with effect from February 29, 1976 when the period of 36 months was reduced to 10 months. As regards the elements of pay to be included in emoluments, provision in the LP rules was that only pay drawn against a substantive post was treated as emoluments. However, the rules in this regard were liberalised twice, once from April 22, 1960, when substantive pay and the pay actually drawn in officiating or temporary appointment was reckoned as emoluments, and again from June 15, 1968 when all types of pay (including officiating pay) was reckoned as emoluments.

The Second Pay Commission recommended that the rate of gratuity should be changed so that the maximum permissible amount becomes available on completion of thirty years' qualifying service. Government accepted this recommendation; the rate of gratuity was accordingly increased from 9/20 of a month's emoluments to 10/20 of a months emoluments for each completed year of qualifying service. The Commission had recommended higher scales of pay in its report, which would automatically raise the retirement benefits of the employees concerned. In view of this, and also keeping in view interests of tax payers, the Commission did not recommend any increase in the pensionary benefits.

The Third Pay Commission agreed with the views of the Second Pay Commission that no change was necessary in the prevalent formula for computing pension except that the maximum qualifying service for pension should be increased from 30 to 33 years. The death-cum-retirement gratuity should also continue to be calculated on the prevalent basis except that the qualifying years should be increased from 30 to 33 years, and the upper pay limit from Rs. 1,800 to Rs. 2,500 per month. Also, the maximum amount of gratuity for purposes of tax liability should be increased from Rs. 24,000 to Rs. 30,000.

A major change in the rules governing grant of pension was the introduction of the slab system for calculation of pension with effect from March 31, 1979 whereby a distinction was made between employees in different pay slabs by prescribing three different rates of pension, viz., 50 per cent, 45 per cent, and 40 per cent of the average emoluments. Like all previous improvements in the pensionary benefits, it was intended to be given effect from a prospective date. But the matter went before the Supreme Court and by its judgement dated December 17, 1982, the Supreme Court held that all Central Government pensioners governed by pension rules were entitled to pension with effect from April 1, 1979 as computed under the liberalised pension formula irrespective of the date of their retirement. This was the first time that benefit of certain improvements in pensionary benefits was extended to pensioners who had retired prior to the date from which improvements became effective. In terms of this judgement, the following improvements in pensionary benefits were extended by Government to all existing pensioners: (i) application of slab system for calculation of pension; (ii) calculation of average emoluments over the preceding ten months instead of thirty-six months; (iii) benefit of qualifying service up to 33 years instead of 30 years; and (iv) raising the ceiling on pension to Rs. 1,500 per mensem. Government also extended the benefit of minimum pension to existing pensioners. The minimum pension fixed from time to time was as follows: Rs 25 (January 1, 1964); Rs 40 (March 1, 1970); Rs 60 (March 1, 1980); Pension plus relief to be not less than Rs 150 (April 1, 1982); Pension plus relief to be not less than Rs 160 (April 1,1983).

The slab system introduced by Government in March 1979 referred to the then prevailing pay structure. The Fourth Pay Commission, in view of the revisions in salaries recommended by it and also to simplify and rationalise matters, recommended that pension may be calculated at 50 per cent of the revised pay for all categories of Central Government employees. The Commission further recommended that the basic pension for government employees may not exceed Rs. 4,500 per month. No change was recommended by the Commission in the rules governing Death-cum-Retirement Gratuity (DCRG). The ceiling on gratuity was revised by Government in March 1985 and raised to Rs. 50,000. The same could also be treated as retirement gratuity. Temporary employees who had rendered continuous satisfactory service for long periods should be given the benefits of pension and DCRG as available to permanent employees on superannuation. The required period of service for them could be reduced from 20 to 10 years. In the case of employees whose total temporary service was less than 10 years at the time of retirement, terminal gratuity could continue as prevalent. Minimum pension should be fixed at Rs. 300 per month.

The Commission recommended revision of family pension at the following rates: For Basic Pay in the revised scale (a) Rs. 1500 and below - 30 per cent of pay subject to a maximum of Rs 300; (b) Above Rs 1500 - 15 per cent of pay subject to a minimum of Rs 450 and a maximum of Rs 1000. Further, it recommended the fixation of minimum pension for past pensioners also at Rs. 300 per mensem.

The Commission recommended grant of relief to all past pensioners, as also to those who retired in the future, for price rise over index avenge of 608. These increases were to be based on the four tables being used by the disbursing authorities for determination of graded relief on the pensions being disbursed by them.

In the Part II of its report submitted in December 1986, the Fourth Pay Commission considered the pension structure for pensioners - both past and future - and the death-cum-retirement benefits including improvements in the rates of family pension extraordinary pension, terminal benefits to temporary employees, etc. The Commission estimated the likely additional costs on account of theft recommendations (Table 34).

Table 34. Likely Additional Costs on Payment of Revised

Item	Estimated Expenditure per Annum (Rs. in Crore)		
	Civilian Employees including UTs	Armed Forces Personnel	TOTAL
1. Retiring pension and gratuity	10	15	25
2. Ex-gratia payment to retirees under Contributory Provident Fund Scheme	27	..	27
3. Rationalisation of Pension Structure-			
(i) for pensioners	73	114	187
(ii) for family pensioners	21	14	35
4. Improvement in the Disability Element and Constant Attendant Allowance	..	24	24
TOTAL	131	167	298
	Say Rs. 300 Crore		

Of the estimated annual expenditure, improvements in retirement benefits for future pensioners were to cost about Rs. 25 crore. The remaining 90 per cent was in respect of rationalisation of the existing pension structure and much needed relief for past pensioners and retires and was justified for meeting theft genuine needs.

The Commission recommended that death-cum-retirement benefits for Central Government employees including employees of Union Territories, personnel belonging to all-India services and armed forces personnel and the rationalised pension structure for pensioners proposed by them may be made applicable with effect from January 1, 1986.

Additional cost of Pay Commissions' Recommendations

The Second Pay Commission had estimated the additional annual cost of their recommendations, including the cost of interim relief recommended by them, at Rs. 39.62 crore (Table 35).

Table 35. Estimated Additional Expenditure of Second Pay Commission's Recommendations

	Rs. in Crore Per Annum
Revised Scales of Pay and Dearness Allowance	22.30
House Rent Allowance	1.12
Compensatory Allowance	0.12
Improved Family Pension Scheme	1.00
Extension of the Contributory Health Service Scheme	3.40
Educational Facilities	0.18
Canteen Facilities	0.50
Interim Relief	11.00
TOTAL	39.62

The Third Pay Commission suggested that the scales of pay recommended by them should be made applicable from 1st March 1973.

The additional cost of the three instalments of interim relief sanctioned on the recommendations of the Third Pay Commission amounted to about Rs. 175.91 crore. The immediate cost of the recommendations in its final report relating to the scales of pay, pensionary benefits, etc., was estimated at Rs. 144.60 crore (Table 36).

Table 36. Estimated Additional Expenditure of Third Pay Commission's Recommendations

		Rs. in Crore Per Annum
1. Proposed Scales of Pay for Civilian Employees		60.50
2. House Rent Allowance		22.00
3. Compensatory City Allowance		2.38
4. Retiring Pension and Gratuity		11.80
	TOTAL	96.68
5. Plus 10% for Union Territory Employees		9.67
6. Armed Forces Personnel		38.25
	GRAND TOTAL	144.60

The Fourth Pay Commission estimated the additional cost of major items of their recommendations as under. These estimates did not include the pension structure or death-cum-retirement benefits mentioned earlier (Table 37).

Table 37. Estimated Additional Expenditure of Fourth Pay Commission's Recommendations

		Rs. in Crore Per Annum
A. Civilian Employees including U.T.		
1) Fixation of Pay in Proposed Stale of Pay		450
2) House Rent Allowance		387
3) Compensatory (City) Allowance		28
4) Other Allowances and Facilities		100
		965
B. Armed Forces Personnel		
1) Fixation of Pay in Proposed Scale of Pay		215
2) Compensation in Lieu of Quarters		68
3) Compensatory (City) Allowance		9
4) Other Allowances and Facilities		25
		317
	Grand Total A+B	1,282

Closing Remarks

It is thus that we have now in India a well provided Central Government Service with salaries protected by dearness allowance and supplemented by House Rent Allowance, Children's Education Allowance, Health Service, and Pension and Death-benefits. The credit is due to the four Pay Commissions and other commissions and committees appointed in the same connection. The commissions and committees, manned as they were mostly by government employees, represented the case of the employees better than their associations or unions could have done. On the whole, they gave the employees not only a fair but a generous deal.

It was implicit in the appointment of these commissions and committees that they would take a wider view of the problem and place the government employees within the limits of the national economy. Sometimes, this was made explicit and specific in their terms of reference. For instance, the forth term of reference of the Dearness Allowance Commission (1966) reads as follows:

(4) Specifically, to report on the following: (a) Considering that the non-plan Revenue expenditure of State Governments gets reflected in the financial assistance given by the Centre on the recommendations of the Finance Commissions and in the annual plan allocations, and having regard to the existing disparities between the pay scales of Central and State employees, is it justifiable to follow a different policy at the Centre from the States and to treat the employees of the former more liberally in the matter of dearness allowance ? (b) My relief which the Central Government gives to its employees entails a burden on the rest of the community, particularly other vulnerable sections with fixed incomes. To what extent should Government give preferential treatment to that section of the community which is directly under its employ? (c) Is it justifiable to compensate Government employees for rise in prices due to taxation and other policy-induced causes, or to occasions such as a severe crop failure or a threat to national security necessitating higher levels of expenditure? (d) Should the capacity of Government, and therefore of the community, to pay be the determining factor for granting relief to Government employees ? To what extent can this be reconciled with the concept of dearness allowance as a device to protect, to a varying degree, the real income of salaried employees from the effects of rise in prices?

These are the pertinent questions. The Dearness Allowance Commission got round them by declaring that "these issues have lost their meteriality and even their relevance having regard to the fact we have adopted the narrower construction of the concept of dearness allowance" (para 5.1)

The preamble to the Government Resolution appointing the Study Group on Wages, Incomes and Prices (1978) reads as follows: "Serious distortions have crept into the structure of pay, DA, and other compensatory allowances of employees in public and private sector. These distortions have been largely the result of *ad hoc* approach followed in the past to the problem of periodical revision of emoluments in public enterprises and in organised private industry. Moreover, a major part of the employment in the country is in the rural sector. The incomes of the vast majority of the people in agricultural sector are low and are also liable to serious fluctuations. My rationalisation of the existing pattern of wages and incomes in different sectors can however be attempted only as an Integrated Policy on Wages, Incomes, and Prices." But the members of the Study Group belonged to the high income and top salaried class. Naturally, the Study Group, among other things, raised the question whether there should not be some upward revision of salaries in those ranges in order to continue to attract persons of the requisite calibre to those posts.

The Royal Commission on the Public Services in India (1915) was more circumspect and laid down the broad principle that the Government should pay 'so much and so much only to its employees as was necessary to, obtain recruits of the right stamp and to maintain them in such a degree of comfort and dignity as would shield from temptation and keep them efficient for the term of their service' and opined that 'to set in India for the public services a standard of remuneration which is in excess of what is required to obtain suitable Indian officers is to impose for all time on the country a burden which she ought not to bear'. Earlier, the Meston Committee (1908), referring to the subordinate clerical services suggested that the recruitment to these services should be 'subject to the ordinary laws of demand and supply'. That the remuneration to government servants in India is in excess of what the market demands is obvious from the fact of over-supply; for each one admitted into the service, there are at least a hundred, probably a thousand, who are turned back. It is not clear whether the remuneration is adequate or right to 'obtain recruits of the right stamp'. In fact, it is not clear whether a higher remuneration ensures better quality; experience shows that remuneration in excess of what the market demands not only creates excess supply but also generates pressures and influences pushing recruits of the wrong type. In any case, no remuneration seems to be enough to maintain the government employees 'in such a degree of comfort and dignity as would shield them from temptation and keep them efficient for the term of their service'. Undoubtedly, in their number and remuneration, the government employees are proving a burden which the country 'ought not to bear'. The previous Planning Commission, in its document 'Eighth Plan : Perspective and

Issues' had the following to say: "Between 1980-81 and 1985-86, the wage bill in public administration and publicly provided services has doubled. If the average compensation per employee in these sectors had increased only as much as the consumer price index and if the total number of employees had remained constant the total wage bill for these employees would have been lower by about Rs. 4,500 crore. Roughly one-third of this amount is accounted for by the increase in the real compensation per employee. A similar pattern holds for commercial enterprises in the public sector. We must recognise that high wage public employment could well limit our ability to sustain a more broad based programme for employment generation and poverty alleviation" [Planning Commission, 1989, Pp, 21-22]. We should await the approach of the new Planning Commission to this central question.

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Statement 1. Census of Central Government Employees in Different Pay Ranges

(thousand)

Pay Range (Rs.)	30th June 1948	1st Dec. 1951	30th June 1953	30th June 1954	30th June 1955	30th June 1956	30th June 1957	30th June 1958	30th June 1959	31st March 1960
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
- 5	941.9	901.10	814.99	876.26	913.97	960.79	962.41	1,009.26	1,035.89	990.55
51 - 100	368.9	427.03	420.84	435.23	461.77	499.75	506.89	520.29	534.15	558.22
101 - 150	64.7	96.24	103.22	115.50	126.09	132.45	148.53	168.37	181.11	215.29
151 - 200	31.8	54.95	53.26	57.20	55.36	57.36	62.67	67.84	73.93	83.58
201 - 250	12.5	17.43	20.24	21.92	23.05	24.73	25.78	28.56	30.72	37.47
251 - 300	6.4	8.58	9.74	11.59	12.04	12.51	14.99	16.35	17.79	19.66
301 - 350	10.6)	6.51	6.81	6.85	7.28	8.47	9.34	9.96	10.90	11.83
351 - 500	0.0)	8.50	8.70	9.69	9.82	10.34	11.15	11.90	13.79	15.40
501 - 750	3.7	4.48	4.72	4.99	5.18	5.49	6.18	6.64	7.13	7.45
751 - 1,000	1.3	2.23	2.12	2.27	2.45	2.52	3.01	3.15	3.48	3.70
1,001 - 1,500	1.1	1.25	1.14	1.30	1.37	1.55	1.74	1.79	2.01	2.16
1,501 - 2,000	0.4	0.44	0.50	0.53	0.54	0.57	0.65	0.69	0.73	0.77
2,000 - 2150	0.3)	0.08	0.38)	0.18	0.18	0.19	0.21	0.22	0.22	0.21
2,151 - 3,000	0.0)	0.29	0.00)	0.19	0.18	0.16	0.16	0.16	0.16	0.13
3,001 +	0.1	0.06	0.06	0.07	0.06	0.07	0.08	0.08	0.08	0.08
TOTAL	1,443.7	1,529.18	1,446.72	1,543.76	1,619.35	1,716.96	1,753.79	1,845.27	1,912.09	1,946.50
			(113.907)	(68.790)	(66.946)	(74.206)	(83.619)	(68.512)	(76.242)	(78.737)

Figures in brackets are for work-charged personnel, contingency staff and locally recruited staff in Indian Offices Abroad whose break-up pay-wise is not given.
Source: "*Census of Central Government Employee?*" CSO, Cabinet Secretariat, Government of India, New Delhi (various issues).

Statement 2. Census of Central Government Employees in Different Pay Ranges

(thousand)

Pay Range (Rs.)	As on 31st March												
	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970*	1971*	1972*	1973*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
-	541.48	399.90	415.50	422.30	481.04	464.33	469.64	455.78	425.87	0.06	0.08	0.10	0.01
75-100	532.53	723.66	783.45	848.79	839.11	872.29	873.64	883.88	893.68	3.19	2.61	2.49	1.89
100-150	481.11	461.84	483.61	532.85	521.50	553.79	560.09	571.15	592.45	1,313.59	1,314.63	1,295.41	1,345.59
150-200	242.22	266.79	288.14	320.37	313.02	331.73	330.49	339.78	343.86	470.62	475.93	490.66	503.12
200-300	118.09	123.56	141.89	151.41	160.46	176.05	189.13	202.11	210.19	493.70	517.76	552.70	572.09
300-400	34.13	34.56	40.88	45.17	48.14	53.49	58.31	63.07	67.79	212.44	220.27	230.39	236.84
400-500	16.78	18.08	20.74	22.12	22.95	25.12	25.92	27.63	30.20	77.29	82.44	88.10	98.20
500-750	11.22	13.02	15.07	17.03	19.07	20.77	21.83	22.70	25.80	49.25	54.31	58.83	64.32
750-1,000	4.77	5.23	5.90	6.67	7.55	8.01	8.93	10.45	10.26	15.46	16.04	17.43	19.43
1,000-1,500	2.94	3.44	3.90	4.52	4.89	5.06	5.39	6.03	6.23	10.24	11.36	11.91	12.52
1,500-2,000	0.83	0.84	0.98	1.20	1.20	1.31	1.51	1.73	1.55	2.24	2.05	2.10	2.30
2,000-2,500	0.25	0.33	0.36	0.45	0.48	0.39	0.43	0.47	0.47	0.60	0.65	0.67	0.79
2,500-3,000	0.09	0.07	0.07	0.08	0.11	0.22	0.25	0.29	0.28	0.33	0.35	0.36	0.38
3,000 +	0.14	0.13	0.14	0.14	0.15	0.17	0.17	0.17	0.16	0.19	0.18	0.16	0.17
TOTAL	1,986.57	2,051.44	2,200.64	2,373.09	2,419.65	2,512.71	2,545.72	2,585.21	2,608.78	2,649.21	2,698.66	2,751.31	2,857.64
	(107.909)	(104.653)	(148.038)	(163.349)	(217.819)	(197.115)	(200.118)	(207.907)	(198.603)	(201.909)	(221.909)	(304.616)	(300.832)

Figures in brackets: As in Statement 1.

*Pay includes part of dearness allowance (dearness pay) merged with the basic pay in pursuance of the decision of the Ministry of Finance.

Source: As in Statement 1.

Statement 3. Census of Government Employees in Different Pay Ranges

(thousand)

Pay Range (Rs.)	As on 31st March								
	1974	1975	1976	1977	1978	1980	1981	1982	1983
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
- 2	342.04	249.75	203.44	185.98	179.23	188.2	194.2	196.7	215.3
200-249	954.33	1,023.17	1,107.36	1,141.17	1,156.27	1,202.5	1,225.5	1,235.6	1,204.0
250-299	514.79	515.97	503.55	507.43	14.51	557.6	574.4	594.7	614.4
300-349	361.08	331.20	347.33	360.09	368.73	392.1	399.9	407.9	424.0
350-399	279.24	312.41	302.53	304.83	309.13	291.7	298.6	305.1	309.6
400-499	214.68	242.80	260.08	264.21	279.11	291.7	306.4	315.5	327.5
500-599	111.89	132.02	148.44	155.26	168.11	178.8	183.5	189.7	192.6
600-699	53.05	63.74	67.19	71.02	74.77	79.2	81.4	83.9	94.2
700-799	29.90	39.40	39.64	41.18	44.49	49.3	51.3	52.9	58.3
800-899	18.69	20.98	20.64	21.77	23.49	25.5	27.2	28.5	30.3
900-1199	16.56	20.10	23.52	25.46	28.28	31.6	34.0	35.6	37.9
1200-1499	9.33	10.64	11.64	12.79	13.54	14.7	16.0	16.7	17.6
1500-1999	4.29	5.38	6.37	7.05	7.85	8.7	9.5	10.2	11.1
2000-2499	1.37	1.77	2.05	2.16	2.62	2.9	3.2	3.3	3.3
2500-2999	0.43	0.57	0.70	0.76	0.90	1.0	1.1	1.1	1.1
3000 +	0.20	0.23	0.22	0.23	0.27	0.3	0.3	0.3	0.3
TOTAL	2,911.87	2,970.12	3,044.69	3,101.38	3,171.29	3,321.1	3,406.6	3,477.9	3,541.5
	(308.023)	(302.166)	(298.530)	(291.446)	(306.009)				

Figures in brackets: As in Statement 1.
Data for 1979 not available.
Source: As in Statement 1.

Statement 4. Central Government Employees in Different Ministries

	Name of Ministry/Office	As on Dec. 1, 1951			As on June 30, 1953			
		Non - gazetted	Gazetted	TOTAL (2+3)	Non - gazetted	Gazetted	Works charged etc.$	TOTAL (5+6+7)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.	Commerce & Industry	6,461	440	6,901	5,718	458	194	6,370
2.	Communications	1,71,202	1,466	1,72,668	1,76,462	1,572	6,754	1,84,788
3.	Defence (Civilians)	2,60,387	2,101	2,62,488	1,92,377	2,216	61,003	2,55,596
4.	Education	2,692	250	2,942	1,915	248	961	3,124
5.	External Affairs	5,059	563	5,622	5,447	517	3,022	8,986
6.	Finance	81,848	2,929	84,777	56,671	2,396	2,283	61,350
7.	Food & Agriculture	12,570	727	13,927	9,073	686	1,136	10,895
8.	Health	2,501	185	2,686	2,769	212	24	3,005
9.	Home Affairs	3,209	237	3,446	3,753	300	49	4,102
10.	Information & Broadcasting	4,776	366	5,142	4,649	412	329	5,390
11.	Labour	5,012	488	5,500	5,193	491	39	5,723
12.	Law	388	62	450	465	71	7	543
13.	NR & SR	3,687	505	4,192	4,550	403	161	5,114
14.	Railways	9,00,751	2,378	9,03,129	8,96,173	2,430	22,598	9,21,201
15.	Rehabilitation	3,245	353	3,598	1,965	118	20	2,103
16.	States	3,485	56	3,541	3,356	54	113	3,523
17.	Transport	3,464	187	3,651	4,137	234	157	4,528
18.	Works, Housing and Supply	43,130	948	44,078	17,121	885	12,746	30,752
19.	Miscellaneous offices	983	108	1,091	1,421	196	19	1,636
20.	Irrigation & Power				1,748	222	1,011	2,981
21.	Production				11,197	121	1,229	12,547
22.	Comptroller & Auditor General of India				25,644	674	52	26,370
23.	Community Development							
24.	Iron and Steel							
25.	Cabinet Secretariat							
	TOTAL	15,14,850	14,349	15,29,199	14,31,804	14,916	1,13,907	15,60,627

$ Work Charged Personnel, Staff Paid from Contingencies and Locally Recruited in Offices Abroad
Source: As in Statement 1.

(Contd.)

Statement 4. *(Concld.)*

	Name of Ministry/Office	As on June 30, 1954				As on June 30, 1955				As on June 30, 1956			
		Non - gazetted	Gazetted	Works charged etc.$	TOTAL (9+10+11)	Non - gazetted	Gazetted	Works charged etc.$	TOTAL (13+14+15)	Non - gazetted	Gazetted	Works charged etc.$	TOTAL (17+18+19)
	(1)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
1.	Commerce & Industry	5,514	459	157	6,130	5,504	526	55	6,085	6,483	682	67	7,232
2.	Communications	1,94,358	1,684	4,417	2,00,459	2,04,622	1,681	4,483	2,10,786	2,05,675	1,745	9,246	2,16,666
3.	Defence (Civilians)	2,31,582	2,231	15,181	2,48,994	2,54,398	2,197	9,523	2,66,118	2,54,973	2,341	8,003	2,65,317
4.	Education	3,103	338	1,026	4,467	3,643	371	1,006	5,020	4,272	453	753	5,478
5.	External Affairs	6,734	577	2,292	9,603	6,415	653	2,033	9,101	6,868	697	2,414	9,979
6.	Finance	59,510	2,449	2,394	64,353	61,795	2,900	2,280	66,975	66,595	3,027	2,736	72,358
7.	Food & Agriculture	9,665	771	1,111	11,547	13,701	874	720	15,295	15,040	975	594	16,609
8.	Health	3,141	280	92	3,513	4,220	441	204	4,865	5,109	488	85	5,682
9.	Home Affairs	4,008	329	46	4,383	5,239	453	58	5,750	9,048	648	94	9,790
10.	Information & Broadcasting	4,985	442	316	5,743	5,461	473	449	6,383	6,249	577	498	7,324
11.	Labour	4,857	501	65	5,423	5,461	530	82	6,073	2,889	299	94	3,282
12.	Law	477	82	8	567	487	79	7	573	583	114	6	703
13.	NR & SR	4,712	413	69	5,194	5,580	543	264	6,389	6,199	580	210	6,989
14.	Railways	9,25,679	2,514	17,855	9,46,048	9,55,019	2,631	18,263	9,75,913	1,018,770	3,113	22,659	1,044,542
15.	Rehabilitation	2,425	230	18	2,673	3,526	290	31	3,847	6,086	422	38	6,546
16.	States	3,279	51	128	3,458								
17.	Transport	3,549	259	997	4,805	4,008	297	1,258	5,563	7,443	346	587	8,376
18.	Works, Housing and Supply	18,258	1,033	13,375	32,666	20,471	1,350	14,896	36,717	21,610	1,411	11,480	34,501
19.	Miscellaneous offices	1,581	233	41	1,855	1,242	136	3	1,381	2,035	252	-	2,287
20.	Irrigation & Power	2,900	338	6,742	9,980	3,908	504	10,136	14,548	4,020	510	14,570	19,100
21.	Production	9,566	133	2,399	12,098	14,310	161	1,154	15,616	15,002	180	1	15,183
22.	Comptroller & Auditor General of India	27,793	739	61	28,593	28,481	807	50	29,338	31,032	822	49	31,903
23.	Community Development									320	62	-	382
24.	Iron and Steel									432	73	9	514
25.	Cabinet Secretariat									1,258	68	13	1,339
	TOTAL	15,27,676	16,086	68,790	16,12,552	16,07,491	17,899	66,946	16,92,336	16,97,991	19,885	74,206	17,92,082

$ Work Charged Personnel, Staff Paid from Contingencies and Locally Recruited in Offices Abroad.
Source: As in Statement 1.

Statement 5. Central Government Employees in Different Ministries

	Name of Ministry/Office	As on June 30, 1957				As on June 30, 1958			
		Non - gazetted	Gazetted	Works charged etc.$	TOTAL (2+3+4)	Non - gazetted	Gazetted	Works charged etc.$	TOTAL (6+7+8)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1.	Commerce & Industry	9,541	898	757	11,196	11,080	1,063	774	12,917
2.	Community Development	382	69		451	402	79	19	500
3.	Defence (Civilians)	239,825	2,427	21,195	263,447	258,022	2,417	5,473	265,9f2
4.	Education & Scientific Research(a)	10,272	902	1,154	12,328	2,168	226	27	2,421
5.	External Affairs	6,840	796	2,951	10,587	6,884	818	3,985	11,687
6.	Finance	72,377	3,298	2,943	78,618	73,503	3,361	2,979	79,843
7.	Food & Agriculture	16,203	1,062	732	17,997	19,447	1,161	809	21,417
8.	Health	5,307	536	150	5,993	5,617	564	197	6,378
9.	Home Affairs	14,721	811	211	15,743	14,841	780	324	15,945
10.	Information & Broadcasting	7,048	666	467	8,181	7,824	682	639	9,145
11.	Irrigation and Power	3,791	515	4,411	8,717	4,117	566	4,526	9,335
12.	Labour & Employment	3,678	391	170	4,239	3,665	415	183	4,263
13.	Law	651	119		770	629	120	7	756
14.	Railways	1,042,567	3,736	31,614	1,077,917	1,094,158	3,863	26,400	1,124,421
15.	Rehabilitation	8,956	641	112	9,709	7,865	527	101	8,493
16.	Steel Mines & Fuel	3,500	382	30	3,912	5,632	732	456	6,820
17.	Transport & Communications	225,455	2,418	5,784	233,657	231,904	2,447	8,615	242,966
18.	Works, Housing and Supply	25,392	1,561	10,879	37,832	26,428	1,624	11,743	39,795
19.	Indian Audit & Accounts Deptt.	32,323	872	33	33,228	34,447	916	30	35,393
20.	Cabinet Secretariat	1,544	89	25	1,658	1,734	99	25	1,858
21.	Miscellaneous offices	2,055	281	1	2,337	3,669	671	23	4,363
22.	Scient. Res. & Cult. Affairs					7,811	491	1,051	9,353
	TOTAL	1,732,428	22,470	83,619	1,838,517	1,821,847	23,622	68,512	1,913,981

(a) For 1958-60, Only Education. Scientific Research and Cultural Affairs, new Ministry.
$ Work Charged Personnel, Staff Paid from Contingencies and Locally Recruited in Offices Abroad
Source: As in Statement 1.

(Contd.)

Statement 5. *(Concld.)*

	Name of Ministry/Office	As on June 30, 1959				As on March 31, 1960			
		Non - gazetted	Gazetted	Works charged etc.$	TOTAL (10+11+12)	Non - gazetted	Gazetted	Works charged etc.$	TOTAL (14+15+16)
	(1)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1.	Commerce & Industry	11,125	1,275	338	12,738	11,444	1,368	331	13,143
2.	Community Development	402	79	19	500	699	129		828
3.	Defence (Civilians)	262,218	2,469	4,929	269,616	262,218	2,554	4,429	269,201
4.	Education & Scientific Research(a)	2,532	246	20	2,778	2,736	241	45	3,022
5.	External Affairs	9,511	1,120	4,724	15,355	9,309	1,048	3,295	13,652
6.	Finance	76,059	3,503	3,328	82,890	75,054	3,616	3,312	81,932
7.	Food & Agriculture	21,414	1,393	2,055	24,862	23,537	1,497	2,944	27,978
8.	Health	6,294	622	198	7,114	6,983	734	60	7,777
9.	Home Affairs	15,209	864	284	16,357	18,424	958	305	19,687
10.	Information & Broadcasting	8,162	709	775	9,646	8,324	694	874	9,892
11.	Irrigation and Power	4,007	625	7,242	11,874	4,149	610	7,568	12,327
12.	Labour & Employment	3,856	478	337	4,671	3,986	488	331	4,805
13.	Law	661	127	16	804	675	138	13	826
14.	Railways	1,129,718	4,303	20,731	1,154,752	1,144,787	4,297	19,929	1,169,013
15.	Rehabilitation	8,813	526	221	9,560	9,289	511	584	10,384
16.	Steel Mines & Fuel	6,447	855	2,478	9,780	4,900	778	1,462	7,140
17.	Transport & Communications	240,767	2,826	15,595	259,188	253,856	2,933	16,423	273,212
18.	Works, Housing and Supply	27,517	1,709	11,471	40,697	25,763	1,390	13,984	41,137
19.	Indian Audit & Accounts Deptt.	36,461	971	50	37,482	37,593	1,002	89	38,684
20.	Cabinet Secretariat	2,090	110	30	2,230	2,015	116	28	2,159
21.	Miscellaneous offices	4,574	977	189	5,740	5,243	1,285	184	6,712
22.	Scient. Res. & Cult. Affairs	8,377	555	1,212	10,144	8,540	589	2,547	11,676
	TOTAL	1,886,214	26,342	76,242	1,988,798	1,919,524	26,978	78,737	2,025,237

(a) For 1958-60, Only Education. Scientific Research and Cultural Affairs, new Ministry.
$ Work Charged Personnel, Staff Paid from Contingencies and Locally Recruited in Offices Abroad
Source: As in Statement 1.

Statement 6. Central Government Employees in Different Ministries

	Name of Ministry/Office	As on March 31, 1961				As on March 31, 1962			
		Non - gazetted	Gazetted	Works charged etc.$	TOTAL (2+3+4)	Non - gazetted	Gazetted	Works charged etc.$	TOTAL (6+7+8)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1.	Commerce & Industry	12,081	1,325	408	13,814	11,997	1,302	387	13,686
2.	Community Development	786	159	-	945	726	161	-	887
3.	Defence (Civilians)	276,252	2,925	5,422	284,599	292,234	2,952	5,820	3,01,006
4.	Education	4,564	266	24	4,854	3,713	204	6	3,923
5.	External Affairs	9,310	984	2,138	12,432	9,334	980	1,826	12,140
6.	Finance	82,757	4,076	1,132	87,965	82,016	3,773	923	86,712
7.	Food & Agriculture	25,196	1,606	3,117	29,919	25,948	1,699	2,226	29,873
8.	Health	7,399	795	45	8,239	7,598	851	42	8,491
9.	Home Affairs	21,565	946	777	23,288	25,078	1,027	385	26,490
10.	Information & Broadcasting	8,540	734	779	10,053	8,911	825	763	10,499
11.	Irrigation and Power	3,478	571	1,807	5,856	3,408	581	1,705	5,694@
12.	Labour & Employment	3,654	491	687	4,832	4,337	541	695	5,573
13.	Law	710	141	11	862	731	144	11	886
14.	Railways	1,142,350	4,571	23,331	1,170,252	1,175,125	4,842	23,293	1,203,200
15.	Rehabilitation	8,983	529	626	10,138	8,113	400	1,173	9,686
16.	Scientific Res. & Cult. Affairs	9,334	628	2,918	12,880	9,155	601	2,573	12,329
17.	Steel Mines & Fuel	5,552	747	559	6,858	5,879	818	348	7,045
18.	Transport & Communications	259,538	3,096	49,360	311,994	270,506	3,431	53,068	327,005
19.	Works, Housing and Supply	30,568	1,730	14,042	46,340	31,211	1,625	8,997	41,833
20.	Indian Audit & Accounts Deptt.	37,002	1,005	90	38,097	36,610	1,040	65	37,715
21.	Cabinet Secretariat	1,982	111	26	2,119	2,020	119	25	2,164
22.	Miscellaneous offices	6,063	1,468	610	8,141	7,046	1,825	322	9,193
	TOTAL	1,957,664	28,904	107,909	2,094,477	2,021,1696	29,741	104,653	2,156,090

@ Excludes 130 employees for whom data are not available.
$ Work Charged Personnel, Staff Paid from Contingencies and Locally Recruited in Offices Abroad
Source: As in Statement 1

Statement 7. Central Government Employees in Different Ministries

	Name of Ministry/Office	As on March 31, 1963				As on March 31, 1964			
		Non - gazetted	Gazetted	Works charged etc.$	TOTAL (10+11+12)	Non - gazetted	Gazetted	Works charged etc.$	TOTAL (14+15+16)
	(1)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1.	Commerce & Industry	11,969	1,348	396	13,713				
2.	Community Development(a)	812	187	6	1,005	799	172		971
3.	Defence (Civilians)	3,48,864	3,353	9,565	3,61,782	426,914	4,499	10,008	4,41,421
4.	Education	5,605	229	3	5,837	16,784	909	4,724	22,417
5.	External Affairs	9,499	1,120	2,455	13,074	10,699	1,229	2,024	13,952
6.	Finance	49,712	4,214	1,297	95,223	98,172	4,609	1,410	1,04,191
7.	Food & Agriculture	29,166	2,032	2,446	33,644	31,289	2,124	1,639	35,052
8.	Health	9,115	962	197	10,274	9,192	1,046	109	10,347
9.	Home Affairs	28,975	1,066	395	30,436	31,053	1,128	389	32,570
10.	Information & Broadcasting	8,599	1,486	1,174	11,259	8,895	1,531	1,088	11,514
11.	Irrigation and Power	3,629	709	1,130	5,468	3,951	871	1,827	6,649
12.	Labour & Employment	4,883	623	518	6,024	5,332	680	546	6,558
13.	Law	745	160	11	916	772	179	16	967
14.	Railways	12,23,645	5,123	51,571	12,80,339	12,74,879	5,837	53,027	13,33,743
15.	Scientific Res. & Cult. Affairs	10,102	624	3,075	13,801				
16.	Steel Mines & Fuel(b)					7,454	1,109	253	8,816
17.	Transport & Communications	2,90,118	3,694	60,162	3,53,974	24,069	1,678	623	26,370
18.	Works, Housing and Supply(c)	33,265	1,658	12,849	47,772	34,805	1,702	14,017	50,524
19.	Indian Audit & Accounts Deptt.	36,941	1,108	92	38,141	37,803	1,174	105	39,082
20.	Cabinet Secretariat	2,351	126	39	2,516	2,292	130	46	2,468
21.	Miscellaneous offices	7,031	1,846	322	9,199	13,679	2,692	335	16,706
22.	Economic & Defence Coordination	5,602	730	93	6,425				
23.	Mines & Fuel	5,677	915	239	6,831				
24.	Steel and Heavy Industries	951	68	3	1,022				
25.	Industry					5,894	609	136	6,639
26.	International Trade					5,055	634	90	5,779
27.	Petroleum & Chemicals					188	45		233
28.	Department of Post & Telegraphs					2,86,226	2,309	70,937	3,59,472
	TOTAL	21,67,256	33,381	1,48,038	23,48,675	23,36,196	36,896	1,63,349	25,36,441

(a) For 1964(a) includes Community Development and Cooperation. (b) includes Steel, Mines and Heavy Industries. (c) For 1963 and 1964(c) includes Works, Housing and Rehabilitation.
$ Work Charged Personnel, Staff Paid from Contingencies and Locally Recruited in Offices Abroad
Source: As in Statement 1.

Statement 8. Central Government Employees in Different Ministries

	Name of Ministry/Office	As on March 31, 1965				As on March 31, 1966			
		Non - gazetted	Gazetted	Works charged etc.$	TOTAL (2+3+4)	Non - gazetted	Gazetted	Works charged etc.$	TOTAL (6+7+8)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1.	Cabinet Secretariat	2,189	158	31	2,378	2,258	190	21	2,469
2.	Civil Aviation	10,632	1,004	62	11,698				
3.	Commerce	5,654	743	121	6,518	6,028	834	232	7,094
4.	Communications	2,93,322	2,744	1,21,089	4,17,155	3,15,504	3,018	1,01,001	4,19,523
5.	Community Develop. & Cooperation(a)	824	186	3	1,013				
6.	Defence (Civilians)	4,27,033	5,063	10,452	4,42,548	4,38,920	4,920	11,562	4,55,402
7.	Education	18,469	950	4,186	23,605	20,705	1,000	5,101	26,806
8.	External Affairs	12,141	1,000	1,549	14,690	10,711	915	2,404	14,030
9.	Finance	97,551	4,746	1,272	1,03,569	1,00,525	5,019	966	1,06,510
10.	Food & Agriculture(a)	32,076	2,195	2,457	36,728	33,296	2,474	1,467	37,237
11.	Health(b)	9,784	1,121	116	11,021	10,476	1,210	148	11,834
12.	Home Affairs	30,607	1,119	461	32,187	35,802	1,316	598	37,716
13.	Indian Audit & Accounts Deptt.	38,262	1,258	123	39,643	39,801	1,328	81	41,220
14.	Industry & Supply (c)	12,092	1,493	308	13,893	5,157	561	183	5,901
15.	Information & Broadcasting	9,705	1,618	1,131	12,454	10,259	1,654	1,165	13,078
16.	Irrigation and Power	5,073	1,051	3,252	9,376	5,851	1,208	4,219	11,278
17.	Labour & Employment(d)	5,641	741	554	6,936	14,601	1,194	2,074	17,869
18.	Law	863	204	16	1,083	1,923	341	34	2,298
19.	Petroleum & Chemicals	194	50		244	221	50		271
20.	Railways	13,08,671	6,236	55,080	13,69,981	13,44,391	6,439	49,696	14,00,526
21.	Rehabilitation	6,998	354	1,501	8,853				
22.	Social Security(e)	998	76	97	1,171	787	77	31	895
23.	Steel Mines(f)	7,793	1,188	267	9,248	766	74	6	846
24.	Transport(g)	3,837	570	405	4,812	15,450	1,714	489	17,653
25.	Works and Housing	29,441	1,396	12,372	43,209	31,577	1,524	13,307	46,408
26.	Miscellaneous offices	9,992	2,547	914	13,453	11,357	2,949	1,747	16,053
27.	Mines & Metals					7,214	1,244	462	8,920
28.	Supply, Tech. Develop. & Mat. Planning					6,941	931	117	7,989
	TOTAL	23,79,842	39,811	2,17,819	26,37,472	24,70,527	42,184	1,97,115	27,09,826

(b) includes Health and Family Planning; (c) includes Industry only; (d) includes Labour, Employment and Rehabilitation; (e) includes Social Welfare; (f) includes Iron and Steel only; (g) includes Transport and Aviation; (h) includes Works, Housing and Urban Development;
$ Work Charged Personnel, Staff Paid from Contingencies and Locally Recruited in Offices Abroad.
Source: As in Statement 1.

Statement 9. Central Government Employees in Different Ministries

	Name of Ministry/Office	As on March 31, 1967				As on March 31, 1968			
		Non - gazetted	Gazetted	Works charged etc.$	TOTAL (10+11+12)	Non - gazetted	Gazetted	Works charged etc.$	TOTAL (14+15+16)
	(1)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1.	Cabinet Secretariat	2,340	219	24	2,583	2,421	218	22	2,661
2.	Commerce	6,137	869	308	7,314	6,086	863	237	7,186
3.	Communications	3,32,135	3,443	1,06,195	4,41,773	3,43,549	3,485	1,06,933	4,53,967
4.	Defence (Civilians)	4,41,782	5,032	9,697	4,56,511	4,51,552	5,437	16,936	4,73,925
5.	Education	21,153	1,004	5,217	27,374	22,393	1,090	5,567	29,050
6.	External Affairs	5,281	915	2,329	8,525	5,648	997	1,489	8,134
7.	Finance	1,01,839	5,806	1,155	1,08,800	1,03,953	6,041	1,365	1,11,359
8.	Food & Agriculture Community Deve. & Coop.	30,263	2,499	1,788	34,550	29,982	2,559	1,708	34,249
9.	Health and Family Planning	11,599	1,222	278	13,099	12,562	1,422	141	14,125
10.	Home Affairs	41,196	1,462	1,722	44,380	47,073	1,611	2,220	50,904
11.	Indian Audit & Accounts Deptt.	40,317	1,359	70	41,746	41,442	1,395	82	42,919
12.	Industrial Develop. & Company Affairs	7,141	993	185	8,319	8,043	1,020	204	9,267
13.	Information & Broadcasting	11,100	1,654	1,541	14,295	11,531	1,775	1,429	14,735
14.	Irrigation and Power	5,907	1,124	4,294	11,325	6,191	1,168	4,464	11,823
15.	Labour, Employment & Rehabilitation	15,125	1,244	2,256	18,625	15,770	1,299	2,048	19,117
16.	Law	775	161	12	948	980	214	9	1,203
17.	Petroleum & Chemicals	240	52		292	240	59		299
18.	Railways	13,51,840	7,290	45,280	14,04,410	13,50,661	7,386	43,547	14,01,594
19.	Social Welfare	851	81	8	940	973	88	14	1,075
20.	Steel Mines & Metals	7,998	1,378	432	9,808	8,307	1,477	517	10,301
21.	Transport & Shipping	4,194	644	594	5,432	4,352	664	543	5,559
22.	Tourism & Civil Aviation	11,661	1,171	87	12,919	11,968	1,187	111	13,266
23.	Works, Housing and Supply	37,506	2,205	14,607	54,318	38,585	2,274	15,143	56,002
24.	Miscellaneous offices	12,406	3,103	2,039	17,548	13,968	3,249	3,178	20,395
	TOTAL	25,00,786	44,930	2,00,118	27,45,834	25,38,230	46,978	2,07,907	27,93,115

$ Work Charged Personnel, Staff Paid from Contingencies and Locally Recruited in Offices Abroad.
Source: As in Statement 1.

Statement 10. Central Government Employees in Different Ministries

	Name of Ministry/Office	As on March 31, 1969				As on March 31, 1971			
		Non - gazetted	Gazetted	Works charged etc.$	TOTAL (2+3+4)	Non - gazetted	Gazetted	Works charged etc.$	TOTAL (10+11+12)
	(1)	(2)	(3)	(4)	(5)	(10)	(11)	(12)	(13)
1.	Cabinet Secretariat	2,415	226	18	2,659	6,320	951	124	7,395
2.	Communications	351,907	3,693	99,987	455,587	3,81,495	4,065	1,19,562	5,05,122
3.	Defence (Civilians)	460,089	6,709	17,583	484,381	4,66,355	7,373	20,756	4,94,484
4.	Education & Youth Services	21,501	992	5,281	27,774	22,473	1,035	4,264	27,722
5.	External Affairs	3,364	866	1,367	5,597	3,135	888	1,577	5,600
6.	Finance	107,629	6,699	875	115,203	1,11,700	7,256	1,415	1,20,371
7.	Food & Agriculture Community Deve. & Coop.	29,607	2,480	1,373	33,460	15,489	1,638	1,528	18,655
8.	Foreign Trade and Supply(a)	10,294	1,289	46	11,629	5,230	766	250	6,246
9.	Health and Family Planning	45,798	3,120	16,049	64,967	46,461	3,371	16,250	66,082
10.	Works, Housing & Urban Develop.								
11.	Home Affairs	49,804	1,893	2,250	53,947	75,975	1,784	3,129	80,888
12.	Indian Audit & Accounts Deptt.	42,704	1,497	77	44,278	49,125	1,966	112	51,203
13.	Indus. Develop. Int. Trade & Company Affairs	9,142	1,249	494	10,885	6,632	912	167	7,711
14.	Information & Broadcasting	12,221	1,843	1,381	15,445	13,221	2,013	1,486	16,720
15.	Irrigation and Power	6,350	1,172	4,955	12,477	7,079	1,372	5,200	13,651
16.	Law	959	217	12	1,188	1,112	276	21	1,409
17.	Petro. Chemi. Mines & Metals	7,584	1,423	834	9,841	8,156	1,639	805	10,600
18.	Railways	13,47,193	7,508	39,230	13,93,931	13,65,557	8,077	37,428	14,11,062
19.	Shipping & Transport	4,384	668	597	5,649	4,827	709	1,127	6,663
20.	Social Welfare	997	97	11	1,105	961	88	3	1,052
21.	Steel & Heavy Engineering	713	93	2	808	703	112	2	817
22.	Tourism & Civil Aviation	12,395	1,207	48	13,650	13,376	1,308	140	14,824
23.	Miscellaneous	14,463	3,493	3,328	21,284	15,666	4,021	4,200	23,887
24.	Company Affairs					1,224	172	58	1,454
25.	Labour, Employment & Rehabi.	17,449	1,387	2,805	21,641	16,510	1,460	2,269	20,239
26.	Supply					5,870	753	36	6,659
	TOTAL	25,58,962	49,821	1,98,603	28,07,386	26,44,652	54,005	2,21,909	29,20,566

Note: Data for 1970 not available. For 1971, (a) includes Foreign Trade only and (b) includes Industrial Development and Internal Trade only.
$ Work Charged Personnel, Staff Paid from Contingencies and Locally Recruited in Offices Abroad
Source: As in Statement 1.

Statement 11. Central Government Employees in Different Ministries

	Name of Ministry/Office	As on March 31, 1973				As on March 31, 1975				As on March 31, 1976			
		Non - gazetted	Gazetted	Works charged etc.$	TOTAL (2+3+4)	Non - gazetted	Gazetted	Works charged etc.$	TOTAL (6+7+8)	Non - gazetted	Gazetted	Works charged etc.$	TOTAL (10+11+12)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1.	Agriculture(a)	14,418	1,747	437	16,602	20,859	2,679	4,554	28,092	21,399	2,895	4,839	29,133
2.	Atomic Energy	11,776	3,346	4,666	19,788	13,809	4,474	4,140	22,423	14,429	4,758	4,415	23,602
3.	Cabinet Secretariat	4,054	717	45	4,816	4,282	763	44	5,089	4,386	842	27	5,255
4.	Commerce	5,481	808	161	6,450	5,847	874	204	6,925	5,642	808	192	6,642
5.	Communications	393,416	5,050	212,498	610,964	432,786	6,081	210,401	649,268	451,490	6,240	215,240	672,970
6.	Culture	5,290	268	293	5,851	5,381	301	225	5,907	5,580	317	131	6,028
7.	Defence (Civilians)	480,423	7,810	17,983	506,216	481,781	7,976	22,492	512,249	483,099	8,030	9,687	500,216
8.	Education & Social Welfare	2,364	360	58	2,782	2,371	438		2,809	2,098	454	120	2,672
9.	External Affairs	3,110	1,007	1,416	5,533	3,212	1,024	1,165	5,401	3,097	1,124	1,281	5,502
10.	Finance	124,104	9,073	740	133,917	131,382	9,496	908	141,786	134,221	9,995	1,398	145,614
11.	Home Affairs	148,668	2,638	1,695	153,001	160,847	2,938	128	163,915	182,707	3,394	80	186,181
12.	Health and Family Planning	14,125	1,620	265	16,010	14,626	1,781	179	16,586	14,788	1,747	230	16,755
13.	Heavy Industry(c)	70	21		91	6,411	1,079	194	7,684	6,407	1,160	273	7,840
14.	Industrial Development	5,849	930	173	6,952								
15.	Indian Audit & Accounts Deptt.	54,899	2,294	194	57,387	58,185	2,844	289	61,318	58,917	3,176	254	62,347
16.	Information & Broadcasting	13.941	2,011	1,431	17,383	14,743	2,327	1,456	18,526	15,131	2,558	1,531	19,220
17.	Irrigation and Power(b)	7,404	1,461	5,803	14,668	4,596	895	2,851	8,342	5,590	903	4,775	11,268
18.	Labour & Rehabi.(d)	15,787	1,484	1,235	18,506	7,730	1,070	588	9,388	8,090	1,085	620	9,795
19.	Law Justice & Company Affairs	2,604	492	55	3,151	2,660	521	42	3,223	2,866	567	59	3,492
20.	Petroleum& Chemicals(g)	264	85		349	248	90	21	359	197	63	27	287
21.	Planning	2,525	292	21	2,838	17,713	1,202	3,105	22,020	19,367	1,392	3,909	24,668
22.	Railways	14,02,607	8,580	27,875	14,39,062	14,32,143	8,913	27,402	14,68,458	14,47,903	9,093	27,432	14,84,428
23.	Science and Technology(f)	11,744	572	3,090	15,406					219	93		312
24.	Shipping & Transport	4,450	685	1,023	6,158	4,200	570	2,071	6,841	4,589	657	1,941	7,187
25.	Space	36	11	1	48	1,214	276	104	1,594	6,068	1,815	100	7,983
26.	Steel & Mines	9,770	1,709	774	12,253	9,636	1,761	534	11,931	8,078	1,737	1,012	10,827
27.	Supply(e)	6,266	804	35	7,105	13,542	1,119	897	15,558	13,752	1,140	773	15,665
28.	Tourism & Civil Aviation	13,346	1,338	107	14,791	13,179	1,675	140	14,994	13,618	1,736	123	15,477
29.	Works, Housing	33,871	2,348	18,709	54,928	35,462	2,221	18,001	55,684	34,730	2,504	18,010	55,244
30.	Others	4,467	946	49	5,462	4,800	1,091	31	5,922	4,724	1,071	51	5,846
31.	Chemicals and Fertilisers									120	42		162
	TOTAL	27,97,129	60,507	300,832	31,58,468	29,03,645	66,479	302,166	32,72,290	29,73,292	71,396	298,530	33,43,218

Note: Data for 1974 not available. (a) For 1975, 1976 includes Agriculture and Irrigation; (b) For 1975, 1976 includes Energy; (c) For 1975, 1976 includes Industries and Civil Supplies; (d) For 1975, 1976 includes Labour; (e) For 1975, 1976 includes Supply and Rehabilitation; (f) For 1976 includes Electronics; (g) For 1976 includes Petroleum;
$ Work Charged Personnel, Staff Paid from Contingencies and Locally Recruited in Offices Abroad.
Source: As in Statement I.

Statement 12. Central Government Employees in Different Ministries

	Name of Ministry/Office	As on March 31, 1977				As on March 31, 1978				As on March 31, 1983			
		Non - gazetted	Gazetted	Works charged etc.$	TOTAL (2+3+4)	Non - gazetted	Gazetted	Works charged etc.$	TOTAL (6+7+8)	Non - gazetted	Gazetted	Works charged etc.$	TOTAL (10+11+12)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1.	Agriculture & Irrigation	21,769	2,944	4,379	29,092	23,241	3,216	5,265	31,722	22,732	3,029	5,696	31,447
2.	Atomic Energy	16,611	5,243	4,556	26,410	16,856	5,753	4,473	27,082	18,702	6,472	3,787	28,961
3.	Cabinet Secretariat	4,581	925	164	5,670	2,677	398	7	3,082	192	33		225
4.	Chemicals and Fertilisers	167	53		220					214	77		291
5.	Commerce(a)	5,560	829	167	6,556	4,526	809	143	5,478	7,041	1,043	317	8,401
6.	Communications	478,056	6,444	222,426	706,926	494,044	7,520	233,885	735,449	633,063	12,254	294,474	939,791
7.	Culture(b)	5,804	353	175	6,332	6,056	408	144	6,608				
8.	Defence (Civilians)	489,030	8,422	12,512	509,964	500,160	8,565	11,458	520,183	522,852	11,022	13,027	546,901
9.	Education & Social Welfare(b)	2,309	466	118	2,893	2,252	532	174	2,958	8,035f	880f	186f	9,101f
10.	Electronics	266	125		391	344	133	15	492	494	232	6	732
11.	Energy	6,128	1,027	4,510	11,665	6,153	971	2,186	9,310	5,046	1,171	1,345	7,562
12.	External Affairs	3.258	1,165	1,446	5,869	3,370	1,159	1,497	6,026	3,762	1,369	1,163	6,294
13.	Finance	136,064	10,201	1,234	147,499	142,661	11,191	1,110	154,962	148,576	13,368	544	162,488
14.	Health and Family Planning(c)	16,085	2,070	334	18,489	16,632	2,187	171	18,990	18,196	2,612	203	21,011
15.	Home Affairs	182,644	3,448	101	186,193	185,023	3,804	158	188,985	266,046	6,559	1,785	274,390
16.	Indian Audit & Accounts Deptt.	54,049	3,126	419	57,594	53,022	3,152	182	56,356	52,697	3,848	127	56,672
17.	Industry	6,267	1,096	264	7,627	8,108	1,285	318	9,711	5,852	1,045	185	7,082
18.	Information & Broadcasting	15,645	2,659	1,663	19,967	16,377	2,742	1,584	20,703	18,570	3,068	2,417	24,055
19.	Labour(d)	8,075	1,098	575	9,748	8,269	1,129	3,550	12,948	15,376	1,582	785	17,743
20.	Law Justice & Company Affairs	2,817	564	79	3,460	2,862	590	54	3,506	3,235	625	91	3,951
21.	Petroleum(e)	240	76		280	364	130		494				
22.	Planning	20,975	1,488	3,815	26,278	5,011	622	65	5,698	5,944	825		6,769
23.	Railways	14,61,906	9,256	1,581	14,72,743	14,86,953	9,619	14,994	15,11,566	15,71,328	11,653	34,073	16,17,054
24.	Shipping & Transport	4,599	678	1,687	6,964	4,998	701	1,302	7,001	5,171	719	1,311	7,201
25.	Space(f)	6,149	1,960	89	8,198	6,572	2,337	42	9,131	7,657	3,329	126	11,112
26.	Steel & Mines	9,013	1,706	407	11,126	8,902	1,753	1,022	11,677	10,430	2,592	292	13,314
27.	Supply & Rehabi.(g)	14,558	1,175	1,112	16,845	14,095	1,211	907	16,213	6,029	857	63	6,949
28.	Tourism & Civil Aviation	14,269	1,802	71	16,142	14,245	1,873	99	16,217	15,928	2,172	151	18,251
29.	Works, Housing	35,252	2,978	18,029	56,259	36,382	2,951	16,867	56,200	40,993	3,248	20,338	64,579
30.	Other Departments	4,774	1,119	50	5,943	22,182	2,028	4,337	28,547	28,154	3,560	3,383	35,097
	TOTAL	30,26,884	74,496	291,446	33,92,826	30,92,517	78,769	306,009	34,77,295	34,42,305	99,244	385,875	39,27,424

Note: Data for 1979-82 not available, (a) For 1978 includes Commerce, Civil Supplies and Cooperation; (b) For 1983 Education & Culture (c) For 1978, 1983 includes Health and Family Welfare; (d) For 1983 Labour and Rehabilitation; (e) For 1978 includes Petroleum, Chemicals and Fertilizers; (f) For 1978, 1983 includes Science and Technology; R For 1977 Civil Supplies and Cooperatives; (g) For 1983 Only Supply;

$ Work Charged Personnel, Staff Paid from Contingencies and Locally Recruited in Offices Abroad;

Source: As in Statement I.

UNITARY ELEMENTS IN A FEDERAL CONSTITUTION*

V.M. Dandekar

The Indian constitution is in the words of Ambedkar, ‘both unitary as well as federal according to the requirements of time and circumstances’. The unitary bias became gradually clear in the legislative provisions about the state and the concurrent lists. The creation of the Planning Commission and its control over and direction of funds for the state plan exacerbated these tendencies further. Whatever their justifications at the time the constitution was framed, they appear to have Lost their relevance now. The plan models have been used to enforce discipline on the states as well as the Centre. This hegemony of model builders and sophisticated statisticians is not confined to the Planning Commission, but also appears in the reports of the Finance Commissions, as illustrated by the poverty exercise in the report of the Seventh Finance Commission and the normative approach in the report of the Ninth Finance Commission. It is necessary to be aware of the pitfalls and dangers of such exercises and rethink the basic approach.

The Indian constitution does not explicitly use the term ’federation’. Instead, Article 1 declares that India that is Bharat shall be a Union of states. B. R. Ambedkar explained that in this, the drafting committee had merely followed the usage in the preamble to the British North America Act, 1867. Of course, that does not make India a unitary state. The basic difference between a unitary system and a federal system is that, while in the former the demarcation of powers between the national and the sub-national governments is made by the national government, in the latter this demarcation is made by a written constitution which is the source of authority of the national and the sub-national governments both. This is true of the Indian constitution. In its Seventh Schedule, the constitution lays down in great detail, in three lists, namely, the union list, the state list, and the concurrent list, the distribution of legislative powers between the union and the states. Moreover, it recognises that the division of the legislative powers must be supported by a division of financial powers and demarcates the spheres of taxation into three lists. a union list and a state list, to be exploited independently and exclusively by the union and states.

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* Late Professor V.M. Dandekar was engaged in editing and to a certain extent updating his writings for publication when he died at the end of July 1995. A large part of his writings, thus completed, have been published in two volumes by Sage Publications. New Delhi. He had nearly completed only threechapters of the third and final volume when hc died. This is one of these three chapters. It is being published here partly because of the current relevance of the issues discused in it. - Editor.

Further, anticipating that the revenues of the states from taxes in the state list may fall short of the states' expenditure on functions assigned to them, the constitution provides a comprehensive arrangement for sharing between the union and the states the revenues from some of the taxes in the union list. For this purpose, it requires that an independent Finance Commission shall be appointed at the end of every fifth year or earlier if the president considers it necessary. Over the years, the transfer of revenue resources from the union to the states under the recommendations of the successive Finance Commissions has increased.

But the Constitution did not anticipate that the country would soon adopt the strategy of planned development and did not provide for the appointment of a Planning Commission with well defined powers and functions. The Planning Commissions subsequently appointed are not statutory bodies as are the Finance Commissions and, not being creation of the constitution, they do not suffer any constitutional limitations on their powers. They are appointed by the Union government and essentially are organs of that government. A Planning Commission by the nature of its functions and objectives is inherently unitary and not federal in its intentions and unitary and not federal in its intentions and operations and successive Planning Commissions, in the name of real or supposed needs of planned development, have tended to expand and extend the authority of the Union government often in total disregard of the federal intentions of the Constitution. The late C. N. Annadurai, then the chief minister of Tamil Nadu had sensed this. While presenting the budget to the state legislature on June 17, 1967 he said, 'There has been considerable change in the matrix of Centre-State financial relations since the provisions of the Constitution in this regard were settled. There have been a number of new trends and developments which could not have been visualised when the Indian constitution was framed. The Constitution had already provided for considerable concentration of powers in the hands of the Central government. Through a new institution which was beyond the ken of the architects of the constitution: the Centre has acquired still larger powers causing concern about the position of the states. This new development relates to economic planning. The powers which the central government has assumed in regard to mobilisation, allocation, and pattern of utilisation of resources for the plan have reduced the states to the status of supplicants for aid from the Centre' [*Madras Legislative Assembly Debate*, 1967, p. 138]. The protest has gone unheeded for over 28 years but it may not be possible any longer to do so and the states will have to be given an appropriate place in the process of planning.

Unitary Bias of the Constitution

It must be admitted that such unitary tendencies have been facilitated by a certain underlying theme of subordination of the states which runs right through the Constitution. For instance, after distributing the legislative powers in three lists, the union list, the state list, and the concurrent list, residual subjects, that is those not covered by the three lists, are unavoidably left with the Union. Even in matters in the concurrent list, the Constitution provides that the union government shall prevail. Commercial and industrial policy, production, supply and distribution of foodstuffs, price control, trade unions, industrial and-labour disputes, employment and unemployment and above all economic and social planning are placed in the concurrent list and the Union has the final say in all these matters.

The state list is impressive: agriculture, irrigation, industries, labour, trade and commerce, production, distribution and supply of goods, education and public health all appear in the state list. But, in almost each case, there are provisos and exceptions. For instance, industries are in the state list but they are subject to the provisions of entry 52 of the Union list, namely, 'industries the control of which by the Union is declared by Parliament by law to be expedient in public interest'. Besides, Article 249 empowers the parliament to make laws with respect to any matter in the state list, if the Council of States (Rajya Sabha) declares by a resolution, supported by at least two-thirds of the members present and voting, that it is necessary or expedient in the national interest. Thus, in spite of its written character, the Constitution has imparted a great deal of flexibility to the division of powers between the Union and the states with a bias generally in favour of the Union enabling it to expand and extend its authority as and when it felt necessary. Perceptively, Ambedkar had said that 'the Indian constitution was both unitary as well as federal according to the requirements of time and circumstances' [*Constituent Assembly Debates*, VII, I, Pp. 33-34].

The historical circumstances in which the country became independent and accepted the strategy of planned economic development have also helped to emphasise the unitary rather than the federal elements in the constitution. Independent India inherited war-shattered and food-short economy and wartime food and price controls stressed the need for central action. Foreign exchange and import control, distribution of scarce commodities such as coal, steel, and cement, and regulation of inter-state trade and commerce necessary for price control could all be entrusted only to the Union government. There prevailed and exists even today wide popular support for the concept of planned development so that not just the Planning Commission but also the National Development Council and even the states have all along supported enthusiastically an ambitious plan. Planned development requires licensing of industries to conserve capital resources, to prevent their diversion into wasteful channels, and to ensure industrial dispersal into all regions; only the Union government could administer the requisite licensing system. Socialist emphasis on the public sector increased immensely the powers of the union. Though the public sector was not confined to the Union, the bigger industrial corporations and even more so the financial institutions such as the Life Insurance Corporation, the commercial and the development banks, all came to be owned and controlled by the Union government. The concept that a certain minimum needs of the people must he satisfied all over the country gave the Union government a mandate to lay down national targets, including those in the slate sector such as irrigation, roads, foodgrains production, education, public health, etc., and to freely exercise Union authority to achieve them. Occasional voicing of concern for the states' autonomy within the federal constitution was branded as parochial.

The Planning Commission

The Planning Commission was set up in March 1950 by a Resolution of the Government of India and has now grown into a large body with the Prime Minister as the Chairman, the Deputy Chairman, several full-time members and the Ministers of Human Resource Development of Finance, and of Agriculture as ex-officio members. Besides, there is a Minister of State for Planning. The day to day work of the Commission is looked after by the Deputy Chairman. The Commission has a collective responsibility but, for convenience, each member has charge of a group of subjects. In short, it is a parallel mini cabinet under the Prime Minister. It has a large secretariat consisting of a number of divisions (presently as many as 30 in number) which may be classified into four types: (i) general divisions concerned with certain aspects of the entire economy, (ii) subject divisions concerned with specific subjects. (iii) service divisions concerned with administration, accounts, and general services, and (iv) area divisions, called the State Plan Divisions, where state plans are formulated and monitored. By end of March 1993, it had a total staff strength of 5,315. It is one of the very few government agencies which carry a large research staff, consisting of experts from all fields of development. Nevertheless, Dr. Gupta mentions, the composition of the staff is Somewhat weighted towards civil servants and bureaucrats, and much of its work, in effect, is a duplication of the jobs of different ministries [Gupta, 1989, p. 71]. If so, it is advisable to avoid this duplication.

The setting up of the Planning Commission to look after plan finance and recommend plan assistance for the states necessitated a demarcation between non-plan and plan expenditure and it became customary to limit the terms of reference of the Finance Commissions to non-plan expenditure only. To see the effect of this change, we should note that the purpose of the grants which the Finance Commission gives under Article 275 is to cover the non-plan revenue deficits after the distribution of the states' shareable pool. Since the non-plan surplus is regarded as an item of plan resources, the Finance Commission's tax-sharing also comes indirectly within the purview of the Planning Commission. The Finance Commission strives to leave as many states as possible with a surplus in their non-plan revenue accounts hoping that the states may then be free to use this surplus to finance planned development of their own conception. But the states have no freedom to use their non-plan revenue surpluses any more than they have to use the plan assistance from the Union. The two are put together along with any additional financial resources a state may be expected to raise and the expenditure of it all is subject to an overall, plan approved by the Planning Commission. That is it. A state may have a non-plan surplus. It may be willing to raise additional resources. It will accept plan assistance of which a larger part is in the form of loans which must be repaid. But it has no freedom, no autonomy in deciding the pattern of its development. Such are the compulsions of a national plan.

Moreover, a large part of the states' plans is in the form of central, and centrally sponsored schemes. The result is that the ministries and departments of the Union government, with their enthusiasm and capacity to get more funds from their government, and the corresponding departments of the state governments, with equal enthusiasm but less ability to get funds from their governments, have in: collusion managed to unduly increase the number of such schemes. The issue was examined in the Fourth Plan and out of about 125 such schemes 36 were transferred to the states. The Study Team on Financial Administration [Report, 1967, Vol. I, Pp. 86-87] of the Administrative Reforms

Commission felt that many more could be so transferred. In 1969, the National Development Council laid down guidelines for such schemes and put a ceiling of one-seventh to one-sixth, say about 15 per cent, of the total block plan assistance to the states. But all this was ignored. The central and centrally sponsored schemes continue to dominate the plan assistance to the states. In 1992-93, according to revised budget estimates the central and centrally sponsored schemes accounted for 30.95 per cent of the total plan assistance to the states amounting to Rs 22,589.12 crore. If we confine attention to plan grants only, the central and centrally sponsored schemes accounted for 45.02 per cent of the total plan grants amounting to Rs 15,155.73 crore. According to the budget estimates for 1993-94, the central and centrally sponsored schemes accounted for 35.49 per cent in total plan assistance and 48.91 per cent in plan grants.

One wonders how the Planning Commission handles this awesome burden. To appreciate how it functions, it will be useful to recapitulate, even if briefly, the planning process and how it moves through the labyrinth of the Planning Commission. The following account is taken from *Planning and Development in India* (in particular, its chapter 2) by S.P. Gupta, who himself was the Advisor and Head of the Perspective Planning Division of the Planning Commission during the Sixth and Seventh Plan formulations. Of course, the material is suitably abridged and edited, hopefully, without distortion.

Planning Process

The first step in Plan making is to prepare an 'Approach Paper' on the basis of estimates of likely long-term changes in the major parameters of growth as well as during the five-year plan period. These are based on the experience of the past, projected requirements in future and likely availability of resources for the next plan worked out by various working groups consisting of officials in the Planning Commission. Central ministries, other institutions, State governments, and experts in the field. As many as 126 working groups were set up in connection with the Seventh Plan.

While initiating work on the 'Approach' at the national level, state governments are also advised to take preliminary steps for formulating their 'Approach' and set up working groups wherever considered necessary. After the Approach Paper is approved by the National Development Council, the Planning Commission addresses the Central ministries and State governments to formulate detailed proposals of their plans. When the States submit their plan proposals, these are discussed in different working groups.

In the case of Central plan, the concerned division prepares a Status Paper taking into account the recommendations of the concerned working groups, proposals of the relevant ministries, and its own assessment. The Status Paper constitutes the basis of discussion between the Planning Commission and the Secretary of the concerned Central ministry/department. In the light of the discussions with the ministries and the anticipated total resources for the Central plan, the Commission takes a view on the development programme of each ministry/department.

The recommendations of all the working groups on the proposals of a state are considered by the concerned State Plan Adviser. This report forms the basis of discussions between the Planning Commission and the State governments for finalising the plan for each Stale and its targets of additional resources mobilisation.

The Project Appraisal Division makes an appraisal of Central Government projects costing more than Rs 2 crore before they are considered by the Public Investment Board or the Expenditure Finance Committee (EEC). In appraising a project, the Division examines the need for the project, its linkages with the plan, technical and organisational aspects as well as the economic and financial viability of the project. The Division also appraises revised cost estimates of major Central projects when these exceed 20 per cent of the sanctioned cost.

The projects, forwarded for appraisal, are broadly divided into three categories: (i) industrial and non-basic sectors; (ii) infrastructure projects; and (iii) social projects. The appraisal approach differs among them.

For the public sector projects covering non-basic sectors, like watches, drugs, certain chemicals, etc., the criteria for accepting or rejecting a project is mainly based on an assumed economic rate of return of 12 per cent per annum; and whether their production is within the targeted demand for the product. The anticipated output is valued at c.i.f. prices to determine the ‘make it or buy it’ decision.

For the infrastructure projects, the proposed investment project is recommended if it is found to be the least cost option available to meet the targeted demand. In practice, however, lever the alternatives are hardly available for appraisal. These projects are not constrained in their selection by the economic rates of return criteria of 12 per cent per annum but on the basis of social rates of return which are difficult to estimate both on conceptual and data considerations. Hence, in effect, they are mostly calculated in qualitative terms. The social projects aim mainly to benefit the poorest of the poor and reduce income disparity. The appraisal report in these cases makes an attempt to investigate their benefits in qualitative terms.

The weakest element in the present practice of appraisal of projects is that usually one project is submitted at a time for appraisal and selection, so that it is not possible to make a choice from alternative projects. This creates a special problem in the core sector. The rejection of a proposed project often becomes impossible since it might mean a shortage in the infrastructure facilities stipulated in the plan and preparation of another proposal from the Secretariat takes time. Moreover, quite often, the proposed location of many projects cannot be changed because it is decided mainly on political grounds. Often, the initial project reports are so bad and based on such scanty data that, while passing through the various bureaucratic stages of approval, they have to be reported back time and again causing delay in approval [Gupta, 1989, p. 731.

The identification and presentation of the projects, are the prerogatives of implementing ministries and public sector undertakings. The appraisal is done mainly by the Planning Commission and emerges as recommendations. However, the final approval, comes from the Public Investment Board (PIB). The PIB is the committee of secretaries entrusted with the investment decisions of public sector projects involving an investment outlay of above Rs 5 crore. Investments worth Rs. 1 to 5 crore go to the EFC. The cabinet generally accepts the recommendations and implementations as per approved project.

The states, as also the several working groups, prepare their plans within broad benchmarks supplied by the Planning Commission which are mostly in broad aggregates and usually at very general levels so that they can be differently interpreted by various working groups. As a result, the working groups often prepare their reports on the basis of mutually inconsistent assumptions. Moreover, the working groups' reports usually come so late that many of their views cannot get incorporated into the plan [Gupta, 1989, p. 72].

At this stage, the working groups, both in the Centre and the states, make their recommendations primarily on the basis of needs and feasibility of programmes and projects. since they do not have a clear idea of the resources likely to he available, for development programmes in their respective areas. The total of the outlays recommended by them, therefore, often turn out to be far in excess of what can be accommodated within the total estimated resources. As a result, it becomes necessary to prune the recommendations of the working groups in the process of finalising the Central and State plans.

The estimates of resources of the Centre for the plan are prepared by the Working Group on Financial Resources, which includes, *inter alia*, the representatives of the Planning Commission, the Ministry of Finance, and the Reserve Bank of India. At the same time, the Financial Resources Division of the Planning Commission requests the state governments to furnish estimates of their resources for the plan. Detailed discussions, are held with each state government to prepare mutually agreed Upon estimates of resources. The five-year plan, after incorporating the Central and state plans, together with their financing schemes,. as finally approved by the Planning Commission, is considered by the Union Cabinet. After its approval, the plan is placed before the National Development Council and after the Council approves, it is placed before the to Houses of Parliament.

The procedures for the formulation of annual plans is broadly the same as that adopted for the five-year plan However in the case of the Centre there is a slight variation. First, the estimates of Central resources are called for from the Ministry of Finance and finalised in consultation with them since there is no Resources Working Group on central resources for the annual plan. Secondly discussions with Central Ministries are held on the plan proposals sent as drafts by them. All meetings for this purpose are convened by the Secretary, Planning Commission, with the secretary of the concerned ministry/department. Further, since the annual plan is formulated within the framework of a five-year plan, the discussions with outside organisations and experts are on a limited scale.

The annual plan exercises have been increasingly confined almost exclusively to resource-availability, and the adjustments in investment allocations between sectors are being done mostly on a *pro rata* basis which has no scientific base: rather it comes, out as a ‘compromise’ formula between the contending recipients [Gupta. 1989. p. 72]. Worse still, physical targets are often not revised alongside. The mid-term appraisal comes some time in the third year of the plan. A correction to 'plan priorities' presented in this appraisal document has sometimes proved to be very academic as it comes too late in the plan period. In any case, most of the public sector enterprises attach very little importance to post-evaluation studies.

State Plans

Let us next see the manner in which, the Planning Commission, in trying to impose a national plan on the state governments, is straining the federal structure envisaged in the Constitution. As mentioned above, the recommendations of all the working groups on the proposals of a state are considered by the concerned State Plan Adviser and his report forms the basis of discussions between the Planning Commission and the state governments for finalising the plan for each state and its targets of additional resources mobilisation. It is simply preposterous that a single officer in the Planning Commission should sit in judgement on the plan proposals coming from the government of a state. It is surprising how this has been swallowed for four decades. The reasons are historical. They may no longer be valid.

Prior to the Fourth Plan, plan assistance was based on states' needs and ability to implement the plan as judged by the Planning Commission. Moreover, it was mainly schematic in nature and came in the form of a string of conditional grants. Beginning with the Fourth Plan, the Gadgil formula and later its subsequent modifications did not change the situation materially because the whole plan assistance depended on the approval by the Planning Commission of the state's plan as a whole. The assistance would be reduced in proportion to the shortage in the agreed plan outlay. On some items, the assistance was tied so that a shortfall in expenditure on these items would invite a cut in earmarked assistance. Besides, there was a detailed technical appraisal of all irrigation, power, and agricultural schemes costing more than Rs 5 crore and a proforma examination of all schemes costing Rs 1 to 5 crore by the Central Water Commission, the Central Electricity Authority, and the Indian Council of Agricultural Research.

The states in India have widely different resources and are at widely different stages of development as measured by their per capita incomes. For instance, in 1989-90, the per capita net domestic product was Rs. 2,122 in Bihar and Rs 7,081 in Punjab [CSO, 1991, Statement 5]. The gap is widening. The Planning Commission prepares a national plan with sectoral allocations broken up into central plan and states' plans. The states fall in line because the centre holds the financial strings. But it is unlikely that the plans for different states are the most appropriate for their resources and the stages of their development. This is no reflection on the competence of the Planning Commission. The country is just too big and varied and no one need be offended by that fact. After forty years of planning experience, one should now adopt a more modest posture and allow the states greater freedom and autonomy in the planning of their development.

Clearly, there are sectors of which the development must he largely with the Centre, as for instance, large industry, rail and air transport, communications, and science and technology. Besides, as we suggest, reduction of disparities between states must also be the Centre's responsibility. But, there are sectors the development of which must largely rest with the states keeping the Centre's role to the minimal. These are agriculture, rural development, special area programmes, village and small industries, and many of the social services such as education and health. These sectors are essentially decentralised and the process of their development has to he decentralised. Nevertheless, in the Eighth Five- Year Plan (1992-97), the Centre's share in the public sector outlay in agriculture is 23.38 per cent; in rural development 70.33 per cent; in village and small industry 39.96 per cent; in general education 42.86 per cent; in medical and public health 29.94 percent; and in family welfare 100.00 pet cent. If the ground for this is a presumption that the centre has greater competence even in these areas, it is simply not true any more if it ever was.

From the very beginning of planning in India, a distinction has been made between the public and the private sector. The plan targets are prescriptive for the public sector, the Planning Commission acting as a clearing house for many crucial economic decisions taken at different institutional and regional levels, for ensuring inter-sectoral and inter-temporal consistencies by the use of a formal 'economic model'. For the private sector, the plan targets are only indicative. Hence, the governments in India have little control over a large part of the economy. Even in the matter of investment, of the total estimated investment during the Seventh Five-Year Plan period (1985-90) amounting to Rs 3,48,148 crore, investment worth only Rs 1,80,000 crore, which is 51.70 per cent of the total, was planned to be made in the public sector. The remaining was expected to occur in the private corporate and household sector. The investment in these sectors is, in general, in response to market expectations rather than the expectations of the Planning Commission. Even in the public sector, the plan succeeds at best in respect of investment but not so much in respect of output. There is, besides, the variable weather which affects agriculture producing one-third of the national product. Under the circumstance, what the Planning Commission can at best do is to promptly respond, to what actually happens in the economy and annually revise and adjust its own sectoral plan allocations so as to regain and retain the sectoral balance in the economy. Presumably, this is what the Planning Commission does in its annual plan exercises. We have already commented upon the nature of this sectoral inter-consistency and, particularly, the manner in which it gets distorted in the annual plans.

Unhealthy Paternalism

What is involved is not the technicality of planning but the central attitude towards governance of India. In a paper presented to the National Convention on Union-State Relations held in New Delhi in April 1970, K. Santhanam made the point succinctly: 'I am emphatically of the opinion that by taking upon itself too many obligations in relation to the vast population spread over the length and breadth of India, the Centre will become incurably weak. It is only through concentration on essential all India matters and by refusing to share the responsibility in such matters with the states while giving complete autonomy to the states in the rest of the field of government, the parliament and the central government can be really strong. The tendency towards vague unhealthy paternalism which has come to envelop Indian Federalism as a result of the dominance of a single party during the first two decades of independence is as bad for the centre as it is unpleasant and provocative to the states' [Santhanam, 1972, Pp. 75-76]. Unfortunately, the tendency has continued unabated.

At the time the constitution was made, there was probably sufficient justification for including all the subjects that are included in these lists. Probably, there were not enough men with ability and experience in the states to handle some of these subjects. In the initial years, there was also a need to establish common norms, standards, and procedures. The functions were also limited in their overall scope and size. Over the years, these functions have grown enormously. Fortunately, common norms, standards, and procedures are now well established to permit some departure and variation. Above all, there are now in the States, men with equal knowledge, ability, and experience to handle many of these subjects. The continuance of central jurisdiction over these subjects now results only in rigidity, delay and waste on the one hand and neglect and humiliation of able men in the states on the other. Agriculture, rural development, health, and family welfare are a case in point. Practically the entire establishments in these subjects at the centre could be dismantled with little harm.

The tendency towards vague unhealthy paternalism to which K. Santhanam refers pre vails not only in the Union-States relations but also within the borders of large states. If the Union is burdened with too much power and authority, some of the states are burdened with too large a population and territory. Broadly speaking, the present non-Hindi states are organised on linguistic lines no matter how large. The Hindi states are mostly a legacy of the past. In consequence, some states are just too big for a chief minister to manage, howsoever competent he might be. A state with about 10 districts and a population of between 10 and 20 million is a good size to govern. The size of the state cabinets could and should be regulated by the constitution. Such smaller states will be managed better than the present large ones. The chief ministers will have fewer problems of balancing regional interests. Most importantly, central assistance will reach the more deserving and needy regions more directly. A second state's reorganisation commission should be appointed to look into the details.

There is much room and need for devolution of the power of the states to the panchayati raj institutions at the district level to begin with. These institutions have generally failed because genuine devolution of power has not been tried. Unfortunately, there is much resistance both from the political leadership and the bureaucracy in the states to any attempt at devolution of power and authority. This has frustrated the will, initiative, and self-reliance among the local people and the old habit of looking at the state capital and Delhi for every little local problem continues. The situation is the same as it prevails in the Centre-State relations.

There are semi-governmental authorities such as the university grants commission which need similar scrutiny. The commission has been presided over generally by able chairpersons. But the task is simply too big. One wonders how the commission oversees the functioning of a couple of hundred universities in the country and why one single body must do it. Below the commission, there are the universities managing several hundred colleges each. In the name of maintaining uniform standards, we have erected an enormously centralised apparatus for higher education. It grinds slowly and turns out, year after year, product of nondescript character in large numbers.

There are the Public Sector Corporations such as the Life Insurance Corporation which again have grown too big. Except for the vested interests of the present incumbents, which include the management and the union leadership both, there is no good reason for keeping them in one unit. There are the nationalised banks extending themselves across the country in the name of offering competitive service involving so much waste. It may be desirable to reorganise them on a regional basis. These are only illustrations of the centralising tendencies which pervade the Indian polity. It is obvious that each case will have to be examined on merits. In each case, the question to ask is: Must it remain centralised as at present or can some of its functions, powers, and authority be decentralised?

Let us remember that the country is large and diverse but that there is also enough political, administrative, and technical talent around. What is needed is an opportunity for greater participation of larger numbers in its affairs. Denial of such opportunity is breeding widespread, frustration and resentment causing so much waste of precious human material. That makes the country not stronger but weaker.

HEGEMONY OF THE MODEL BUILDERS AND SOPHISTICATED STATISTICIANS

The Planning Commission embodies the central attitude towards governance of India. Besides, the Planning Commission itself is dominated by model builders who have tried to put the whole plan in a strait-jacket. As mentioned above, underlying the planning in the public sector is a formal 'economic model' which is expected to ensure inter-sectoral and inter-temporal consistencies. For those not familiar with the mathematics of modelling and the statistical or factual foundations of these models, planning models are a great mystery and that is their strength. Like most economic models, the planning models are also abstractions of reality. They try to capture the objectives and efforts needed in planned development. Their usefulness lies in helping to understand the complex economic linkage in alternative policy decisions and to help planners devise ways and means to lead the economy in the desired direction. However, it is well appreciated that there are many behavioural relations and institutional factors which are difficult to capture in a rigorous formal model frame, although they may be very important to the country's development. Therefore, any *result based on formal modelling should be used with necessary caution. But a total absence of any formal model structure, may, result in inconsistencies and lopsided priorities in allocating resources. Indeed, formalised modelling is found to be an effective disciplining device in the exercise of choice of policy makers and users [Gupta, 1989, p. 6]. Indeed, that is its purpose; the plan model is the device which the Planning Commission has used to enforce 'discipline' on the central and state governments, their ministries, departments, and undertakings. A brief description of the model used in the Seventh Plan may be useful.*

ECONOMIC MODELS

Planning in India began with the First Five Year Plan (1951-56). The planning models in the First and Second Plans were focussed mainly on the growth potential determined by the savings potential of the economy and incremental capital/output ratio. They belonged to the Harrod-Domar and Feldman-Mahalanobis family comprising a single sector with no foreign trade. Hence, their demand and supply equations were the same. Since the Third Plan and until the end of the Fifth Plan, the input-output models basically belonging to the Leontief group were used in order to ensure inter-sectoral consistencies between the production targets. The production targets were mainly estimated from the demand side without taking into account the supply constraints except indirectly, for a few specific sectors, by the use of material balances. During the Fourth and the Fifth Plans the Input-output models were articulated by making them 'closed' first by endogenizing imports and then consumption in the final demand. The Sixth Plan tried to integrate the Harrod-Domar and the input-output approaches in a demand-supply frame. An investment planning model developed and integrated with the input-output system and the demand-supply balances were checked over time, not only in the commodity and services market but also in the markets dealing with primary inputs like labour and capital and other important non-renewable resources [Planning Commission, 1980. p. 1].

In the Seventh Plan, the basic model remained the same as in the Sixth Plan. It comprised a 'core model' consisting of (i) a macroeconomic model. (ii) an input-output model (iii) an investment model and seven major 'sub-models', namely, agriculture, industry, consumption, poverty, export and import, financial resources, and demography and employment. The core model and all the sub-models have two distinctive parts (i) the model structure is presented in the form of a system of equations which involve a number of parameters and which postulate certain inter relationships between all major variables, like consumption, investment, export, import, and different policy instruments of the Government; and (ii) appropriate estimation procedures to estimate the various parameters either based on observed behaviour or technology.

To begin with, estimates are made of the requirements of the economy (demand) in the light of certain basic objectives of growth, equity and self-reliance as recommended by the National Development Council (NDC). This is done in the 'core model'. The demand is decomposed into four main groups (i) consumption, both public and private, (ii) investment again separated into public and private, (iii) exports, and (iv) inter mediate goods.

The macro economic model consists of a number of national income and expenditure identities and this, in combination with input-output model, determines investment in the terminal year endogenously. Given a target rate of growth and base year GDP, saving and consumption decisions of public and private sectors and certain other exogenous variables, macro-economic model determines resources available for investment. A crucial link between the macro-economic model and the input-output model is provided by the value of total imports. Iterative process between macro-economic model and input-output model ends when the value of investable resources in the terminal year converge to the same value in successive runs.

Investment model is then started. Investment model derives investment requirements at broad aggregate sector levels and converts investment by destination into that by origin. In case of a mismatch between available resources and required resources for investment, the latter is adjusted by moderating on the post-terminal rates of growth. At the end of a run of investment model, investment by type of assets (construction, machinery and equipment, and changes in stock) is obtained and this in turn is fed into the input-output model for a re-run. Iterative process for the core model concludes when investment level and its asset composition remains the same in successive iterations.

Sub-models are constructed to go into details of certain phenomena that are complementary to the core input-output model. Some of these sub-models are percussive to the main model, like demographic projections and assumptions of saving behaviour of different institutions in the economy. Certain other sub-models are recursive like the employment. By its very specification, the core model excludes certain variables like land and water, aggregates certain commodity production activities like in petrolatum sectors; assumes some variables as given exogenously, for example export vector. Sub-models are constructed to pay attention which is technically necessary but which is not at present integrated in the main input-output model.

The model system runs on the basis of a set of lagged endogenous variables, a set of relevant parameters and selected exogenous variables including the policy variables. The-basic set of parameters in the core models are the input-output coefficient matrix and the capital output ratios. Besides, there are other parameters relating to different sub-models. They refer mainly to consumption propensities/ expenditure elasticities, all demography related parameters, functions relating to costs and use of natural resources, transport coefficients, etc. The basic parameters of the input-output (I/O) table are based on 1973-74 I/O table of 115 sectors prepared by the Central Statistical Organisation (CSO) duly updated and revised. Import use coefficients are estimated by using information obtained from the CSO regarding destination and imports and allocations in proportion to total input use flows among identified destination sectors. Capital Coefficient Matrix and ICORs (incremental capital output ratios) are based on econometric estimation of the past data on capital output ratios worked out by the Working Group constituted for the purpose. [Planning Commission, 1985, Chapter I, p. 1.5, duly edited and abridged].

This is an imposing mathematical structure and its purpose is to ensure inter-sectoral consistency between production targets set by the plan. Without wanting to derogate, the pursuit of the mathematical model builders to represent the economy as a mathematical system, consisting of a large number of inter-related equations, we should note the following: (i) Inevitably, it is a highly aggregated model. The I/O table, for 1973-74 originally prepared by the CSO conceived the economy as having 115 sectors, that is, 115 groups of commodities and services. Later, this was aggregated into only 60 sectors. The CSO has updated this table and published a 60-sector I/O table for 1978-79 and also for 1983-84. Presumably, for purposes of the Seventh Plan, the Planning Commission has, used the last mentioned table but has further aggregated it into only 50 groups. For instance, one of the 50 sectors consists of sugarcane (including gur), groundnut, rubber, coconut, tobacco, and crops other than paddy (including rice, milling), wheat (including flour milling), jawar, bajra, maize, gram, pulses (milled and unmilled), jute, cotton, tea, and coffee. Another sector consists of edible oils (hydrogenated or otherwise), tea and coffee processing, miscellaneous food products, beverages, and tobacco products. One more sector consists of heavy chemicals (organic and inorganic), paints, varnishes, and lacquers, drugs and medicines, soaps, cosmetics, glycerine, and other chemicals (excluding synthetic fibres and resins). Yet another sector consists of tractors and other agricultural implements, industrial machinery, machine tools, office computing and accounting machinery and other non-electrical machinery. With such aggregated sectors, I/O coefficients have little meaning and inter-sectoral consistency allows more of wheat compensated by less of tea; or more of hydrogenated oil compensated by less of processed tea; or more of tractors compensated by fewer machine tools.

Moreover, the data base of the Indian economy is probably adequate for estimating the Gross Domestic Product but quite unsatisfactory for estimating I/O coefficients, capital coefficient or incremental capital/output ratios. Further, many parameters of the mathematical models are pure guesswork or political pronouncements called policy variables. Finally, with no more than indicative planning for the private sector, one must ask what is the meaning of inter-sectoral consistency which the plan model is supposed to ensure

Such hegemony of the Model Builders and Sophisticated Statisticians is not confined to the Planning Commissions. It appears even in the Reports of the Finance Commissions. This is due to some of the academic members and consultants, who through their statistical sophistication, bamboozle the members of the Finance Commissions into, accepting their formula to determine the shares of the states in the divisible pool. For instance, as mentioned in the previous chapter, in determining the states' shares in the divisible pool of the excise, the Seventh Finance Commission had used, as one of the four factors, the percentage of the poor in each state measured by a method which Prof Raj Krishna had evolved for the Commission. There was an elementary error in this method. The then Director of Economics and Statistics of the Government of Maharashtra brought this to my notice and suggested that I should write on the subject. In the following is the text of my paper published in the Economic and Political Weekly [February, 1979]. Needless to say, no disrespect is intended to the late Prof Raj Krishna, who was a close friend of mine and for whom I had great respect and affection. Fortunately, he was still alive when the paper was published.

BELOW THE POVERTY LINE

In order to determine the shares of the states in the divisible pool of excise, the Seventh Finance Commission (1978) decided to give equal weight to (a) population, (b) inverse of the per capita State Domestic Product, (c) percentage of the poor, and (d) a formula of revenue equalisation. Direct cognizance of the poor is a particular innovation of the present Finance Commission. Reportedly, the Planning Commission also intends to incorporate it in its formula for distribution of block plan, assistance to states. Thus the estimates of the number of poor which have received so much academic attention since 1970, have suddenly become alive and operational. It is important therefore to examine a little carefully how the Finance Commission estimated the number of poor in different states. In this matter, the Finance Commission was advised by one of its members, Raj Krishna, who is also a member of the Planning Commission. The method evolved by him is given in Appendix IV. 9 of the Debate of the *Seventh Finance Commission's Report* [Pp. 209-221].

Partly because of differences in consumer behaviour and partly because of differences in the prices of essential consumer goods and services in different states, the poverty line, however defined, differs in different states. Hence, the starting point of the exercise is the determination of the state-specific poverty lines. Raj Krishna chooses to determine them for the year 1960-61 and then bring them up for 1970-71. Here, we shall primarily concern ourselves with the procedures by which Raj Krishna determines the state-specific poverty lines for 1960-61. Raj Krishna does this in two steps: (a) choosing an all-India poverty line; and (b) converting the all-India poverty line into state-specific poverty lines for different states. For (a) Raj Krishna adopts the Dandekar-Rath all-India norm of Rs 15 per capita per month for the rural areas and Rs 22.5 per capita per month for the urban areas at 1960-61 prices. We might note that Dandekar-Rath arrived at their national norms on an analysis of the Consumer expenditure data from the 16th Round of the National Sample Survey (July 1960- August 1961) showing that it was at the per capita monthly consumer expenditure of about Rs 15 in rural areas and Rs 22.5 in urban areas that households, on an average, seemed to have a diet adequate in calories, namely, 2,250 calories per capita per day. On the basis of similar data from the 17th Round of the National Sample Survey (September 1961-July 1962) they had also indicated that corresponding levels of per capita monthly consumer expenditure were different in different states [Dandekar-Rath, *Poverty in India*, Tables 1.5 and 1.6]. A little additional work on these results of Dandekar-Rath could have given Raj Krishna the state-specific rural and urban poverty lines for 1960-61 which he was seeking. He could have also applied similar methods to consumer expenditure data from the later rounds of the National Survey such as the 25th Round (1970-71), the 26th Round (1971-72), the 27th Round (1972-73), or the 28th Round (1973-74) and obtained directly the state-specific rural and urban poverty lines for these later years. But, for reasons which are not clear, Raj Krishna chose to adopt more round-about methods. He employed two different procedures, one for the rural areas and the other for the urban areas. We shall first examine his procedure for determining the state-specific rural poverty lines for the year 1960-61.

In order to convert the all-India rural norm of Rs 15 per capita per month at 1960-61 prices, Raj Krishna utilises the state index of rural consumer prices in 1960-61 prepared by Bardhan [Bardhan, 1974, Pp. 264-80] on the basis of a study by Chatterjee Bhattacharya [Chatterjee-Bhattacharya, *Sankhya*, 1974, Series C, Vol. 36, Pp. 275-279 and Pp. 337-367]. The latter is a study in inter-state variation in consumer prices. It is based on the 18th Round of the National Sample Survey (February 1963-January 1964) rural household consumer expenditure data. Chatterjee-Bhattacharya utilise these data both for (i) estimating the average prices of 56 consumption items in different states, and (ii) for obtaining the corresponding weighting diagrams, that is, the commodity composition of the consumer expenditure in different states, and then proceed to construct, for each state, a consumer price Fisher index with all-India prices taken as base = 100. A special feature of the Chatterjee Bhattacharya study is that they construct the index numbers for inter-state comparison of consumer prices not only for the entire rural population but for its quintiles, that is 20 per cent sections, when arranged in an ascending order of per capita consumer expenditure; thus the first quintile comprises the bottom 20 per cent rural population in each state. Bardhan in his ‘Study on Incidence of Poverty in Rural India’ [Bardhan, 1974] uses the Chatterjee-Bhattacharya indices for the two bottom quintiles that is the bottom 40 per cent of the rural population in each state. He averages the two index numbers for the two bottom quintiles as constructed by Chatterjee-Bhattacharya on the basis of the 18th Round of the NSS (February 1963-January 1964) and regards them as valid for 1960-61. Then, taking ‘Rs 15 at all-India rural prices and multiplying by the corresponding index for each state’ Bardhan gets ‘the cast in each state of the consumption basket represented by Rs 15 at 1960-61 all-India prices’. Bardhan raises them by the consumer price index numbers for agricultural labour (July 1960-June 1961 as base) for different states issued by the Labour Bureau.

Raj Krishna follows Bardhan. He borrows from Bardhan's study the 'costs of consumption basket represented by Rs. 15 at all-India rural consumer prices in different states in 1960-61', adopts them as the state-specific rural poverty lines at 1960-61 prices, and raises them by the consumer price index numbers of agricultural labour for different states in 1970-71 to obtain the state-specific poverty lines at 1970-71 prices. The Chatterjee-Bhattacharya study is a careful piece of work and the authors are aware of the limitations of the index for inter-state comparison of consumer prices. For instance, they observe: 'Inter-regional comparison such as those carried out here are of obvious interest, but there are well-known methodological problems which can hardly be overcome with satisfaction [Beckerman, 1966]. Thus, no attempt has been made in the present study to allow for variation in consumer preferences arising due to climatic and other environmental factors' [Chattarjee and Bhattacharya, 1974, para 1.4, p. 338]. Further: 'The first point to note....is the appreciable divergence between Laspeyres and Paasche indices in a large number of cases....the divergence tends to be wide when the budget pattern of the state considered is very different from the over-all pattern in rural India and fairly small when the state budget pattern is not so different from the pattern observed in rural India. Glaring instances of this effect are visible.. ..This is, of course, understandable. While we may quote the Fisher indices for measuring inter-regional price differentials, the measurement is far from precise when the two regions have markedly different household budget patterns' [Chattarjee and Bhattacharya, 1974, para 3.2 p. 343].

This indeed is the essence of the index number problem, namely the inherent difficulties of making a comparison between price differentials, whether temporal or spatial, when the consumer budget patterns are different. When index numbers are used for comparison over time, as is more commonly the case, the base period is periodically brought forward so that the difference between the consumption budget patterns in the base year and the 'current' year are not too large. This is not possible when the index numbers are used for inter-regional comparisons. It is neither possible to reduce the differences in the budget patterns of two regions, when they exist, nor is it possible to allow for them in the index number. It is best to recognise, as Chatterjee-Bhattacharya do, that the inter-regional comparison by index number is not satisfactory when there are large differences in the consumption budget patterns of two regions.

Bardhan does not show equal awareness of these problems. Indeed, he seems to believe that 'taking Rs 15 at all-India rural prices and multiplying by the corresponding index for each state' derived from Chatterjee-Bhattacharya study, he gets 'the cost in each state of the consumption basket represented by Rs 15 at 1960-61 all-India rural prices'. Strictly speaking, the, phrase 'the cost in each state of the consumption basket represented by Rs 15 at 1960-61 all-India rural prices' is not meaningful because 'Rs 15 at 1960-61 all-India rural prices can represent any number of consumption baskets many of them widely different in their commodity composition'. Presumably, what Bardhan means is 'consumption basket with a commodity composition as it obtained on an average in the 40 per cent bottom all-India rural population in 1963 (Feb 1963-Jan 1964) and valued at Rs 15 at 1960-61 all-India rural prices'. Thus interpreted, Bardhan is not quite right in his belief that what he has is the cost in each state of such a fixed consumption basket at 1960-61 rural prices. This would be true if hc were using Laspeyres index number. With Fisher index, the consumption basket is not fixed. It is some kind of an average of the consumption basket as it obtained at the all-India average and in the respective state. The basket of comparison is thus not the same for all the states. Of course, it should not be the same. In determining poverty lines in different states, it is necessary to make due allowance for the differences in the consumption baskets in the different states. The Fisher index and for that matter any index, cannot do this. In short, by resorting to this roundabout method of determining the state-specific poverty lines, while one may display a great deal of statistical sophistication, one does not know what one is in fact doing.

Chatterjee-Bhattacharya also make a reference to an earlier study by Rath (1973, Pp. 337-352) which employed broadly similar data and similar method as their own. They make the following comments: 'Rath employed NSS 17th Round (September 1961-August 1962) budget results including estimates of average price and per capita consumption (quantity) of 44 items for the rural areas of different states [Rath, 1973, *Arthavijnana*, Pp. 337-352]. Laspeyres and Paasche indices were computed for comparing the price levels for the general population in every pair of states. The indices with different states as base were then averaged to get an overall picture... There are striking differences between these results of Rath and those obtained in the present study, although the two studies utilised data from two consecutive rounds of the NSS' [Chatterjee and Bhattacharya, 1974, para 6.3, p. 366].

It seems that, in the judgment of Chatterjee-Bhattacharya, the following circumstance was responsible for the differences in the results of Rath and their own results. They say: 'A crucial step taken by Rath was the treatment of each of the following groups of commodities as single items: (i) cereals and products, (ii) pulses and products, (iii) vegetable oils and vanaspati, (iv) meat, fish and egg, and (v) tea and coffee. (The number of items representing these groups in our calculations are, respectively, 8.5,5,5, and 3). Rath took this step primarily because some of the constituent items did not feature at all in the family budget of a number of states, so that all the 44 prices were not available for every state. To our mind, this problem is not as serious as made out by Rath; and our method of substitution was not applied too frequently to overcome this problem. On the whole, Rath seems to have exaggerated the relative price levels in the rice and wheat-consuming states and understated the relative levels of average PCE (per capita consumer expenditure) in real terms in these states. His picture of regional variation in the 'poverty line' also seems to be exaggerated' [Chatterjee and Bhattacharya, 1974].

It is not the intention here to go into a detailed enquiry into the differences between the results of Rath and Chatterjee-Bhattacharya. The important point to note is that competent analysts, such as Chatterjee-Bhattacharya and Rath, working on comparable sets of data and with methods basically not dissimilar and, in any case, methods which *prima facie* appear reasonable and which can be justified on one or the other analytical ground, come out with results with strikingly large differences. Evidently, the method is susceptible to minor changes in the choice of commodities, their groupings or substitutions.

We might make one final comment. Having obtained the state-specific poverty lines at 1960-61 prices, in order to bring them up to 1970-71 prices, Raj Krishna, following Bardhan, raises them by the consumer price index of agricultural labour issued by the Labour Bureau. We might note that, though this index has 1960-61 as base, its weighting diagram is derived from the family budget data of the Second Agricultural Labour Enquiry (August 1956 - August 1957).

To sum up, in spite of the impressive statistical sophistication borrowed from Burdhan, the state-specific rural poverty lines derived by Raj Krishna are devoid of any clear meaning and moreover are susceptible to minor changes in the method so that one could produce quite different results by adopting methods which are only slightly different and are equally justifiable. One wonders why he adopted this procedure when, following Dandekar-Rath, he could have derived the state-specific poverty lines for 1970-71 or even for a later year such as 1972-73 or 1973-74 directly from the corresponding data from the National Sample Survey. But all this is excusable, or even permissible, when we compare it with the procedure Raj Krishna resorts to for determining the state specific urban poverty lines. Chatterjee- Bhattacharya did not extend their study of interstate price differentials to urban consumer prices and hence Bardhan did not extend his study of the Incidence of Poverty to urban India. Con sequently, when it came to determining the state-specific urban poverty lines, Raj Krishna had to rely on his own resources which, as the results show, proved inadequate.

Table A

State	Consumer Price Index for Working Classes (1960-61 = 100) Average for 1961-63	State-Relative Urban Price Index with All India Average = 100	State-Specific Poverty Line 1960-61 Urban
(1)	(2)	(3)	(4)
Madhya Pradesh	110.45	103.22	23.22
Maharashtra	103.62	96.84	21.79
All-India	107.00	100.00	22.50

Raj Krishna notes: 'For converting the urban all-India norm, no state-relative price index is available'. Hence, he proceeds to utilise 'the three year (1961-63) average of the working class consumer price index'. The data given in Table A illustrate the procedure. The implicit argument runs as follows: The Consumer Price Index for working classes shows that while the average all-India urban price level in 1961-63 was 107.00 per cent of 1960, the same in Maharashtra was 103.62 per cent and in Madhya Pradesh 110.45 per cent (col. 2). Hence, in 1961-63, the urban consumer prices in Maharashtra were 3.16 per cent below the all-India prices and in Madhya Pradesh they were 3.22 per cent above the all India prices (col. 3). Now, Bardhan had treated results based on the 18th Round of the National Sample Survey (Feb. 1963 - Jan. 1964) valid for 1960-61. Hence, the above results may certainly be regarded valid for the period 1961-63. It follows that, following Dandekar-Rath, if we place the all-India urban poverty line at

Rs 22.5 in 1960-61 urban prices, the cost of the same consumer basket and hence the urban poverty line would be Rs 21.79 (3.16 per cent below the all-India norm) in Maharashtra and Rs 23.22 (3.22 per cent above the all-India norm) in Madhya Pradesh (col. 4).

Clearly, the second step in the above argument, leading from column (2) to column (3) is a bad slip. What we have in column (2) is a comparison over time of urban consumer prices in each state and all-India average of 196 1-63 compared with average of 1960-61 in each state and all-India. Raj Krishna slips into believing that it also gives an inter-state comparison of urban consumer prices in 1961-63. In the next half-step, when he regards this inter-state comparison also valid for 1960-61, a moment's reflection would have suggested to him another equally valid procedure leading to quite another yet equally valid result; he could as well have made such an inter-state comparison of urban consumer prices in 1960-61 directly on the basis of the consumer price index in that year and come to the conclusion that the urban consumer prices in 1960-61 were the same in all the states. How? Because the consumer price index in that year was the same = 100 in all the states! Raj Krishna does not see that, this indeed is the implication of his second step.

If it were merely one of Raj Krishna's academic writings in which the error had entered, we would leave the matter there. Unfortunately, the matter is a little more serious. The error has entered the Report of the Finance Commission and reportedly may enter the plan allocation to states being made by the Planning Commission involving crores of rupees. We hope Raj Krishna will take immediate steps to rectify the error.

There is a larger question involved: how much academic sophistication to permit in operative decisions, of government. On closer examination, it is found that most often neither the underlying concept such as poverty nor the data such as coming from the National Sample Survey can bear much of the academic sophistication in which academicians often indulge. Nevertheless, such sophistication is legitimate in academic exercises which in their nature are exploratory. But it is clearly dangerous when academicians enter the field of operative decision-making without realising the exploratory and speculative character of much of their past academic work on which their present reputation often rests. With increasing computer facility, the danger today is real. In the particular case, we should be grateful that the exercise was simple and the error could be easily seen. But suppose Raj Krishna had erected a simulation model of the Indian economy, which he is undoubtedly capable of, with *v* variables, *p* parameters, *s* sectors, 1 linear and m non-linear constraints, interfaced with an independent technological-choice model subject to certain environmental optima, dynamised to oscillate stochastically between a finite and an infinite horizon and, with inputs from the National Sample Survey and other relevant sources, had fed it into the computer that now rests in the Planning Commission, we would have been all awed by its output and surrendered to its decisions on distribution of the divisible pool of the excise and the block plan assistance to the states. If academicians are not to lose some of their reputation in the Finance Commission and the rest in the Planning Commission, they must wake up to this danger.

Another instance is available in the report of the Ninth Finance Commission. In the Presidential order appointing the Ninth Finance Commission, the Commission was specifically directed that, in making its recommendations, 'the Commission shall adopt a normative approach in assessing the receipts and expenditure on the revenue account of the States and the Centre and, in doing so, keep in view the special problems of each state, if any, and special requirements of the Centre for defence, security, debt servicing and other committed expenditure or liabilities' [Ninth Finance Commission, First Report, 1988, para 4(i): 1].

The Normative Approach

The justification or need of a normative approach to assess the revenue receipts and expenditure of states is succinctly described by Justice A.S. Qureshi, who was a member of the Commission, in his Note of Dissent and General Observations:

> At the outset, I must make it clear that the Presidential Order requiring this Commission to adopt a normative approach in assessing the receipts and expenditure on the revenue account of the states and the Centre is a step in the right direction. It is indeed the need of the hour. The Centre, as well as the states, have been indulging in uncontrolled profligacy and are living beyond their respective means for quite sometime. Their performance on the revenue and the expenditure fronts is dismal. Neither the Centre nor the states practise any kind of financial discipline. In these circumstances, it is necessary that their performance should be judged on the basis of what it reasonably ought to be and pot on the basis of what it actually is. In the prevailing conditions, pertaining to

public finance, it is an imperative need to adopt the normative approach for both the Centre and the states. Anyone who has conceived this notion of normative approach has done a great service to the country in the prevailing financial chaos Neither the Centre nor the states wanted the normative approach to be applied by the Finance Com mission all of a sudden. They wanted this Commission to apply the normative approach gradually giving them chance to adapt them selves to the normative standards. In the circumstances, and on practical grounds, this Commission felt that the request was reasonable. We, therefore, decided to apply the normative approach gradually to enable the Centre and the states to trim their fiscal sails according to the needs of normative standards. In Our First Report, we had applied normative standards to the states somewhat rigorously. Consequently, some states, especially the special category states suffered heavily. We have reversed our policy on this point and now have watered down normative standards considerably in our Second Report. Although the normative approach is in itself a very beneficial thing, there is a practical difficulty in its application. Normative standards can be applied to states easily and effectively, but they cannot be applied to the Centre with the same rigour. It is difficult to set normative standard to certain items, such as, defence expenditure, debts, etc. It would, therefore, always be the grouse of the states that the normative approach is applied only to the states and not to the Centre. Such an objection is justified in the prevailing situation. However, ways and means have to be devised to lay down normative standards for the Centre also. [*Ninth Finance Commission Second Report*, 1989, para 6.1, p. 54].

Normative Assessment of the Revenue Receipts

Normative assessment of the revenue receipts involves the estimation of revenue capacity, which in turn requires the estimation of taxable and non-tax revenue capacities. While the non-tax revenue capacity was assessed normatively even in the past, tax revenues were generally assessed by the previous Commissions on the basis of historical trends or some assumed growth rates over the base year. In this process, the levels of relative under-taxation and over-taxation by the different states was not taken into account.

There are two main approaches to estimating the relative taxable capacities of the states. The 'Representative Tax System' (RTS) approach estimates the taxable capacity by applying a 'standard tax system' to the tax bases in the different states. The standard (or representative) tax system is built up by working out the average effective tax rates which are ratios of the sums of the actual revenue from the different taxes levied by the states to the sums of their respective estimated bases. By aggregating the capacities in respect of individual taxes levied by a state, the total taxable capacity of that state is derived. However, estimating taxable capacities on the basis of RTS requires compilation of voluminous data on tax bases and their proxies. Hence, the Commission entrusted this study to the National Institute of Public Finance and Policy (NIPFP). But, because of the complexity in the tax systems prevailing in different states and the non-availability of data on tax bases at the required level of disaggregation, the NIPFP was obliged to give up the exercise in RTS.

An alternative method of estimating taxable capacity is the regression approach (RA). Given that differences in tax revenues among the states are attributable to differences in factors affecting taxable capacity on the one hand, and differences in tax effort on the other, taxable capacity is estimated by regressing per capita tax revenues or tax/SDP ratios of different States on taxable capacity variables. By substituting the actual values of the capacity variables in the equation, the estimate of taxable capacity is obtained. The Commission estimated taxable capacity for 14 major states by using the regression approach with some modifications.

A major problem with this approach is that variation in tax revenue on account of tax effort factors cannot be separated from the variance due to random errors. To overcome this problem, the cross-section observations were pooled with time series from 1980-81 to 1984-85, and endogenized the effort factors by specifying dummy variables for each of the states. In order to standardise the dummy variables specified for the states, their coefficients were restricted to sum up to unity. The shifts in the tax function over time were quantified by specifying time dummy variables.

The states, being at different levels of development, are not all structurally homogeneous. Hence, the 14 major states were grouped into three categories, namely, high income, middle income, and low income, on the basis of their average per capita SDP during the three years 1982-83 to 1984-85. After experimenting with a number of taxable capacity variables, the following variables were finally included in the regression equations: the per capita SDP, the proportion of non-primary sectoral SDP to total SDP and the Lorenz Ratios of consumer expenditure distribution, computed on the basis of NSS consumer expenditure data for the 32nd Round (1977-78) and 38th Round (1983-84), interpolated for the relevant years in the equations. Of the various specifications, the log-linear form provided the best fit for all the three categories of the states. Also, the regression coefficients had the expected signs, and there was no significant serial correlation. Therefore, the normative projections of tax revenues were based on these equations.

By substituting the actual values of the explanatory variables for the year 1984-85 and the average values of the states' dummies (I/n), where n is the total number of states in the group, an estimate of taxable capacity was derived for the year 1984-85. Taking this as the base, projections were made for 1989-90. For this purpose. the growth rate of tax revenues for each of the states was derived by multiplying the income elasticity of tax revenues computed for the relevant group of states with the rate of growth of SDP in the state concerned. Elasticities estimated for the period from 1974-75 to 1984-85 were 1.10 for high income and middle income states and 0.92 for the low income states. For the period 1990-95, state tax revenues were normatively projected to grow at 11.5 per cent keeping in view the targeted SDP growth rate of 6 per cent and allowing for a price rise of 5 per cent per annum. The rate of increase in the yield of different taxes was, derived from the above projection of aggregate tax revenues, using as a base their respective growth rates in the past which were *pro rata* adjusted.

Normative Assessment of the Revenue Expenditure

The principles of estimating non-plan and plan expenditure have to be different. The normative assessment was confined to non-plan expenditure only. The non-plan expenditure again has to be distinguished into two categories, namely, developmental and non-developmental. Expenditure needs under administrative services are to be assessed on the basis of justifiable costs of providing the average standards of these services. Expenditure on social and economic services are to be determined on the basis of the justifiable costs of provision of the-physical standards of services already attained in the states; probably what is meant is provision of the physical standards of services already attained in the respective states: otherwise, it is difficult to see the distinction being made between the two categories of services.

For the purpose of assessment, the non-plan revenue expenditures are further classified into three categories: (i) regular and recurring items of revenue expenditure in which interdependence between capital and revenue expenditure is weak; these form a substantial proportion of the total expenditure; (ii) items of revenue expenditure which depend primarily upon the existing stock, physical and financial; (iii) items of expenditure which cannot be assessed on the basis of statistical analysis or engineering norms but have to be reckoned on actual basis or broad judgment. Hence, normative expenditure can be determined on the basis of cost functions only for the first category. This is what was done.

There is a short section, titled *Conceptual issues*, explaining the basis of the cost functions. It uses some mathematical notation which we shall try to deliver in simple prose. Total expenditure on given services in a state, is the number of units of services provided, multiplied by the unit cost of the services. The unit cost depends on many factors which may be classified into two categories: (i) those within the control and (ii) those beyond the control of the state government. Then, the normative expenditure on general services in a state is defined as all states' average standard of the service *multiplied* by (all states' average cost within the control of the states *plus* unit cost beyond the control of the particular state). On the other hand, the normative expenditure on social and economic services in a state is defined as the particular state's standard of the service *multiplied* by (all states' average cost within the control of the states *plus* unit cost beyond the control of the particular state). We suspect that there are some printing errors in the notation used in the original text. However, we hope that the above account is reasonably correct.

For fear that this might be all too clear to the Finance Commission, the following was added: 'However, ... the measurement of quantity of public services has to he through the reckoning of inputs required for their provision. Similarly, the several cost factors have to be represented by various proxies' [*Second Report*, 1989, Appendix 5, para B.5.7, p. 113]; consequently, the normative expenditure on social and economic services in different states depends upon a *stochastic* relation involving vectors of proxies of units or quantities of services provided, unit costs within and beyond the control of the state governments. For the uninitiated, we may add that, all that it means is that all the proxies are liable to random errors.

We have extracted the above in a summary form from the First and Second

Reports of the Ninth Finance Commission and we hope that our summary is sufficiently accurate. However, those with greater interest should refer to Appendix 5 of the Second Report of the Commission.

Evidently, a majority of the members of the Commission were not quite satisfied with the estimates arrived at by the normative approach and hence estimates were got worked out through an alternative method and compared with the normative estimates. As there was divergence between the two estimates, 'moderation' was carried out in the normative estimates to bring them closer to the alternative estimates. But, one member, Justice A.S. Qureshi thought it necessary to register his objections in a minute of dissent. As already mentioned, he showed appreciation of the normative approach and gave good reasons for the same. But, he had an objection 'to the results arrived at by adopting the normative approach in assessing the receipts and expenditures on the revenue account of the states and the Centre'

> 6.3 I have an objection to the results arrived at by adopting the normative approach in assessing the receipts and expenditure on the revenue account of the states and the Centre. It is on the ground that they have been worked out on the basis of econometric models relying on proxies, dummies, variables, etc., in the absence of accurate or reliable data. Moreover, certain considerations have been built in to arrive at the desired results. I am really doubtful about the efficacy of such a mechanical approach towards normative assessment of receipts and expenditures of states in such a vast country with widely varying social and economic conditions and historical background. After all, life is not all law or logic. It is not susceptible to algebraic equations, econometric models, or any other theoretical formula. Life is full of contradictions, conflicts and compulsions. Hence, things have to be seen realistically and not theoretically. Though efforts have been made to impart some realism to the econometric normative estimates by 'moderating' them considerably with reference to the figures arrived at by the alternative traditional method, this, in my view, is not a very happy state of affairs.
>
> 6.4 Relying on the normative approach, as a means of assessment of receipts and expenditures of states, the Commission did not call upon the states to furnish their forecasts, as was done in the past,

until nearly the end of the Commission's work. The forecasts when received were not in proper form. The dialogue thereon with some of the state representatives at that late stage was a mere formality. This was quite wrong in my opinion. A proper forecast and detailed discussions with the state representatives could have provided a lot of information useful for the formulation of realistic estimates for the sake of comparison with the normative assessment.

6.5 The normative estimates derived from the econometric models remain more or less a mystery. How these have been formulated, what factors have gone into them, what weights have been assigned to various factors, and what are the disabilities taken into account and provided for in the case of different states, are not known. On my enquiry, I was told that there were too many details involved in the process and it was difficult to explain or check them. I was also told that only some kind of random sample check could be done. As it was now too late to check them, or work out the estimates through an alternative method, I had no choice but to accept the estimates as arrived at through the so-called econometric models. However, I am doing so with considerable mental reservations. Even my other esteemed colleagues do not appear to have been satisfied with these estimates arrived at through the econometric models. That is why the estimates were got worked out through an alternative method and compared with the normative estimates. As there was divergence between the two estimates, 'moderation' was carried out in the estimates derived from the econometric models to bring them closer to the alternative estimates.

6.6 Let me in the end repeat that I am all for normative approach in assessing the revenue receipts and expenditures of the Centre and the states. What I am really doubtful is about the reliability of the data used and the mechanical manner in which the normative assessment has been done. In such a vast country as ours, with widely varying social and economic conditions and historical background, no theoretical model would work. Hence, things have to be seen realistically. The 'moderation' done in the normative estimates to impart some realism is not a very satisfactory solution. I wish that more thorough study of the subject had been done and more broad-based and accurate data/information collected before this approach wits put to practical application. It would have been immensely useful if the state governments and the subject specialists had been more actively involved in evolving normative approach towards different items of receipts and expenditures. [*Ninth Finance Commission, Second Report,* 1989, Pp: 54-55].

Evidently, there have been second thoughts. The Presidential order appointing the Tenth Finance Commission does not direct the Commission to adopt a normative approach in assessing the receipts and expenditure on the revenue account of the states and the Centre.

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GROSS DOMESTIC PRODUCT AND REGIONAL DISPARITIES IN DEVELOPMENT IN INDIA*

V.M. Dandekar

The Gross Domestic Production (GDP) of India, at 1980-8 1 prices, increased at an average annual rate of 3.79 per cent over the 42 years, from 1950-51 to 1991-92. Per capita GDP increased at 1.62 per cent a year, i.e., it doubled in 40 years. Sector-wise, the lowest annual growth rate was in agriculture. The regional disparities widened. The four states, Bihar, Orissa, Madhay Pradesh and Uttar Pradesh, were the poorest in 1960-61; they stayed the poorest in 1990-91 along with a lowering of their relative position and a widening of the disparities. The Directive Principles of State Policies make a feeble, if at all, reference to reducing the income disparity between the States. The Finance Commissions have been given the task of devolution of specific central tax revenues to states and providing grants-in-aid to such states as are in need of assistance. The First Finance Commission interpreted this last task as helping lagging states in equalising standards of basic social services. It's recommendations started well in this direction. But the creation of the Planning Commission led to lack of clarity in regard to their respective functions, finally resulting in the commissions, the Fourth Finance Commission onwards, giving up this approach and confirming themselves to pro vision for improving administration. A review of the recommendations of the succeeding finance commissions, as well as the assistance to the states by the planning commission in succeeding plans, based largely on the Gadgil formula, shows a steadily rising devolution of central tax resources to states, largely in a progressive manner. The transfer from the centre to the states as a percentage of the state's own tax revenue increased from 15.45 per cent in 1950-51 to 66.18 per cent in 1991-92. Neverthless, the disparity between the states is widening, mainly because the transfers have not been specific for specific items in which a state is lagging. The states would agree to such a scheme of transfer if the trasnfering and over-seeing body is not the central government but a body constituted by the Interstate Council. With this provision, the role of the Planning Commission has to undergo a change, the Finance and the Planning Commissions should be merged and the nature of plan formulation must also change. The last part of the paper summarises the approach developed for the devolution of funds for gradually equalising basic social services in different parts of a state, in order to draw a lesson for the specific purpose devolution of central fund to states.

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* Late Professor V.M. Dandekar was engaged in editing and to a certain extent updating his writings for publication when he died at the end of July 1995. A large part of his writings, thus completed, have been published in two volumes by Sage Publications, New Delhi. He had nearly completed only three chapters of the third and final volume when he died. One of these chapters was published in the July-September 1999 issue of this Journal. The present article is based on a part of the second and the whole of the third chapter prepared by him, and is published here in view of its current relevance. - Editor.

SECTION I.
GROSS DOMESTIC PRODUCT

It may be useful for the uninitiated if we clarify certain definitions in the field of National Accounts Statistics. The most commonly used term is National Income. But because of the identity between National Income and National Product, and because a large part of the National Income is based on the estimates of production, it is now common to use the term National Product rather than National Income. Then there is the distinction between National and Domestic. Domestic Product is the production done within the geographical boundaries of a country. National Product (Income) is the income of the citizens of the country. This is estimated by adding to the Domestic Product the incomes of factors (mainly capital and labour) owned by nationals but employed abroad and deducting incomes of factors owned by foreigners but employed in the domestic economy. Next is the distinction between Gross and Net. In the process of production, a certain quantum of physical capital, plant, equipment, machinery. etc., is used and it depreciates in use for which some allowance has to be made. If from the Gross National (Domestic) Product, we deduct such depreciation we get Net National (Domestic) Product. But, because of the large subjective element entering into the allowance for depreciation, the use of Gross rather than the National (Domestic) Product is often preferred. Finally, there is the distinction between Gross/Net National (Domestic) Product at market prices and at factor cost. National (Domestic) Product is that product which comes to the market and is valued at market prices. An important exception is the output of agriculture, the bulk of which is consumed at home and hence does not appear on the market. But the market prices are affected by indirect taxes which government levies on various products and by subsidies which government pays to certain products. These are entirely exogenous to the processes of production though they may affect output of some commodities. But, valuing a given output at market prices, which are more directly affected by indirect taxes and subsidies, does not seem appropriate. Hence, indirect taxes (net of subsidies) are deducted from the National (Domestic) Product valued at market prices. The result is what is called Gross/Net National (Domestic) Product at factor cost. In the following article we shall be using Gross Domestic Product (GDP) at factor cost as a measure of aggregate output produced in a given year, though to avoid repetition, we may not use the qualification ‘at factor cost’.

GDP as a Measure of Value Added in Production

More particularly, GDP is a measure of aggregate production, or rather of productive activity in an economy. It is an unduplicated total of the output of productive activity. The output of every productive activity uses up some output of some other productive activity. For instance, a producer of ready-made clothing uses cloth which is the output of weaving; which, in turn, uses yarn which is the output of spinning; which, again in turn, uses cotton which, in turn, is the output of ginning; which, in turn, uses cotton which is the output of agriculture. Cultivation of cotton also uses materials such as irrigation water, power, fertilizers and insecticides, etc. But, to cut the story short, let us suppose that cotton is grown in a very primitive manner using nothing but land and the labour of the cultivator. Now, to obtain an aggregate measure of the output of all these activities, if we add the value of ready-made clothing, value of cloth, value of yarn, value of ginned cotton, and value of cotton, obviously we shall be counting the value of cotton five times, value of ginned cotton four times, value of yarn three times, value of cloth two times, and value of ready-made clothing once. To avoid such a duplication, what we have to do is to deduct from the value of output of any activity, the value of outputs of other activities which are used as inputs in the particular activity. Thus, an unduplicated total of the output of the chain of activities mentioned above, is the sum of the value added at each stage, namely, the value of (ready-made clothing - cloth) + (cloth - yarn) + (yarn - ginned cotton) + (ginned cotton - cotton) + cotton. Thus viewed, the essence of an activity is to use, as inputs; materials (goods and services) which are the outputs of other activities and produce an output of which the value is greater than We value of inputs used. In other words, each activity adds value to the inputs used and the GDP is the sum total of such value added.

When from the final output are deducted all materials (goods and services) used as inputs, what is left behind is the value added by applying labour to natural resources represented by ‘land’. It will be noticed that among the inputs are included not only material goods but also services. The distinction between labour and services is rather fine. For instance, activities of doctors, lawyers, teachers, administrators, etc., are called services while those of cultivators, factory workers, etc., are called labour. We shall not go into the basis of this distinction.

Thus, GDP is the sum total of value added by all activities in the economy and this is basically attributable to land and labour. These are the basic factors of production. However, realizing that the use of capital, along with land and labour, increases the value added by the latter, capital is also considered a factor of production. Labour is paid wages when it is employed on contractual terms. For the self-employed, wages have to be imputed. If the enterprise (activity) does not own any land, it may lease in for a given rent. Thus, leased in land is rewarded by contractual rent. For any land owned by the enterprise rent has to be imputed. Similarly, if an enterprise does not have sufficient capital, it can either borrow, or introduce its own. Capital is borrowed at a fixed rate of return called the interest. Capital without a guaranteed rate of return is called the 'equity' capital; returns to it are uncertain depending upon whether the enterprise adds value more than the actual or imputed wages and rent, and interest on borrowed capital; they may be positive (profit) or negative (loss). Those who are willing to take the risk of this uncertainty, are called entrepreneurs. They may contribute any of the factors of production, namely, land, labour, and capital or none at all. If they do not contribute any of the factors of production, they are pure entrepreneurs; their expertise lies in bringing, the several factors of production together, run the enterprise, and take the risk of making a profit or a loss. To sum up, GDP, net of capital depreciation, in other words, the NDP, at factor cost, gets split up into factor incomes, namely, rent of land, wages of labour, interest on capital, and profits/loss of entrepreneurship.

The essence of material development, as normally understood, is the growth of the GDP. To judge the growth over the past four decades in India, we give in Table 1, the GDP at current prices (col. 2) whereby 'current' is meant prices current in the given year (col. 1).

In the last two rows are given the results of fitting a log-linear regression of the GDP on the several years. The last but one row gives the annual (compound) per cent growth rate. The last row gives the R^2 being a measure of how good the regression fit is. The large values of R^2 are not surprising, considering that the regression is fitted over a long period of over 40 years when the GDP was growing at whatever rate it was. Hence, the large value of R^2 should not be taken to mean that the growth rate has been constant over the period. But, it does mean that the changes in the growth rate were small and the average growth rate is a good indicator of the long period trend. Our interest lies in the long-term trend over the last four decades and not in the fluctuations or even changes in different sub-periods.

To sum up, the GDP increased at an average annual rate of 10.32 per cent. Normally, this would be considered a more than satisfactory rate of growth if it were real. Unfortunately, it is not so. The average annual rate of 10.32 per cent is at current prices which means in terms of prices prevailing in each year. As everyone knows, the prices have been increasing over the years and, therefore, the above mentioned annual rate of growth of 10.32 per cent has in it a component of increase in prices. To remove this component, the GDP each year is also computed at what are called ‘constant’ prices, namely, at prices as they were in a given year which in the present case is 1980-81. This is given in col. 3 of Table 1. The wholesale price index with 1981-82 as base is given in col. 4. It will be seen that the GDP at 1980-81 prices shows a much smaller average annual rate of growth, namely, only 3.79 per cent. The difference between the growth rates at current and constant prices obtained by dividing the former by the latter, namely, (1.1032/1.0379 = 1.062953), indicates that over the period, the prices should have increased at an average rate of 6.30 per cent. In fact, the wholesale price index (1981-82 = 100) increased at an annual average rate of 7.01 per cent. Based as it is only on the average rates of growth, the agreement is close enough. The small difference could be due to the possibility that all the constituents of the GDP did not grow at the same annual average rate and the relevant prices also did not increase at the same annual average rate.

Over the past four decades, just as the prices have increased, the population has also risen as shown in col. 5 of Table 1. In fact, the population has increased at an average annual growth rate of 2.17 per cent. In a labour-shortage economy, an increase in population may be an advantage because it supplies the much needed additional labour. But, in a labour-surplus economy, such as in the Indian economy, an increase in population can prove a great disadvantage and may retard the rate of growth of the GDP. Hence, as a measure of the well-being of the people and of the prospects of development of the economy, we should consider the GDP per capita (person) and find the rate of growth in the per capita GDP as is done in col. 6 of Table 1. It shows that, over the past four decades, the per capita GDP has grown at an average annual rate of 1.62 per cent. To judge how unsatisfactory it has been, we may compare it with a monthly salary of Rs 1,000 with an annual increment of Rs

Table 1. Gross Domestic Product at Current and Constant Prices and Per Capita

Year	GDP at Current Prices (Rs crore)	GDP at Constant 1980-81 Prices (Rs crore)	Wholesale Price Index 1981-82=100	Population (million)	Per Capita GOP at Constant Prices (Rs)
(1)	(2)	(3)	(4)	(5)	(6)
1950-51	8,979	42,871	17.71	359	119.42
1951-52	9,480	43,872	16.87	365	20.20
1952-53	9,349	45,117	16.03	372	121.28
1953-54	10,180	47,863	14.19	379	126.29
1954-55	9,563	49,895	14.65	386	129.26
1955-56	9,717	51,173	16.68	393	130.21
1956-57	11,600	54,086	17.17	401	134.88
1957-58	11,859	53,432	17.88	409	130.64
1958-59	13,266	57,487	18.55	418	137.53
1959-60	13,934	58,745	19.78	426	137.90
1960-61	15,254	62,904	19.82	434	144.94
1961-62	16,097	64,856	20.55	444	146.07
1962-63	17,212	66,228	21.82	454	145.88
1963-64	19,671	69,581	24.22	464	149.96
1964-65	22,981	74,858	26.06	474	157.93
1965-66	24,063	72,122	29.68	485	148.71
1966-67	27,389	72,856	33.13	495	147.18
1967-68	32,187	78,785	32.75	506	155.70
1968-69	33,943	80,841	33.98	518	156.06
1969-70	37,328	86,109	35.86	529	162.78
1970-71	39,708	90,426	38.02	541	167.15
1971-72	42,248	91,339	41.83	554	164.87
1972-73	46,473	91,048	50.29	567	160.58
1973-74	56,954	95,192	62.96	580	164.12
1974-75	67,039	96,297	62.28	593	162.39

(Contd.)

Table 1. ***(concld.)***

Year	GDP at Current Prices (Rs crore)	GDP at Constant 1980-81 Prices (Rs crore)	Wholesale Price Index 1981-82=100	Population (million)	Per Capita GOP at Constant Prices (Rs)
(1)	(2)	(3)	(4)	(5)	(6)
1975-76	71,201	1,04,968	63.58	607	172.93
1976-77	76,536	1,06,280	66.89	620	171.42
1977-78	87,353	1,14,219	66.89	634	180.16
1978-79	93,880	1,20,504	78.34	648	185.96
1979-80	1,02,442	1,14,236	92.63	664	172.04
1980-81	1,22,427	1,22,427	101.27	679	180.30
1981-82	1,42,876	1,29,600	100.00	694	186.74
1982-83	1,58,851	1,33,469	112.90	709	188.25
1983-84	1,85,991	1,44,310	120.10	724	199.32
1984-85	2,07,869	1,49,966	125.40	739	202.93
1985-86	2,33,799	1,56,566	132.70	755	207.37
1986-87	2,60,030	1,63,271	143.60	771	211.77
1987-88	2,94,408	1,70,322	154.30	788	216.14
1988-89	3,52,703	1,88,943	165.70	805	234.71
1989-90	4,08,661	2,01,453	182.70	822	245.08
1990-91	4,75,604	2,11,260	207.80	839	251.80
1991-92	5,51,552	2,13,590	228.70	856	249.52
Annual Growth Rate (per cent)	10.32	3.79	7.01	2.17	1.62
R^2	0.9844	0.9916	0.9767	0.9995	0.9544

Source: *CSO, National Accounts Statistics*, (various issues) except Wholesale Price Index. The latter taken from the RBI *Report on Currency and Finance* (various issues). Over the years, the base year of the Index has changed. It has been brought to a common base (1981-82) by appropriate chain-linking.

16.2; the Pay Com mission would not believe it because of its total disregard for the rest of the economy. The facts are that for the economy as a whole, the per capita annual income in 1951-52 was Rs 120.20 (at 1980-81 prices) and that it just about doubled to Rs 249.52 in 1991-92. The long-term perspective of the First Five Year Plan (1951-56) was to double the per capita income in 27 years; instead, it took 40 years.

Table 2. Annual Average Growth Rate of GDP (at 198O-81 Prices) and the Share of GDP by Industry of Origin

		Sector	Annual Average Growth Rate per cent	GDP Originating in the Industry as per cent of Total GDP				
				1950-51	1960-61	1970-71	1980-81	1990-91
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.		Agricultural Forestry and Fishing	2.32	55.38	50.86	44.47	38.10	31.08
	1.1	Agriculture	2.43	48.66	45.85	39.73	34.69	28.87
	1.2	Forestry and Logging	0.60	6.04	4.23	3.96	2.66	1.47
	1.3	Fishing	3.81	0.68	0.79	0.77	0.75	0.74
2.		Mining and Quarrying	5.09	1.08	1.27	1.29	1.54	1.99
3.		Manufacturing	5.21	11.38	13.94	16.14	17.68	21.26
	3.1	Registered	5.91	5.39	7.31	9.42	10.03	13.18
	3.2	Unregistered	4.38	5.98	6.63	6.73	7.65	8.08
4.		Electricity, Gas and Water Supply	8.75	0.33	0.59	1.19	1.69	2.28
5.		Construction	4.51	3.34	4.21	5.02	4.99	4.45
6.		Trade, Hotels and Restaurants	4.82	8.52	9.69	10.76	12.02	12.62
	6.1	Trade	4.82	8.01	9.12	10.13	11.30	11.85
	6.2	Hotels and Restaurants	4.84	0.51	0.58	0.63	0.71	0.72
7.		Transport, Storage & Communication	5.88	2.48	2.94	3.49	4.68	5.29
	7.1	Railways	4.03	0.80	0.86	0.90	0.92	0.79
	7.2	Transport by Other Means	6.49	1.35	1.68	2.06	3.01	3.72
	7.3	Storage	5.03	0.07	0.06	0.06	0.10	0.09
	7.4	Communication	6.39	0.27	0.34	0.47	0.65	0.69
8.		Financing, Insurance, Real Estate & Business Services	4.11	9.03	8.24	8.02	8.81	9.92
	8.1	Banking and Insurance	7.30	1.15	1.55	2.01	2.78	4.96
	8.2	Real Estate, Owned Dwelling, Business Services	2.86	7.88	6.70	6.01	6.03	4.96
9.		Community, Social, and personal Services	4.65	8.46	8.25	9.61	10.48	11.11
	9.1	Public Administration & Defence	6.31	2.28	2.56	3.79	4.73	5.37
	9.2	Other Services	3.64	6.18	5.69	5.82	5.75	5.74
10.		Total GDP at Factor Cost	3.79					

Source: *CSO, National Accounts Statistics,* various issues.

Let us examine whether the GDP originating in different sectors have different rates of growth and, if so, how different. This is given in col. 3 of Table 2. It will be seen that, barring forestry and logging which grew at an average rate of less than 1.0 per cent, we have at the lower end, average annual rate of growth of agriculture (2.43 per cent) and of real estate,, etc., (2.86 per cent). At the higher

Table 3. Factor Shares in the NDP

(Per cent)

Year	NDP at Current Prices (Rs Crore)	Compensation of Employees	Interest	Rent	Profit and Dividend	Mixed Income of Self-employed
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1960-61	13,335	33.72	3.19	5.19	6.70	51.20
1961-62	14,085	33.78	3.52	5.21	7.05	50.44
1962-63	14,903	35.68	3.85	5.38	7.39	47.70
1963-64	17,089	34.33	3.91	5.33	7.64	48.78
1964-65	20,148	32.83	3.84	4.90	6.74	51.69
1965-66	20,801	35.45	4.56	4.88	6.79	48.32
1966-67	24,078	34.63	4.34	4.48	5.71	50.85
1967-68	28,312	34.23	4.32	3.90	4.27	53.27
1968-69	28,862	35.68	4.77	4.18	4.38	50.99
1969-70	31,877	35.38	4.75	4.12	5.07	50.68
1970-71	34,519	38.71	5.22	5.06	4.33	46.68
1971-72	36,864	39.22	5.55	5.24	4.59	45.41
1972-73	40,572	38.95	6.21	5.12	4.13	45.59
1973-74	50,749	35.11	5.42	4.21	3.95	51.31
1974-75	59,737	35.74	5.63	3.83	4.93	49.88
1975-76	62,234	39.24	6.68	4.21	4.59	45.42
1976-77	67,157	39.57	7.52	4.48	5.94	42.49
1977-78	73,939	41.56	7.69	4.34	5.31	43.81
1978-79	81,477	41.34	8.02	4.46	5.16	41.01
1979-80	88,660	42.27	8.21	4.61	5.38	39.53
1980-81	1,05,445	40.81	7.82	4.10	4.52	42.75
1981-82	1,20,973	40.58	8.32	3.76	5.98	41.35
1982-83	1,34,488	41.82	8.56	3.72	6.37	39.53
1983-84	1,59,256	40.75	8.21	3.45	5.71	41.88
1984-85	1,75,489	42.17	8.58	3.56	6.02	39.67
1985-86	2,07,562	38.46				
1986-87	2,30,207	39.61				
1987-88	2,61,510	40.22				
1988-89	3,13,782	38.81				
1989-90	3,63,662	38.59				
1990-91	4,24,040	38.22				
1991-92	4,89,277	38.21				

Source: CSO, *National Accounts Statistics*, various issues.

end, we have electricity, gas and water supply (8.75 per cent) and, banking and insurance (7.30 per cent). In the remaining cases, the average annual growth rate lay between 3.5 and 6.5 per cent. In particular, public administration and defence has grown at an annual average rate of 6.31 per cent, while that of manufacturing (registered and unregistered together) has increased from 5.21 per cent in 1950-51 to 21.26 per cent in 1990-91. This, of course, is what happens in the course of development.

Factor Incomes

As earlier said, the GDP, net of capital depreciation, which is the Net Domestic Product (NDP) at factor cost, gets split up into factor incomes, namely, rent of land, wages (called employee compensation to include other allowances, and benefits), interest on borrowed capital, and profits/loss (called operating surplus/deficit) of entrepreneurship. Table 3 gives the factor shares of the NDP from 1960-61 to 1984-85 and from 1985-8610 1991-92. For the period 1960-61 to 1984-85, the data are available on a uniform basis giving factor incomes broken up into (i) compensation of employees, (ii) interest, (iii) rent (iv) profit and dividend, and (v) mixed income of the self-employed. For 1985-86 to 199 1-92, only compensation of employees is shown separately while all other factors are lumped together.

There are a few notable features. First, the share of compensation of employees, which is wages and allowances of labour, has increased over the years from 33.72 per cent in 1960-61 to 42.7 per cent in 1984-85; this can be due to an expansion of wage employment in the economy. However, in 1985-86, because of reasons which arc not clear, it came down to 38.46 per cent and stayed more or less around that level thereafter; it is possible that there is some lack of comparability between the two periods. In any case, a steady share of wages in the GDP should not be construed to mean that the wage rate has remained more or less constant. Second, share of interest has increased from 3.19 per cent in 1960-61 to 8.58 per cent in 1984-85; this can be due to growing savings in financial assets such as government securities, provident funds, banks deposits, etc. Third, the share of rent has declined from 5.19 per cent in 1960-61 to 3.56 per cent in 1984-85; the decline is small hut implies a decline in leasing of land and renting of residential accommodation. Fourth, the share of profits and dividends, by their very nature, have fluctuated between a high of 7.64 in 1963-64 and a low of 3.95 per cent in 1973-74, without a definite trend. Regarding the self-employed, as already indicated, it is not possible to sort out the various factor shares with imputation. Hence, in col. 6 of the Table, they are given all together as mixed income.

Its share has remained more or less constant between 1960-61 and 1975-76 varying between 45.0 and 50.0 per cent but thereafter has remained below 45.0 per cent indicating a decline in self-employment.

It is obvious that the factor shares will be different in different sectors of the economy. To examine these differences, the several industries are grouped into five sectors as follows: **Primary:** agriculture, forestry and logging, fishing, mining and quarrying; **Secondary:** registered and unregistered manufacturing, construction, electricity, gas, and water supply; **Transport, Communication, and Trade:** railways, transport by other means, storage, communication, trade, hotels, and restaurants; **Finance and Real Estate:** banking and insurance, real estate, ownership of dwellings, and business services; **Community and Personal Services:** public administration and defence, other services. In Table 4, we show the factor shares for the five sectors for the three years 1960-61, 1970-71, and 1980-81.

In the primary sector, self-employment is common. Naturally, in this sector, the share of mixed income is predominant; it has remained between 65.0 and 70.0 per cent over the three decades. Of course, it does not mean that the share of the primary sector in the GDP has remained constant; actually, as already mentioned, it has declined. The share of mixed income is also predominant in the transport, etc., sector but shows signs of decline over the years; it was 61.1 per cent in 1960-61 and 50.1 per cent in 1980-81. It was sizeable in the secondary sector and in community and personal services; but its share has gone down in both these sectors, much more so in the latter sector indicating a decline of self-employment in all the three sectors.

A corollary of a decline in self-employment is an increase in wage-employment. This is most evident in community and personal services where the share of employee compensation has gone up from about 70.0 per cent in 1960-61 to over 90.0 per cent in 1980-81. It is sizeable in the secondary sector but has stayed between 47.0 and 57.0 per cent without signs of rise or decline. On the other hand, its share in transport, communication and trade has gone down from 44.5 percent in 1960-61 to 37.5 per cent in 1980-81. Its share, in finance and real estate, was not large, only 18.8 per cent in 1960-61; but it has risen to 32.4 per cent in 1980-81.

Table 4. Factor Shares in the NDP of Different Sectors

(Per cent)

Year/Sector	NDP at Current Prices Rs Crore	Compensation of Employees	Interest	Rent	Profit & Dividend	Mixed Income of Self-employed
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1960-61						
Primary	6,965	25.38	3.26	2.90	2.71	65.74
Secondary	2,549	47.78	4.35	1.33	19.22	27.30
Transport Communication & Trade	1,870	44.49	4.39	3.80	7.65	61.07
Finance and Real Estate	552	18.84	0.18	66.85	12.32	1.81
Community and Personal Services	1,399	69.69	0.29	1.14	0.21	28.66
All Sectors	13,335	33.72	3.19	5.19	6.70	51.20
1970-71						
Primary	17,307	22.56	3.17	2.37	2.25	69.65
Secondary	6,790	57.69	10.84	1.40	10.93	19.15
Transport Communication & Trade	5,454	40.76	9.26	5.02	2.07	42.89
Finance and Real Estate	1.683	26.50	0.18	56.86	14.62	1.84
Community and Personal Services	3,285	87.43	0.30	0.37	0.09	11.81
All Sectors	34,519	38.71	5.22	5.06	4.33	46.68
1980-81						
Primary	42,668	24.22	5.73	1.23	2.05	66.78
Secondary	23,986	52.60	16.25	1.91	10.04	19.20
Transport Communication & Trade	21,507	37.51	8.69	3.80	-0.14	50.14
Finance and Real Estate	6,189	32.44	0.15	40.43	24.45	2.54
Community and Personal Services	11,095	90.16	0.20	0.22	0.04	9.39
All Sectors	1,05,445	40.81	7.82	4.10	4.52	42.75

Source: *CSO, National Accounts Statistics,* various issues.

The share of profits and dividends, in the secondary sector, was almost 20.0 per cent in 1960-61 but came down to only about 10.0 per cent in 1970-71 and 1980-81. On the other hand, in finance and real estate, it almost doubled from 12.3 per cent in 1960-61 to 24.5 per cent in 1980-81.

Thus, with development and the growth of the GDP, not only the composition of the GDP changes, but the factor shares also change.

SECTION II.
REGIONAL DISPARITIES IN DEVELOPMENT

The inadequate growth in the GDP as also the small decline in the rate of growth of population have not been the same in all the states of the Indian Union. To see the consequences, we may examine per capita Net State Domestic Product (SDP) of 16 major states. This is available from 1960-61 to 1990-91. To bring out the differences, we shall express the per capita Net SDP (at factor cost, at current prices) of different states as percentages of the all-India per capita Net Domestic Product (NDP). Then we rank the states, in descending order, according to these percentages in each of the four years, 1960-61, 1970-71, 1980-81, and 1990-91. Punjab was divided into Punjab and Haryana in 1966. Nevertheless, separate estimates for the two are available beginning with 1960-61. Himachal Pradesh was not a separate state in 1960-61. Hence, ranks run from 1 to 15 in 1960-61 and from 1 to 16 in the later three years. These ranks are given in col. 2 and the average rank in col. 3 of Table 5. Finally, the states are arranged according to their average rank.

Table 5. Per Capita NET SDP of Major States as Percentages of Per Capita NDP

State		Percentage				
		Average Rank	1960-61	1970-71	1980-81	1990-91
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Punjab	(3+1+1+1)/4	1.50	119.61	169.04	164.55	165.42
Maharashtra	(1+4+2+3)/4	2.50	133.66	123.70	149.85	144.19
Haryana	(6+2+3+2)/4	3.25	106.86	138.55	145.85	147.90
Gujarat	(4+3+4+4)/4	3.75	118.30	130.96	119.88	112.10
West Bengal	(2+5+6+7)/4	5.00	127.45	114.06	99.20	93.69
Himachal Pradesh	(6+5+6)/3	5.67	-	107.11	104.86	94.42
Tamil Nadu	(5+11+9+5)/4	7.50	109.15	91.79	92.18	99.49
Karnataka	(8+8+7+9)/4	8.00	96.73	101.26	93.97	90.83
Andhra Pradesh	(10+10410+8)/4	9.50	89.87	92.42	84.92	93.20
Rajasthan	(9+7+15+11)/4	10.50	92.81	102.84	75.20	81.08
Kerala	(9+7+15+11)	10.50	84.64	93.84	92.80	82.79
Assam	(7+12+12+13)/4	11.00	102.94	84.52	81.05	79.12
Madhya Pradesh	(12+14+11+12)/4	12.25	82.35	76.46	83.57	79.99
Uttar Pradesh	(13+13+13+14)/4	13.25	82.35	76.78	78.65	69.41
Orissa	(14+15+14+15)/4	14.50	70.92	75.51	75.75	60.65
Bihar	(15+16+16+16)/4	15.75	70.26	63.51	56.43	51.90

Source: Cols. (2) and (3) Estimates of State Domestic Product, 1960-61 - 1983-84, Nov. 1985. CSO. Dept. of Statistics, Ministry of Planning, Govt. of India, Tables 3 and 7, respectively.
Figures for 1980-81 and 1990-91 given in Cols. (4) and (5) were supplied by the CSO.

It will be noticed that four states, Bihar, Orissa, Uttar Pradesh and Madhya Pradesh, were among the bottom four in 1960-6 1 and they stayed there in 1990-91. Judged by the average rank also, they are among the lowest four. Assam was not among the lowest five in 1960-61; its rank then was 7 (out of 15). But, since 1970-71, it has moved down to the rank 12 or 13. On the other hand, three states, Punjab, Maharashtra, and Gujarat were among the top four in 1960-61 and they stayed there in 1990-91; this is true also as judged by their average ranks. West Bengal was second from the top in 1960-61. But thereafter, it dropped to fifth, sixth and finally to the seventh rank in 1990-91. Haryana was not among the top 4 in 1960-61; its rank then was 6 (out of 15). But, since 1970-71, it has moved up to join the top four. By its average rank, it was 3rd from the top in 1990-91. Himachal Pradesh was not a separate state in 1960-61. In 1970-71, it was 6th from the top; in 1980-81 and 1990-91, it was more or less at the same rank (5th or 6th).

Andhra Pradesh improved its rank from 10th in 1960-61, 1970-71, and 1980-81 to 8th in 1990-91. Kerala also improved its rank from 9th in 1960-61 to 7th in 1970-71 though ii slipped to 15th in 1980-81 but recovered to 11th in 1990-91. Ranks of Tamil Nadu and Rajasthan have been somewhat erratic. Their average ranks are 7.50 and 10.50, respectively.

To sum up, the states at the bottom in 1960-61 have, by and large, remained so in 1990-91. The range between the lowest and the highest has also increased over the years. For instance, the per capita Net SDP of Bihar, lowest in all the four years, as percent of per capita NDP, steadily came down from 70.26 in 1960-61 to 51.90 in 1990-91. The same for Maharashtra, highest in 1960-61, and for Punjab, highest in later three years, moved up; in Maharashtra, it moved from 133.66 in 1960-61, to 149.85 in 1980-81 though it slipped to 144.19 in 1990-91; in Punjab, it moved from 119.61 in 1960-61 to 169.04 in 1970-71 though it too slipped to 164.55 in 1980-81 and 165.42 in 1990-91 In 1960-61, the highest was 1.70 times the lowest. In 1990-91, the highest was 3.19 times the lowest. The large and growing regional disparities are causing a strain in Centre-State and inter-State relations.

Surprisingly, the Constitution makes no reference to the disparities between states; in particular, reducing the disparities between states is not included in the Directive Principles of State Policy. The forty-fourth constitutional amendment, which took effect from 20.6.1979, which is almost 30 years after the Constitution was adopted, amended Section 38 to include the following: The State shall, in particular, strive to minimise the inequalities in income, and endeavour to eliminate inequalities in status, facilities and opportunities, not only amongst individuals but also groups of people residing in different areas or engaged in different vocations [Section 38(2)]. It will be noticed that it makes no specific reference to the states but, with some liberal interpretation, the phrase ‘groups of people residing in different areas’ may be taken to include ‘states’. Except for this rather feeble reference to disparities between states, the Constitution is mainly concerned with the division of legislative and financial powers between the Union and the states.

Division of Legislative and Financial Powers

In its Seventh Schedule, the Constitution lays down in great detail, in three lists, namely, the Union list, the state list, and the concurrent list, the distribution of legislative powers between the Union and the states. The division of the legislative powers is supported by a division of financial powers so that the states may have adequate resources to discharge the duties and responsibilities placed on them. Further, anticipating that the revenues of some of the states from the taxes assigned to them may fall short of the states’ expenditure on functions entrusted to them, the Constitution provides a comprehensive arrangement for sharing, between the Union and the states, the revenues from some of the taxes and duties levied by the Union.

The more important Articles providing segregation and sharing of taxes and duties are: (268) Duties levied by the Union but collected and appropriated by the states; (269) Taxes levied and collected by the Union but assigned to the states: (270) Taxes on income, other than agricultural income, to he levied and collected by the Union and distributed between the Union and the states, corporation tax being specifically excluded; (272) Duties of excise levied and collected by the Union, other than on medicinal and toilet preparations, which may be distributed between the Union and the states; (275) Grants from the Union to certain states which the Parliament may decide are in need of such assistance and which may he different for different states. Article 280 requires the President to appoint every fifth year, or earlier if he deems it necessary, a Finance Commission to recommend distribution of taxes and duties under Articles (270) and (272) and grants-in-aid under Article (275). The First Finance Commission was appointed in 1951 and it covered the period 1952-53 to 1956-57. The Tenth Finance Commission was appointed in 1992 and it covers the period 1995-2000.

Finance Commissions

The difference between the provisions of Articles 270 and 272 may be noticed. Article 270 requires that the proceeds of taxes on income, *shall* be shared between the Union and the states; Article 272 requires that the proceeds of Union duties of excise *may* be shared with the states if Parliament by law so provides; in other words, while sharing of taxes on income is obligatory, that of excise duties is permissive. There are two aspects of sharing the taxes on income under Article 270 and excise duties under Article 272. One is what should be the states' share in these taxes which, henceforward, we shall call the divisible pool of the states; the second is how should the divisible pool be distributed between the states. The Constitution is silent on both the points and leaves them to be decided by the Finance Commissions.

Besides, Article 27.5 empowers the Finance Commissions to recommend grants-in-aid of revenue to such states as are in need of assistance; it specifically stipulates that different sums may be fixed for different states. But, otherwise, as the First Finance Commission noted, 'The term grants-in-aid of the revenues has not been defined in the Constitution ... and it is possible to argue that it ... should be construed as confining to such grants as are intended for the augmentation of the revenues of the receiving state without any limitation as to how the money so made available, should be spent' [Finance Commission, 1952, Pp. 90-91]. But, then, it suggested that the problem has to be viewed in the larger perspective of securing equitable allocation of resources among the units that it should not be limited solely to grants-in-aid which are completely unconditional; grants directed to broad but well-defined purposes could reasonably be considered as falling within their scope' [Finance Commission, 1952, p.91]. '... the main case in favour of them (specific grants) rests on (1) the deficiency of states' resources in relation to functions; (2) the concern of the federal government in seeing that welfare services, (e.g., education, health, etc.) and developmental activities, (e.g., roads) are maintained at a certain minimum standard throughout the country; (3) the interest of the federal government in developing activities which state governments, left to themselves, might neglect, (e.g., unemployment insurance, social security, etc.); (4) the possibility of improving quality of performance in the sphere of social services, owing to the superior technical advice available to the higher level of government; and (5) the desirability of some co-ordination of standards which can be achieved there by' [Finance Commission, 1952, p. 95].

The Commission reiterated that 'both the methods of conditional and unconditional grants should have their part to play in the scheme of assistance by the Centre. Unconditional grants should reinforce the general resources of the state governments, which they would be free to allocate among competing purposes according to their best judgement, subject to the usual administrative and parliamentary checks. Grants for broad purposes may be given to stimulate the expansion of particular services rather than specified schemes under these categories' [Finance Commission, 1952, Pp. 95-96]. The Commission suggested the following principles for making grants-in-aid to states: As budgetary needs are an important criterion for determining the eligibility of a state for a grant-in-aid as well as for the assessment of the amount of the grant-in-aid, the budget has necessarily to be the starting point of an examination of fiscal need The extent of self-help of a state should determine the eligibility for, as well as the amount of help from, the Centre. This requires an assessment of the general scope for additional taxation in the states and their tax effort An allowance should he made for possibilities of economy in expenditure An important purpose of grants-in-aid is to help in equalising standards of basic social services. The standards of social services in a state may be a criterion for grants-in-aid' [Finance Commission, 1952, Pp. 96-98].

This is an admirable statement of objectives of grants-in-aid and the principles on which they should be based. Applying these principle, to assess the need for development, the First Finance Commission 'took as the basis the extent of the spread of primary education in the states' as judged by 'the proportion of the children between the ages 6 and 11 who actually attend school' [Finance Commission, 1952, Pp. 103]. To sum manse the position as then obtaining in regard to primary education in various states, the Commission used the population as given by the 1951 census, estimated the number of children of ages 6-11 at 12.7 per cent of the population (a basis adopted by the Ministry of Education), and the number of children of the age-group attending the school as given by the state governments (Table 6).

Table 6. Primary Education in Various States, 1951

(Thousand)

State		No. of Children in the Age Group 6-11	Children in this Age Group Attending School	Percentage of (4) to (3)
(1)	(2)	(3)	(4)	(5)
Travancore-Cochin	92,80	11,79	11,64	98.8
Bombay	3,59,56	45,66	29,24	64.0
Mysore	90,75	11,53	6,57	57.0
Madras	5,70,16	72,41	38,17	52.7
Assam	90,44	11,49	5,71	49.7
Saurashtra	41,37	5,25	2,23	42.4
West Bengal	2,48,10	31,51	12,77	40.5
Uttar Pradesh	6,32,16	80,28	27,28	34.0
Bihar	4,02,26	51,09	17,98	29.3
Hyderabad	1,86,55	23,69	6,22	26.2
Punjab	1,26,41	16,05	3,92	24.4
Orissa	1,46,46	18,60	4,46	24.0
Madhya Bharat	79,54	10,10	2,03	20.1
Madhya Pradesh	2,12,48	26,98	5,38	19.9
Patiala and East Punjab States Union	34,94	4,44	47	10.6
Rajasthan	1,52,91	19,42	2,06	10.6

Source: *First Finance Commission,* 1952, p. 103.

Then: We consider that a modest beginning should be made in the direction of helping those states where a large leeway has to be made up and we propose that the eight states which are lowest in the table given above should be given assistance. We have taken in each of the next four years sums rising from Rs 150 lakhs next year to Rs 300 lakhs in 1956-57 and we propose that these sums should be distributed among the eight states in proportion to the number of children of school-going age not attending school at present. We have provided a gradually rising figure for these grants as in our view this will assist the states in planning for the proper utilisation of the grants.

'We recommend that the above grants-in-aid of the revenues be made to these states in each year for the purpose of expanding primary education. These grant-in-aid are not for itemised schemes of expenditure in any state. The state governments would have full discretion in utilising them for the purpose for which they are intended. The extent to which the purpose of the grant-in-aid is achieved may be left to be assessed by our successors when the finances of the states concerned for this period come up for review. The actual progress achieved during this period will have to be judged on such criteria as the increase in the number of primary schools and children attending school, the conversion of ordinary primary schools into basic schools, the improvement of facilities for the training of primary school teachers and measures adopted for the reduction of wastage in regard to primary education. Annual reports about the progress achieved by these states in the expansion of primary education should be obtained and made available to the next Commission' [Finance Commission, 1952, p. 104].

This was an eminently correct and wise approach and all that the successive Finance Commissions could do was to improve upon it by adding to primary education other items of development, such as health, roads, etc., as the First Commission had indicated. But, it never received the consideration it deserved. One reason was the simultaneous setting up of the Planning Commission without a clear demarcation of the respective spheres of the Planning Commission and the Finance Commission.

The Planning Commission was set up in March 1950 by a Resolution of the Government of India and hence the first and subsequently appointed Planning Commissions are not statutory bodies, unlike the Finance Commissions, and not being a creation of the Constitution, they do not suffer any constitutional limitations on their powers. After the setting up of the Planning Commission, the respective spheres of the Planning Commission and the Finance Commission remained unclear until the Fourth Finance Commission. This was natural with the First Finance Commission, as the Planning Commission and the Finance Commission both were new. With the appointment of the Second Finance Commission, the lack of a clear demarcation became evident in the Presidential order appointing that Commission. In determining the states and the sums to be paid to them as grants-in-aid under article 275, the Presidential order required that the Second Finance Commission should pay attention (i) to the requirements of the Second Five Year Plan, and (ii) the efforts made by those states to raise additional revenues from the sources available to them. The Commission confessed that there was a problem: 'We had some difficulty in dovetailing our work with that of the Planning Commission ... the plan does not distinguish between revenue expenditure and capital expenditure, while our main function under the Constitution is to make recommendations for the devolution of the revenue resources. ... We had a further difficulty in making a reasonable forecast of expenditure for the next five years. Apart from the burden of recurring expenditure thrown on the states' budgets by schemes completed under the first five year plan, there were many schemes for which Central assistance was on a matching basis, sometimes tapering off over a short period. This inevitably left a recurring burden on the states of which no adequate indication could be had from figures of past actuals. ... Some anomalies inevitably arise where the functions of the two Commissions ... overlap. ... So long as both these Commissions have to function, there appears to be a real need for effectively coordinating their work' [Finance Commission, 1957, Pp. 11-13].

The Presidential order appointing the Third Finance Commission had a similar directive, namely, that the Commission should take into account (i) the requirements of the Third Five Year Plan, and (ii) the efforts to be made by those states to raise additional revenues from the sources available to them. In response, the Commission said: 'Two points of view have been expressed before us on this question The first is that the Plan itself is flexible and is subject to adjustments at the annual reviews undertaken and there is the need to ensure that the states conform to the priorities and provisions laid down. If full financial allocation is made by us, these reviews would be rendered difficult. The other point of view is that, having been endorsed by the National Development Council and approved by the Parliament, it is only logical to guarantee the necessary resources to the states to enable them to forge ahead. ... On the considerations placed before us, we recommend that the total amount of grants-in-aid should be of an order which would enable the states, along with any surplus out of the devolution, to cover 75 per cent of the revenue components of their plans. In determining the revenue component, we have deducted in full the amount of additional tax to be raised by each state as incorporated in the plan itself' [Finance Commission, 1961, Pp. 29-32].

Presumably, because of the difficulties and problems faced by the Second and the Third Finance Commission in taking into account the requirement of the respective plans, the Presidential order appointing the Fourth Finance Commission was substantially amended to say: '(4) ... the Commission should also make recommendations in regard to (a) the states which are in need of assistance by way of grants-in-aid of their revenues under article 275, and the sums to be paid to those states ... having regard, among other consideration, to (i) the revenue resources of those states for the five years ending with the financial year 1970-71, on the basis of levels of taxation likely to be reached in the financial year 1965-66; (ii) the requirements of those states to meet the committed expenditure on maintenance and upkeep of plan schemes completed during the Third Plan' [Finance Commission, 1965, p. 2]. In other words, grants-in-aid under Article 275 were meant to meet the *non-plan revenue deficit* of states. This position has remained substantially unchanged to date. In fact, the Presidential order appointing the Ninth Finance Commission directed the Commission to keep in view the objective of not only balancing the receipts and expenditure on revenue account of both the states and the Centre, but also generating a surplus for capital investment. We should mention that this was the first time that such a specific directive was given. The Presidential order appointing the Tenth Finance Commission not only retained this objective but raised it to a higher priority from (iv) to (i) and further amplified it to say 'but also generating a surplus for capital investment and *reducing fiscal deficit*' (emphasis added). This was useful as much as it demarcated the spheres of the Finance Commission and the Planning Commission but it set aside the considerations laid down by the First Finance Commission, namely, that grants-in-aid should 'be viewed in the larger perspective of securing equitable allocation of resources among the units' [Finance Commission, 1952, p. 91].

The Presidential Order appointing the Seventh Finance Commission had viewed the subject somewhat narrowly. In para 5(vi), it directed the Commission to have regard to the requirements of states which are backward in general administration, for upgradation of standards in non-developmental sectors and services with a view to bringing them to the levels obtaining in the more advanced states over the period covered by the Report of the Commission; the manner in which such expenditure could be monitored being also indicated by the Commission. In response, the Commission decided to confine themselves to only the following sectors and services: (i) Administration of taxes; (ii) Treasury and Accounts administration; (iii) Judicial administration; (iv) General administration, consisting of revenue, district, as well as tribal administration, and the Secretariat services; (v) Police; and (vi) Jails. But, it did not go back to the principles laid down by the First Finance

Commission. Further, it did not make specific grants-in-aid for the several items. Instead, it went back to the principle that grants-in-aid under article 275 were meant to meet the non-plan revenue deficit after the devolution of income taxes and excise duties. There were 8 such states and the Commission recommended grants-in-aid for upgradation of the above mentioned services just equal to their revenue deficit.

In short, the important point which the First Finance Commission made, namely, that 'An important purpose of grants-in-aid is to help in equalising standards of basic social services' [Finance Commission, 1952, p. 97] remained neglected even after the spheres of the Finance Commission and the Planning Commission were clearly demarcated. Grants-in-aid under Article 275 continued to be paid on somewhat *ad hoc* considerations.

In the following, we shall examine how the successive Finance Commissions have determined and recommended the states' share in the taxes of income under Article 270 and excise duties under Article 272, and the distribution of the divisible pool among the states.

States' Share iii Union Taxes

Income Tax: The First Finance Commission assigned to the states 55 per cent of the net proceeds of income tax. This was raised to 60, 66.67 and 75 per cent by the Second, Third and the Fourth Finance Commissions, respectively. The Fifth Finance Commission retained it at 75 per cent. It was raised to 80 and 85 per cent by the Sixth and Seventh Finance Commissions, respectively. The Eighth and the Ninth Finance Commissions kept it at 85 per cent. Presumably, there was not much room left to raise it further if the Union Government was to be left with some incentive to levy and collect the income tax.

Union Excise Duties: The First Finance Commission recommended that excise duties on only three commodities, namely, tobacco, matches, and vegetable products should be shared and fixed the share of the states at 40 per cent. The Second Finance Commission expanded the list to include sugar, tea, coffee, paper, and vegetable non-essential oils hut reduced the states' share to 25 per cent. The Third Finance Commission included in the divisible pool excise duties from all commodities except those on which the yield was less than Rs 50 lakh a year hut reduced the states' share to 20 per cent. The Fourth Finance Commission admitted all commodities without exception and retained the states' share at 20 per cent. The Filth Finance Commission went a step Further; it included special duties from 1972-73 in the divisible pool and retained the states' share at 20 per cent. The Sixth Finance Commission recommended that the revenues from cesses on excisable commodities levied under special enactments and reserved for special purpose should not be included in the divisible pool. On the other hand, it recommended that the revenues from auxiliary duties on excisable commodities levied in replacement of regulatory duties under the Finance Act of 1973 should be brought into the, divisible pool from 1976-77 onwards. The states' share was kept unchanged at 20 per cent.

A quantum jump was made by the Seventh Finance Commission. Its stated objective was that the scheme of fiscal transfers should leave as many states as possible with a surplus on revenue account and that the bulk of fiscal transfers should be by way of tax shares and that grants-in-aid should have a residual role. Accordingly, it raised the states' share from the earlier 20 per cent to 40 per cent. It clarified that the divisible pool would include all Union excise duties by whatever name called but excluded additional excise duties levied in lieu of sales tax and cesses earmarked for special purpose and the additional duties of excise on certain textiles and textile articles which, under law, were not to be distributed among the States. The Eighth Commission maintained that position substantially but raised the states' share further to 45 per cent of the net proceeds of excise duties, other than electricity of which the entire proceeds would go to the states. The Ninth Finance Commission kept the share of the States in the divisible excises at the same 45 per cent.

Distribution of the Divisible Pool between the States

Let us next consider the second aspect of sharing the taxes on income under Article 270 and of excise duties under Article 272, namely, how the divisible pool is distributed between the states. As already mentioned, the Constitution gives no such directive nor did the Presidential orders appointing the successive Finance Commissions contain any such directive. Neverheless, one should note that it came to be recognised from the very beginning that the distribution should he progressive, in the sense that, it should be such as would reduce the inequalities between the resources of different states. For instance, the very First Finance Commission recommended that 'the principles of distribution of revenues between the states ... should attempt to lessen the inequalities between states' [Finance Commission, 1952, p. 88]. Let us first consider the distribution of the divisible pool of the Union taxes by the successive Finance Commissions.

Income Tax: The incorporation of an element of progressiveness in the distribution of the states' share of income tax was more hesitant and took some time. In fact, as we shall presently see, the share of excise duties was always distributed on such a principle and there was no good reason why the share of the income tax could not be distributed on the same principle. For instance, the First Finance Commission recommended that 20 percent of the states' share should be allocated on the basis of the 'contribution' of the state to the total Income Tax and 80 per cent on the basis of the population. The basis of 'contribution' is obviously inequitous, the richer states getting more; the basis of population merely allocates *pro rata* and, in a sense, is neutral. The Second Finance Commission improved the ratio from 20:80 to 10:90, but the Third and the Fourth Finance Commissions reverted to 20:80. The Fifth Finance Commission adopted 10:90. This ratio has been maintained by all subsequent Commissions including the Ninth Finance Commission.

The question of introducing an element of progressivity in the distribution of income tax was first raised in the Seventh Finance Commission but, in spite of a well argued minute of dissent by Prof. Raj Krishna, who was a member of the Commission, the principle was not accepted by the majority on the flimsy ground that, since the Constitution distinguished between the two taxes, the shares of the states as also the principles of their distribution could not be the same in the two cases. The Eighth Finance Commission, after considerable deliberation, agreed that the criteria for allocating income tax should be more progressive than they have so far been and suggested that only 10 per cent of states' share of the income tax should be allocated on the basis of the states' 'contribution' and the balance 90 per cent should be allocated on the same principles as those applied for allocating the major part of the states' share in the excise duties, namely, by giving weightage of 25 per cent to population. 25 per cent to the inverse of per capita income multiplied by the population, and 50 per cent to the distance of per capita income of a state from that of the state with the highest per capita income multiplied by the population of the state.

The Ninth Finance Commission improved upon this principle. It recommended the following basis for allocating the states' share of the income tax: (i) 10 per cent on the basis of the state's 'contribution'; (ii) 45 per cent on the basis of the distance of the per capita income of a state from that of the state with highest per capita income *multiplied* by the 1971 population of the state concerned; (iii)

22.5 per cent on the basis of the population of the state in 1971; (iv) 11.25 per cent on the basis of a composite index of backwardness, being a combination, with equal weight, of two indices, namely, population of scheduled castes and scheduled tribes, and the number of agricultural labourers as revealed in the 1981 Census; and (v) 11.25 percent inverse of the per capita income multiplied by the population of the state in 1971.

Excise Duties: As to the distribution of the states' share in the Union excise duties, the principle of progressivity was recognised from the very beginning and the successive Finance Commissions have been devising formulae to achieve presumably a greater extent of progressivity. For instance, the First Finance Commission (1952-53 to 1956-57) suggested that consumption of the taxed commodities could provide a suitable basis for allocating the divisible Union excise duties between the states but, in the absence of data on consumption, recommended population as the nearest measure of consumption. The Second Finance Commission felt (1957-58 to 1961-62) that, on the whole, it would be preferable to continue population as the sole basis of distribution, but recognised that its practical effect would be to place a few states in a more advantageous position and that therefore a small corrective in favour of the rest would be justified. Accordingly, it recommended that 90 per cent of the divisible Union excise duties should be allocated on the basis of population, while using the balance 10 per cent for 'adjustments'; it did not spell out how. But, it did explicitly recognise the need for progressivity.

As mentioned above, the Third Finance Commission (1962-63 to 1965-66), included in the divisible pool excise duties practically on all commodities, but reduced the states' share to 20 per cent. It recommended that this divisible pool should be allocated between states, on the basis of population. But, it also suggested that an attempt should be made to bring all states, as far as possible, to a comparable level of financial balance. For this purpose, the. Commission recommended that, a sum equal to 20 per cent of the net proceeds of Union excise duties on a long list of commodities, numbering 35, be distributed among the states according to a given schedule the basis of which was not explained; presumably, it was 'progressive'. The Commission is not explicitly clear on this point but presumably this was not additional to the 20 per cent of the divisible pool to be distributed on the basis of population.

The Fourth Finance Commission (1967-68 to 1968-69) look the view that while population should he the major factor determining allocation, relative economic and social backwardness should also be taken into account as indicated by (i) per capita gross value of agricultural production, (ii) per capita value added by manufacture, (iii) percentage of workers (as defined in the Census) to total population, (iv) percentage of enrolment in classes I to V to the population in age group 6-11, (v) population per hospital bed, (vi) percentage of rural population to total population, and (vii) percentage of Scheduled Castes and Tribes to the total population. It did not explain how it combined these several indicators of economic and social backwardness but recommended that 20 per cent of the divisible pool should be allocated on this basis while the remaining 80 per cent on the basis of population.

The Fifth Finance Commission (1969-70 to 1973-74) adopted more or less the same scheme of distribution, namely, 80per cent of the divisible pool in proportion to the population and 20 per cent to the states with relative economic and social backwardness. But it gave the latter distribution in a somewhat greater detail, namely, (a) two-thirds to the states with per capita income below the average per capita income of all the states in proportion to the shortfall, multiplied by the population of the state; (b) one-third on the basis of an integrated index of backwardness based on the following six criteria: (i) population of scheduled tribes, (ii) inverse of factory workers per lakh population. (iii) inverse of net irrigated area per cultivator, (iv) inverse of length of railways and surfaced roads per 100 sq. kms., (v) shortfall in number of school-going children as compared to the those of school-going age, and (vi) inverse of number of hospital beds per 1000 population. In the case of states where a criterion was less than one-third or more than three times the average for all the states, the same was brought up to one-third or brought down to three times as the case may be. With this 'moderation' all the criteria were combined with equal weight to obtain the integrated index of backwardness. Presumably, each criterion of backwardness was multiplied by the population of the state and then combined with equal weight, though this is not made clear. Doubts arise because the first criterion above was listed as (i) population of Scheduled Tribes; hopefully, it meant the proportion of the population of Scheduled Tribes in the total population. Incidentally, we may note that the drafting of this paragraph in the Report of the Commission [Finance Commission, 1969, p. 36] is unclear and clumsy.

The Sixth Finance Commission (1974-75 to 1978-79) recommended that 25, instead of only 20 per cent as recommended by the previous Commission, of the divisible pool should be allocated in proportion 10 a single criterion of backwardness, namely, the 'distance', that is, the difference between a state's per capita income and that of the state with the highest per capita income, which happened to be Punjab, multiplied by the population of the state. The remaining 75 percent of the divisible pool would be allocated on the basis of the population [Finance Commission, 1973, paras 16-17, p. 17].

The Seventh Finance Commission (1979-80 to 1983-84) recommended that the shares of the slates in the divisible pool of excise duties should be determined by giving equal weight of 25 per cent to (i) population, (ii) the inverse of the per capita State Domestic Product, (iii) the percentage of the poor measured by a method, which Prof Raj Krishna had evolved, and (iv) a formula of revenue equalisation which the Commission had worked out. The Commission was not sufficiently careful to note that when a number of criteria are used and added together, with or without equal or unequal weights, to determine states' share in the divisible pool, all the criteria must have the scale, namely, the population of the state. Among the four criteria mentioned above (i) population, of course, has the right scale. But (ii) and (iii), as they are mentioned above, have not the right scale unless each of them is multiplied by the population of the state. When (ii) the inverse of the per capita State Domestic Product is multiplied by the population, it becomes, what came to be called 'income adjusted population' (IATP). We presume that was done in the actual calculation. In that case, we may say that the Seventh Finance Commission was the first to use IATP as a criterion for distribution of the divisible pool of excise duties among the states. Similarly, (iii) the percentage of the poor, has to he multiplied by the population of the each state when it becomes the number of poor in the state. It is not as though the Commission did not know this; because in the revenue equalisation formula it worked out, it has taken into account the population factor. We suppose that the omission of the mention of the population factor was only through an oversight.

The revenue equalisation formula was worked out as follows: 'The per capita average of each state's own tax and non-tax revenue for 1975-76 and 1976-77, obtained from the accounts, were regressed on the average per capita income, excluding the five atypical states of Manipur, Meghalaya, Nagaland, Sikkim, and Tripura. This gave the estimated value of the per capita revenue of each state. The distance of the per capita thus estimated for each state From the maximum estimated per capita revenue among all the states, which was Punjab, was multiplied by the estimated population. ... For the atypical states, their own average revenue for the years 1975-76 and 1976-77 was adopted. The percentage of the product of the distance of the per capita revenue so estimated from that of Punjab and the population for each state in the total of these products for all the states gives the share of each state in the 25 percent of the divisible pool of the excise [Finance Commission, 1978, para 39, p. 87]. It will be noticed that this was similar to the 'distance' used by the Sixth Finance Commission except that, while the Sixth Finance Commission used a state's per capita income, the Seventh Finance Commission used a state's own tax and non-tax revenue estimated by a certain regression. Hence, what the Commission called the 'revenue equalisation formula', Prof. Raj Krishna, in his minute of dissent quite appropriately refers to as 'Revenue Distance' [Finance Commission 1978. p. 149]. This was apparently an improvement over the Sixth Finance Commission. Unfortunately, the 'estimation by regression' turned out to he nothing but a superficial statistical sophistication so that the Eighth Finance Commission had to go back to a state's per capita income to measure 'distance' as the Sixth Finance Commission had done.

The method of estimating the percentage of the poor evolved by Prof. Raj Krishna, and used by the Finance Commission and also by the Planning Commission, suffers from an elementary statistical error [Dandekar, 1999]. Besides this elementary but plain error, Prof. Raj Krishna, in his minute of dissent, is not sufficiently careful in the use of terms like 'poverty ratio' and 'poverty percentage'. For instance, the Commission says that 'we have decided that the shares of the states in the divisible pool of excise should be determined by giving equal weight to the population factor, the inverse of the per capita State Domestic Product, the *percentage* of the poor in each state which Prof. Raj Krishna has evolved for us, and a formula of revenue equalisation which we have worked out' [Finance Commission, 1978, p. 86]. Further, the Commission has set out the methodology and poverty *percentages* of each state in Appendix IV. 9. Briefly, it reads as follows: 'The *Poverty Percentage* is the percentage of the number of persons below the augmented poverty line in a state to the total number of persons below the augmented poverty line in all states' [Finance Commission, 1978, p. 213].

In spite of this clear and categorical statement in the majority Report of the Seventh Finance Commission, Prof. Raj Krishna, in describing the difference between the devolution formulae of the majority and his own, seems to use the two terms *poverty ratio* and *poverty percentage* synonymously while the two terms are quite different. Prof. Raj Krishna himself defines the term *poverty ratio* in a footnote to para 13 of his Note as 'the proportion of poor people in the total population of each state' [Finance Commission, 1978, p. 144] while the majority report uses and defines 'Poverty Percentage' as described above. Failure to distinguish the two persists. In para 18 of his Note, Prof. Raj Krishna says: 'Three of the criteria used in the main report and in this Note are common, viz., (i) Total Population, (ii) *Poverty Ratio'*, and (iii) The Inverse of State Income Per Capita (SDP)'. In para 25, on the same page of his Note, Prof. Raj Krishna says: 'my colleagues give equal weight to four criteria in their excise allocation formula as follows: (i) 25 per cent to Population, (ii) 25 per cent to Inverse of Per Capita Income, (iii) 25 per cent to Revenue Distance, and (iv) to *Poverty Percentage'*. Three lines below, he says 'I use only three of the above criteria' and gives his general formula in which the share of a state is made proportional to (Population) x (*Poverty Ratio*) x (Inverse of Per Capita Income). We would have connived at this confusion between *Poverty Ratio* and *Poverty Percentage* as pardonable, but that would offend Prof. Raj Krishna as we knew him.

Prof. Raj Krishna rightly says that his formula yields a more progressive allocation but, while giving the merits of his formula *vis-à-vis* the majority formula, to say that his formula minimises 'arbitrary weightage' is not fair. Both the formulae use 'equal weights'. The main difference between the two is, while the majority formula combines the chosen criteria, with equal weights, additively, Prof. Raj Krishna's formula combines them, with equal weights, multiplicatively; and that is why it is more progressive. To make the point clear, let us suppose that, besides population as the scale factor, there are only two factors, namely, poverty ratio and inverse of per capita income with equal weights. In the main report, the two are combined additively. In Prof. Raj Krishna's formula, the two criteria are combined multiplicatively and because the two are positively correlated, his formula becomes more progressive.

Prof. Raj Krishna objects to the use of 'revenue distance' as one of the criteria For the distribution of the divisible pool of the Union excise duties, on the ground that it results in disparity in the per capita surpluses which are unacceptably high [Finance Commission, 1978, p. 45]. This is a valid reason. Instead, he suggests that all states should have a minimum surplus of Rs 100 per capita and that, to ensure this, extra grants under Article 275 should be given to those states which would not have the minimum surplus even after devolution without the 'revenue distance' criterion; it would also reduce the per capita surplus disparity from (45:1) to (6:1). We have not done the calculation, but probably the disparity would be further reduced by raising the minimum from Rs 100 to, say, Rs 150. In fact, it seems that, by choosing an appropriate minimum, the disparity in per capita surplus could be altogether removed. In that sense, Prof. Raj Krishna's choice of a per capita minimum surplus of Rs 100 is not only purely subjective but also quite arbitrary.

The Eighth Finance Commission (1984-85 to 1988-89), commenting on the revenue equalisation formula, mentioned that the Government of Maharashtra had brought to its notice that 'with linear equation, when only one independent variable, namely, per capita income has been used that formula did not amount to anything different from allocating shares in the divisible excise duties to states based on the distance of the per capita income of the state from the highest per capita income of any state' [Finance Commission, 1984, para 6.35 p. 51], and, after some long-winded argument, chose 'the distance of the per capita income of the state from the highest per capita income of any state' instead of the 'revenue equalisation formula', of the previous Commission. In other words, it returned to the concept of 'distance' as used by the Sixth Finance Commission.

In recommending the distribution of the divisible pool of the states, being 45 per cent of the net proceeds of the excise duties, the Eighth Finance Commission made a change in its formal presentation which makes it non-comparable with the distribution, recommended by the previous commissions, as also by the Ninth Finance Commission which succeeded it. In justification of this arrangement, it says: 'The special arrangement that we are making to help the deficit states is to set aside a certain portion of the states' share of excise duties, which will be distributed among those states which have deficits on revenue account' [Finance Commission, 1984, para 6.44, p. 53]. This was 5 out of the 45 per cent of divisible pool of the states. It recommended that the remaining 40 per cent should be distributed on the basis of the following percentages: (i) 25 per cent on the basis of the 1971 population; (ii) 25 per cent on the basis of income adjusted total of the population (IATP), defined as 1971 population weighted by the inverse of the per capita income, that is, 1971 population divided by the per capita income; (iii) the remaining 50.0 per cent on the basis of distance of average per capita income from that of the state with the highest per capita income; (iv) the balance of 5.0 percent (out of 45.0 percent of the divisible excise pool) to be distributed among deficit states in proportion to their post-devolution deficits. Instead of recognising two components of 40 and 5 per cent, if the entire distribution was shown as percentages of the divisible pool of 45 per cent, as the Ninth Finance Commission did, it would appear as follows: (i) 22.22 per cent on the basis of the 1971 population; (ii) 22.22 per cent on the basis of income adjusted total of the population (IATP), (iii) 44.44 per cent on the basis of distance of average per capita income from that of the state with the highest per capita income; (iv) 11.11 per cent to the deficit states in proportion to their post-devolution deficits. This could be rounded off to (i) 22.5 per cent on the basis of the 1971 population; (ii) 22.5 per cent on the basis of income adjusted total of the population (IATP), (iii) 45 percent on the basis of distance of average per capita income from that of the, state with the highest per capita income; (iv) 10 per cent to the deficit states in proportion to their post-devolution deficits.

The Commission noted that the criterion 'distance of average per capita income from that of the state with the highest per capita income' would leave no share under this criterion to Punjab which happened to be the state with highest per capita income' as had happened in the distribution by the Sixth and Seventh Finance Commissions. This was obviously not fair considering the fact that the Eighth Finance Commission had raised the weightage given to this criterion from 25 percent of the Sixth and Seventh Finance Commissions to nearly 45 per cent. To correct this, the Commission worked out for Punjab, a 'notional distance factor equal to the distance of the per capita income of Punjab from that of the state which has the second highest per capita income, namely, Haryana. In other words, the income distances in the case of Punjab and Haryana have for this purpose, been treated as equal' [Finance Commission, 1984, para 6.42, p. 53] This is reasonable enough but could be made more progressive if, for all the states, the 'distance' was measured not from the actual but from the notional per capita income of Punjab.

The Ninth Finance Commission (1990-91 to 1994-95) kept the share of the states in the divisible excises at the same 45 per cent but made certain changes in its allocation which presumably would add to the progressivity of the devolution. The main change was to raise the share kept reserved for deficit states from about 10 per cent, kept by the Eighth Finance Commission, to 16.5 percent. As a consequence, the divisible pool of the excise duties was distributed between different states on the basis of the following percentages: (i) 25.0 per cent on the basis of the 1971 population; (ii) 12.5 per cent on the basis of income adjusted total of the population (TATP); (iii) 12.5 per cent on the basis of a composite index of backwardness, being a combination, with equal weight, of two indices, namely, population of scheduled castes and scheduled tribes, and the number of agricultural labourers as per the 1981 Census; (iv) 33.5 per cent on the basis of distance of per capita income from that of the state with the highest per capita income; (v) 16.5 per cent to deficit States in proportion to their post devolution deficits.

The Planning Commission

Prior to the Fourth Plan, plan assistance was based on states' needs and ability to implement the plan as judged by the Planning Commission. Moreover, it was mainly schematic in nature and came in the form of a string of conditional grants. It was in the Fourth Plan (1969-74), that the problem of imbalance in development as between states and the need to give plan grants taking cognizance of such imbalance was recognised: 'The problem of imbalance in development as between states is highly complex (1.38) .. To the extent that the deficiency of resources in a state is not due to defects of management, the allocation of Central assistance might help (1.39) Balanced regional development and dispersal of economic activity are closely interrelated. Growth and diversification of economic activity in an under-development area can take place only if the infrastructure required for this is provided in an adequate measure (1.40) ... Hence, after providing for the requirements of the states of Assam, Nagaland, and Jammu and Kashmir, Central assistance to the remaining states for the Fourth Plan will be distributed as follows: (i) 60 per cent on the basis of population; (ii) 10 per cent on the basis of their per capita income if below the national average; (iii) 10 per cent on the basis of tax effort in relation to per capita income; (iv) 10 per cent for allocation in proportion to the commitments in respect of major irrigation and power projects; and the remaining (v) 10 per cent for distribution among states to assist them to tackle special problems' [Planning Commission, 1970, Pp. 17-18]. As Prof. D. R. Gadgil was then the Deputy Chairman of the Planning Commission, the above formula of distribution among states came to be known as the Gadgil formula. In the Fifth Plan (1974-79), the distribution between states was done on the same Gadgil formula.

The Sixth Plan (1980-85) modified the Gadgil Formula as follows: (i) 60 per cent on the basis of population; (H) 20 per cent on the basis of their per capita income if below the national average; (iii) 10 percent on the basis of tax effort in relation to per capita income; and the remaining (iv) 10 per cent for special problems. It will be noticed that, in effect, the Gadgil formula was modified in only one respect: the share of 10 per cent in proportion to the commitments in respect of major irrigation and power projects was dropped and added to the share of states with per capita income below the national average. Moreover, the whole of the Central assistance to the 14 non-special category states, amounting to Rs 9,300 crore, was not based on the modified Gadgil formula. Only Rs 7,700 crore (82.80 per cent) were distributed according to the modified Gadgil formula while the remaining Rs 1,600 crore were distributed according to a new criterion, earlier mentioned, called the IATP devised by the Seventh Finance Commission. The Seventh and the Eighth Plans continued to use the modified Gadgil formula but gave up the IATP criterion. We have not been able to trace the term IATP explained in the Sixth Plan document. As mentioned above, the concept, though not the term, was first used by the Seventh Finance Commission. Evidently, for the Sixth Plan to use it, the concept was somewhere in the air.

To sum up, the transfers from the Centre to the states' revenue consist of 0) states' share of central taxes, and (ii) grants from the Finance Commission, the Planning Commission and other central agencies. In Table 7, we shall relate these to the own revenues of the states (col. 7).

Thus, over the years, the transfers from the Centre to the states have constituted an increasing proportion, from a mere 15.45 percent in 1950-51 to 66.18 per cent in 1991-92, of the states' own revenues. Moreover, as detailed above, a large part of these transfers have consciously been made increasingly more progressive, the poorer states getting more than the richer ones. Nevertheless, the disparities between the states have increased; in 1960-61, the highest per capita net state domestic product was 1.70 times the lowest. In 1990-91, the highest was 3.19 times the lowest.

The reason is that a large part of the transfers from the Centres to the states are not in the form of specific grants for specific items in which a state may he lagging behind as the First Finance Commission had suggested; by and large

Table 7. Total Transfers from the Government of India as a per cent of States' Own Revenues

(Rs Crore)

Year	States' Share of Central Taxes	Grants from Centre	Total Transfer	States' Total Revenue	States' Own Revenue (Cot. 5-4)	Col. 4 as per cent of Col. 6
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1950-51	53		53	396	343	15.45
1951-52	53	25	78	393	315	24.76
1952-53	73	29	102	432	330	30.91
1953-54	73	36	109	469	360	30.28
1954-55	72	44	116	500	384	30.21
1955-56	74	53	127	544	417	30.46
1956-57	78	44	122	598	476	25.63
1957-58	116	74	190	684	494	38.46
1958-59	151	82	233	765	532	43.80
1959-60	157	103	260	870	610	42.62
1960-61	169	122	291	1,012	721	40.36
1961-62	179	195	374	1,073	699	53.51
1962-63	224	209	433	1,284	851	50.88
1963-64	258	229	487	1,490	1,003	48.55
1964-65	258	270	528	1,635	1,107	47.70
1965-66	275	354	629	1,830	1,201	52.37
1966-67	347	402	749	2,112	1,363	54.95
1967-68	407	453	860	2,433	1,573	54.67
1968-69	487	494	981	2,817	1,836	53.43
1969-70	625	531	1,156	3,172	2,016	57.34
1970-71	756	566	1,322	3,371	2,049	64.52
1971-72	942	852	1,794	4,045	2,251	79.70
1972-73	1.061	926	1,987	4,912	2,925	67.93
1973-74	1,162	937	2,099	5,552	3,453	60.79
1974-75	1,229	1,022	2,251	6,432	4,181	53.84
1975-76	1,599	1,219	2,818	7,938	5,120	55.04
1976-77	1,680	1,505	3,185	9,037	5,852	54.43
1977-78	1,806	1,838	3,644	9,931	6,287	57.96
1978-79	1,953	2,473	4,426	11,647	7,221	61.29
1979-80	3,408	2,086	5,494	13,629	8,135	67.54

(contd.)

Table 7. *(Concld.)*

(Rs Crore)

Year	States' Share of Central Taxes	Grants from Centre	Total Transfer	States' Total Revenue	States' Own Revenue (Cot. 5-4)	Col. 4 as per cent of Col. 6
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1980-81	3,789	2,623	6,412	16,293	9,881	64.89
1981-82	4,260	2,726	6,986	18,455	11,469	60.91
1982-83	4,633	3,382	8,015	21,126	13,111	61.13
1983-84	4,296	3,671	7,967	21,501	13,534	58.87
1984-85	5,855	4,762	10,617	27,426	16,809	63.16
1985-86	7,260	6,323	13,583	33,424	19,841	68.46
1986-87	8,384	6,985	15,369	38,226	22,857	67.24
1987-88	9,726	8,377	18,103	44,160	26,057	69.47
1988-89	10,736	9,660	20,396	50,421	30,025	67.93
1989-90	13,097	8,505	21,602	56,535	34,933	61.84
1990-91	14,242	12,643	26,885	66,467	39,582	67.92
1991-92	16,848	15,226	32,074	80,536	48,462	66.18

Note: States' share of GOI tax revenue shown in col. 2 includes, besides income tax and Union excise duties, other minor taxes and duties, such as, estate duty.
Source: RBI, *Report on Currency and Finance,* 1993-94, Statement 106, and corresponding statements of previous issues.

the states are free to spend their revenues, including the transfers from the Centre, as they like. The states prefer this because of justifiable fear of excessive control of the Centre and will be reluctant to agree to specific grants for specific items.

This will completely change the role of the Planning Commission. But, once the principle is accepted, it should not be difficult to revise, the present role and devise an appropriate instrumentation for the new role. After all, in spite of the five year plan which the Planning Commission prepares, the annual plan is the operative part of planning and no wonder that its main concern is almost exclusively the budgetary resources of the government. Inevitably, much of the work done in the Planning Commission, in effect, is a duplication of the jobs of different ministries. The investment allocations made to different ministries coming out of an elaborate mathematical model ensuring inter-sectoral consistencies are adjusted to fit into the budgetary resources on a *pro rata* basis which has no scientific base. As a consequence, the annual plan is a 'compromise' formula between the several contending recipients; in other words, it is a political solution. The Planning Commission yields because, unlike the ministries, it is not directly involved in the day-to-day implementation of programmes and projects and the underlying policy making. In short, in spite of all the accumulated knowledge and information which, presumably, enables the Planning Commission to take a long and medium-term development perspective, it does not know enough of how the government functions from day-to-day [Gupta, 1989. Pp. 71-72, *suitably edited, hopefully, without distortion)*.

For the states to agree to specific grants for specific items and the concomitant Central control, what is needed is a body entrusted with the task of transfer of resources from the Centre to the states which will be under the control of the Inter-State Council envisaged in Article 263 of the Constitution so that it remains under the collective control of the states rather than that of the Central government. The appointment of its members should be approved by the Council and, in all matters relating to Centre-State financial and economic relations, the President should be guided by the Council and not by the Central Cabinet. For this purpose, a new body is not necessary. In fact, we should avoid creating a new body because the existence of several agencies, as at present, has prevented an integrated look at the totality of resources and the needs of the states and the Centre. 'Were the Planning Commission to be so constituted as to inspire the confidence of the states, the task of sharing of resources between the Centre and the states and as between states could safely he entrusted to such a body' [Gulati and George, 1988, p. 32]. Then, it will be advisable to merge the Finance Commission into the Planning Commission, being a permanent body (though not necessarily with permanent membership), as a single body charged with the allocation of resources from the Centre to the states a major purpose of which would be to reduce the disparities among the states. This implies that a major part of the transfers from the Centre to the states, the quantum of which should be decided by the Inter-State Council, should be in the form of specific grants-in-aid for items in which particular states are lagging behind.

In contrast, the several ministries may not have the knowledge and information sufficient to take a long or medium-term development perspective of the ,entire economy but they have enough administrative and technical expertise to project a five year programme of works and projects with well-defined priorities and sequencing so that, given the annual budget allocations, they can more easily and more meaningfully present a state-wise programme for a given year and update the programme for the next five years. The purpose of determining the priorities and sequencing and formulating a state-wise programme based on them is to reduce the disparities, in the particular subject, between the states. Of course, the disparities in all the subjects cannot be removed in one year or even in five years. But, as the First Finance Commission suggested, a beginning has to be made in certain crucial areas, such as, primary education, health and family welfare, and roads. The concerned ministries/departments of the Central government should obtain from the corresponding departments of the state governments the relevant information in the form of well chosen indicators of development in the subject and arrange the states in a descending order of the indicator. The Planning Commission should then discuss the matter with each state government and ask which one, two, or three subjects it would like to upgrade its services in the given year and approximate cost of doing the same. The manner in which the service(s) may be upgraded should be left to the state government on condition that the upgrading is reflected in the chosen indicator. To ensure that the state governments do not throw the entire burden of upgradation on the Planning Commission, the specific grant-in-aid should made on condition that the present proportion of the state's revenue expenditure being spent on the particular service shall be maintained. These are matters of detail and any differences of opinion between the Planning Commission and a state government should be referred to the Inter-State Council.

Thus, so far as the ministries/departments of the Central government are concerned, planning should largely consist of putting together their updated state-wise programmes for the next five years in the manner of a Rolling Plan. To this should be appended (i) the annual plans after they are incorporated in the annual budgets of the Centre and the states, (ii) a transparent review of the implementation of the previous annual plan to be prepared jointly by the concerned ministry and the concerned department of the state government. The Planning Commission should discuss it with the concerned ministry to ensure that shortcomings and delays are not glossed over, and (iii) a note on the bureaucratic practices and procedures, both in the Centre and the states, which delay plan implementation, with specific suggestions, in consultation with the concerned parties, as to how these may be improved. Administrative Reforms Commissions in the past have remained more or less confined to the surface of the administration and have rarely looked into the bottom. This cannot be done by Administrative Reforms Commissions appointed once in a while. This has to be a continuing process and should be a major responsibility of the Planning Commission in the future.

REGIONAL IMBALANCE IN ECONOMIC DEVELOPMENT

Disparities in the development of different parts or regions of a country exist in almost all countries of the world, developing as well as developed, and it is increasingly recognized that these must be narrowed down. In the context of India, the National Committee on the Development of Backward Areas in its Report on General issues Relating to Backward Area Development (November, 1981) notes: 'in a large country like India, disparities in levels of development of different parts are inevitable. Regions differ in their history, their resource endowment and environment, the level of infrastructure development and the attitude of the inhabitants to development opportunities' [Sivaraman, 1981, para 2.1]. And further: 'In our country, a very large number of people believe that the area they live and work in is, in some more or less general way, economically backward. Many of them also feel that their requirements have been neglected in the process of planning. This belief has found expression in the political system and manifests itself in a large number of claims for special treatment put forward by official and non-official organisations' [Sivaraman, 1981, para 4.1]. This is also true of Maharashtra and, in August 1983, the State Government appointed a High Level Fact Finding Committee of Experts to undertake an objective and in-depth study of the problem of regional imbalance in the State. I happened to be its Chairman. Soon after the Committee submitted its report (April, 1984), the institute of Economic Growth invited me to deliver one of their Silver Jubilee Lectures.

I thought I should take the opportunity to explain the Maharashtra Committee's approach to the problem because, though it was focussed and confined to the situation in Maharashtra, there was much in it which, it seemed to me, might be of wider interest and relevance. The Sarkaria Commission makes a polite reference to this Committee advising the state governments that 'they should commission from time to time objective studies somewhat on the lines of the recent Report of the Fact Finding Committee on Regional Imbalances in Maharashtra which we have found to be quite revealing and useful' [Sarkaria, 1988, Part I, p. 385]. In the following is the text of my lecture delivered in May, 1984. [Institute of Economic Growth, Development Perspectives, Silver Jubilee Lectures 1984, Pp. 156-170].

Though the first two Five Year Plans of the Government of India made reference to problems of regional development, it was in the Third Five Year Plan (1961-66) that a separate chapter was devoted to Balanced Regional Development (Chapter IX) suggesting that 'For assessing levels of development in different regions, indicators of production, investment, unemployment, electricity consumption, irrigated area, value of output by commodity producing sectors, level of consumption expenditure, road mileage, primary and secondary education and occupational distribution of population are useful' [Planning Commission, 1962, para 23]. Further, 'As a comprehensive indicator of economic progress, estimates of State income are of considerable interest in studies of development in different States and regions. ... There are complex questions connected with concepts, definitions, and techniques of estimating 'State' and 'Regional' income and these have a bearing on the practical value of various estimates. The State income may be considered either as the income originating within the boundaries of a State or as income accruing to its residents. The first concept corresponds to the 'domestic product' for the country as a whole, and the second to the national income. For a comparative study of the level of industrial and economic development among States or regions, it is sufficient to have an estimate of income originating within the State or region. The estimates of income accruing to a State, on the other hand, may serve as a broad measure of the economic welfare of the resident of the State as a whole' [Planning Commission, 1962, para 24].

In 1968, the Government of India appointed a Working Group on Identification of Backward Areas - commonly known as the Pande Committee [Pande, 1968]. This was mainly in the context of providing incentives for industrial development. The Committee recommended the following criteria for identifying backward districts: (i) distance from larger cities and large industrial projects; (ii) per capita income; (iii) population engaged in secondary and tertiary activities; (iv) factory employment; (v) non/under-utilisation of economic and natural resources. Subsequently, the Planning Commission, in consultation with the National Development Council, recommended the following criteria: (i) Per capita foodgrains/ commercial crops production; (ii) Proportion of agricultural workers; (iii) Per capita industrial output (gross); (iv) Factory employment or alternatively employment in secondary and tertiary activities; (v) Per capita consumption of electricity; (vi) Length of surfaced roads and railway mileage in relation to population. Incidentally, both Pande Committee and the Planning Commission had suggested that, for incentives for industrial development to be given, the districts should have a certain minimum level of infrastructural facilities.

The National Committee on Development of Backward Areas (NCDBA) in its Report on industrial Dispersal, refers to a Seminar on Industrial Development organized by the Industrial Development Bank of India in May 1980 and notes what the entrepreneurs said they wanted for locating their industries in any area: 'The main supports the entrepreneurs want for location of their industries are: (i) an existing infrastructure which gives ready electricity, water supply, commercial facilities, and communication facilities with the main industrial centres; (ii) an existing industrial ethos which has brought into the population the necessary discipline in attendance and work schedules to suit modern industrial requirements; (iii) approach to the main marketing centres within reasonable distance so as to help in the disposal of the products: (iv) a reasonable raw material supply close by where industry depends on local raw materials; (v) a reasonable footloose industrial labour which can solve problems of industrial absenteeism; (vi) social amenities of a reasonable kind, like educational institutions, medical facilities and the like, so as to attract the type of technical and managerial personnel to such centres on a reasonable basis; (vii) housing for the labour and supervisory personnel at reasonable rates of rent;, and (viii) services for the high income personnel who are a necessary part of all industrial complexes. The entrepreneurs will move towards locations where they can find at least a minimum amount of such facilities' [Sivaraman, 1981(a), para 7.4]. We may note that among the items listed above, (i), (iii), (vi) and (viii) are clearly physical and social infrastructural facilities which may he regarded as pre-requisites for industrial location; (ii), (v) and (vii) cannot be called pre-requisites; they constitute the industrial environment which industries create; (iv) is a pre-requisite for industries which are based on natural resources.

The problem of identification and classification of backward areas has been examined more methodically by the Chakravarty Committee on Backward Areas. Its Draft Report is extracted in the NCDBA's Report on General issues Relating to Backward Areas Development [Sivaraman. 1981, Annex 4.1]. The Committee chose the following fourteen indicators: (1) Density of population per sq. km. of area; (2) Percentage of agricultural workers to total working force:

(3) Gross value of output of foodgrains per head of rural population; (4) Gross value of output of non-foodgrains per head of rural population; (5) Gross value of output of all crops per head of rural population; (6) Percentage of total establishments using electricity to total number of establishments (manufacturing and repair); (7) Percentage of household establishments using electricity to total household establishments; (8) Percentage of non-household establishments using electricity to total non-household establishments; (9) Number of workers in registered factories per lakh of population; (10) Length of surfaced roads per 100 sq. kms. of area; (11) Length of surfaced roads per lakh of population; (12) Percentage of male literates to male population; (13) Percentage of female literates to female population; and (14) Percentage of total literates to total population.

The choice of indicators inevitably depends upon the availability of data. Often, there is much overlap among the chosen indicators. For instance, among the fourteen indicators chosen by the Chakravarty Committee, three relate to consumption of electricity and three to literacy. Having chosen a large number of indicators indicating levels of development in fields, some closely related, others not so closely related, these are combined into a single index of what might be called an index of overall development. This involves two steps. First, to convert all the indicators to a common base because one cannot combine rupees, miles, numbers and percentages. Two alternative methods are normally used. One is to rank-order all the units, say districts, in descending or ascending order by each indicator. Thus, districts may be rank-ordered according to the density of population per sq. km. and given ranks say from I to 300. This is done for each indicator. The other alternative is to convert all indicators to corresponding indices with a common base as 100. Thus, the density of population in a district is expressed as percentage of the average overall density as 100. This is done for all the indicators. Both methods reduce the several, indicators to a common base so that they may be combined.

It should be noted that the two methods judge the disparities very differently. The rank method is particularly arbitrary. For instance, according to the 1981 Census, the literacy rate was highest in Nagpur (excluding Greater Bombay) being 54.56 per cent. The next two districts in rank order were Pune (54.03 per cent) and Amravati (51.82 per cent). The difference between the literacy rates in Nagpur and Pune was 0.53 percentage points; between Pune and Amravati, the difference was 2.21 percentage points.

But the difference in ranks was one between Nagpur and Pune and also one between Pune and Amravati. What is worse, the difference between the ranks of Pune and Amravati was one because there was no district with literacy rate between the two. If, for instance, literacy rate of Wardha was between that of Pune and Amravati, the rank difference between Pune and Amravati would be two and not one though the literacy rates of Pune, and Amravati would have remained as they were. From this standpoint, converting indicators to indices is more satisfactory. The arbitrary element in that procedure is the choice of the base, as for instance the overall average. If one chose another base, such as a norm, a target, or the maximum, and call it 100, the disparities in districts as judged by the index would change too.

Having converted the several indicators to a common base either by rank ordering or indexing, the next step is to combine them into a single index of what might be called the index of overall development. The chief problem in this is to decide on how much weightage to give to different indicators: How much weight to attach to literacy compared to electricity or road length? Or for that matter, how much weight to attach to male literacy compared to female literacy? Or, again, how much weight to attach to road length per sq. km. compared to road length per lakh population. As the National Committee on the Development of Backward Areas observes: ‘Since the choice of indicators does not necessarily reflect a prior analysis of relevant factors, there is as yet no acceptable method of aggregation. In many cases, all the indicators are given equal weight on the principle of ignorance. With this procedure, some variable which is over-represented in the set because data are easily available, (e.g., literacy) automatically gets a higher weight’ [Sivaraman, 1981, para 4.17].

In order to construct a composite index, Chakravarty Committee also gave equal weight to all the indicators. In the Ranking Method, the individual ranks of the districts by the several indicators were simply added to give a total rank for the district. Then, taking the medium value as the cut-off point, all districts which had a value below the medium value were classified as backward. By this method, 164 districts (out of a total of 326 districts taken for analysis) got classified as backward areas. In the Index Method also, the aggregate index for a district was obtained by taking a simple average of its indices corresponding to the several indicators. Then, all districts with index below 100 were taken as backward. 206 districts thus got classified as backward.

There is a third method of aggregating a number of indicators into a single indicator. It is called the Method of Principal Component Analysis. The National Committee on the Development of Backward Areas makes the following comment on this method: 'Roughly speaking, the method of principal component analysis can be used to reduce one set of indicators to a smaller number of indicators by taking into account the inter-correlations amongst the indicators in the original set. The method is useful if any one of the new set of indicators (a) explains a substantial proportion of the variance, and (b) has the expected signs on the weights attached to each of the original indicators. There is no guarantee that this will always be the case' [Sivaraman, 198l, para 4.18].

The Chakravarty Committee has used the Method of Principal Component Analysis. It was found that 83.02 per cent of the total variation of the fourteen variables could be described by three basic components: 45.04 per cent by the first, 24.21 per cent by the second, and 13.77 per cent by the third component. Judging by the signs on the weights attached to each of the original indicators, the Committee chose to call the first component, the Index of Backwardness; the second component, the Index of Rural Development; and the third component the Index of Industrial Development. The districts were classified on the basis of only the first component which accounted for only 45 per cent of the variation of the set of fourteen indicators chosen. Out of the 326 districts taken for analysis 181 were classified as backward.

Thus, the Chakravarty Committee made use of three methods for aggregating the fourteen indicators it initially chose. The Ranking Method classified 164 districts as backward; the Index Method classified 206 districts as backward; the Principal Component Analysis classified 181 districts as backward. Of these, 155 districts were classified as backward by all the three methods and the Committee thought that they constituted 'the hard core of backward areas in the country'. This is rather arbitrary. The three methods are based on the same set of indicators and the methods differ only in the manner in which the several indicators are aggregated to give a single indicator. Naturally, a number of districts are classified as backward by all the methods. But there is little justification to call them the hard core of backward areas. Incidentally, we may note that the simple ranking method identified 164 districts, which is half of the districts considered, as backward and of these 155 were common to the other two methods. Hence, as a single method of combining the several indicators, at any rate in the present case, the simple ranking method appears to be adequate.

From the operational standpoint, the most important criticism made by the National Committee on the Development of Backward Areas (NCDBA) of a composite index of backwardness, howsoever arrived at, is that it 'does not classify districts into problem categories and, in fact, further analysis is required in order to do this' [Sivaraman, 1981, para 4.20]. Hence, the NCDBA asks whether, rather than using a composite index obtained by combining a number of indicators, one could use simple measures like the percentage of population below the poverty line or the rate of unemployment or the value of the domestic product per capita. The Committee does not find these measures satisfactory. It says: Poverty and unemployment may be manifestations of backwardness but are certainly not causative factors' [Sivaraman, 1981, para 4.22]. With regard to estimates of domestic product at district/block level, some rudimentary calculations are possible. However, the usefulness of such income estimates is open to question.

The income generated in an area is not the same as the income accruing. At the block or district level the differences between these two concepts can be quite substantial. For instance, a block of a district in which a very large industrial enterprise is situated will show a high level of income from manufacturing. But a substantial proportion of this income may accrue to people outside the block/district in the form of profits or even wages. Apart from this, there are also some difficulties in defining clearly the income generated within a district from activities such as rail transport, power distribution, etc. Even simple measures such as population below the poverty line, or the rate of unemployment, or the per capita domestic product, are not usually recommended to be used singly as indicators of development. If they are to be used together, the problem of combining them in a composite index arises. Further, these sample measures, whether used singly or combined into a composite index, do not classify the districts into what the NCDBA calls the problem categories.

The NCDBA also asks whether 'instead of using an overall index, it may be easier to define sectoral indices to identify backwardness with respect to specific sectors of development, e.g., agricultural backwardness, industrial backwardness, educational backwardness, etc.,' and observes: 'Such indices may be of use in the monitoring of regional inequalities at the sectoral level. In particular, the concept of industrial backwardness may have some validity. But as a general answer to the problem of identifying backward areas, the sectoral index approach is not very promising' [Sivaraman, 1981, para 4:24].

Thus, the NCDBA does not approve using an overall index to identify backward areas. Instead it recommends that the following problem areas should be recognised as backward: (i) Chronically drought-prone areas; (ii) Drought areas; (iii) Tribal areas; (iv) Hill areas; (v) Chronically flood-affected areas; and (vi) Coastal areas affected by salinity. The Committee views these as six types of fundamental backwardness and recognises that an area may suffer from the handicaps of more than one type of fundamental backwardness. Besides these six types of fundamental backwardness, the NCDBA recognises two other handicaps: One is the prevalence of feudal elements in production relations and social structure. The second is the lack of administrative presence. The first requires fundamental restructuring of society. Regarding the second, the NCDBA recognises the gravity of the problem but would not treat administrative backwardness as another type of backwardness. It says: 'To begin with, administrative backwardness is not readily measured in any objective manner. The absence of institutions and the number of vacant posts can be quantified but the poor quality of personnel cannot be reduced to any index. Secondly, the answer to this problem lies in administrative action and not in any special area development programme. Finally, many of the areas suffering from administrative deficiencies are, in fact, the areas of fundamental backwardness listed earlier' [Sivaraman, 1981, para 4.38].

The NCDBA's reluctance to use a single indicator, composite or otherwise, to identify backward areas or districts is understandable. But it seems that the NCDBA is going to the other extreme in setting aside all quantitative data and instead identifying backward areas or districts on the basis of what it calls types of fundamental backwardness. In fact, in examining regional imbalance in development and suggesting remedial measures, it does not seem either essential or relevant to classify areas or districts into two classes called backward and non-backward. The main purpose should be, what the NCDBA calls, 'to monitor regional inequalities' and this, as the NCDBA points out, has to be done at 'sectoral level'. Even in relation to a sector, the purpose should not be to construct indicators to identify broad sectoral backwardness, such as, agricultural backwardness, industrial backwardness, educational backwardness, etc. What is needed is to examine disparities in specific sectors of development and measure the backlog of the areas or districts lagging behind in each sector in much greater detail, so that the disparities are identified in operationally meaningful terms and remedial action initiated.

This is how the Maharashtra Fact Finding Committee (FFC) on Regional Imbalance approaches the problem. We may illustrate its approach by reference to Road Development. As mentioned earlier, road length per 100 sq. kms. and road length per lakh population are often used as indicators of road development. They are not quite satisfactory and sometimes give even contradictory indications because neither area nor population by itself provides an adequate basis for determining the road requirements of a region or a district. Sometimes, the road requirement of a region or a district is sought to be determined by the level of its general development. For instance, the Nagpur Road Plan (1943) was based on the assumptions (i) in agriculturally developed areas no village should be more than Smiles from a Main road and more than 5 miles from any Other road, and (ii) in agriculturally less developed areas, no village should be more than 20 miles from a Main road and more than 5 miles from any Other road. The 1961-81 Road Plan distinguished areas into three categories, developed, semi-developed, and under-developed, and sought to give more road length in developed than in semi-developed areas and underdeveloped areas. Road plans based on such assumptions would obviously increase the regional disparities in development and hence their norms would not provide a legitimate basis for judging back wardness in road development. What is needed are norms of road requirements which are independent of the present level of development of an area and which takes into account the distribution of the population over the area in habitations of various sizes such as villages and towns.

With this in view, the Maharashtra FFC on Regional Imbalance begins by defining the functions of a roads system distinguished into two categories, namely, the Main Roads system and the Other Roads system. The Main Roads system comprises the National Highways, State Highways, and Major District Roads and its function is to connect a district town to the district towns of adjoining districts and, within the district, to connect the tehsil towns mutually and to the district town. Fortunately, the Main Roads system in Maharashtra already met these requirements though the connections were not all of the desired standard and/or via the shortest routes. Hence, as minimum requirements, the Committee suggested that (i) all roads (via shortest routes) connecting district towns, and tehsil towns to the district town should be fully asphalted with single-lane carriageway complete with bridges, so that they are all-weather roads; (ii) the roads connecting tehsil towns mutually (*via* shortest routes) should also be all-weather roads but they may have only water bound macadum (w.b.m.) surface.

With these specifications, the Committee proceeds to work out the cost of bringing the Main Roads system in each district to the desired level. The total cost estimated at 1982 prices amounted to Rs 245 crore and which was shown districtwise. To ensure that work proceeded in a manner so that disparities between districts were reduced at every stage, the work was split up into nine priority categories to be taken up in that order as far as possible. For instance, the first priority was to connect a district place to all adjoining district places by asphalt surfaced roads; the second priority was to construct missing cross drainage works, minor and major bridges on all the roads, etc. The last and the ninth priority was to provide high level minor/major bridges in the place of existing submersible bridges/causeways on roads connecting two tehsils towns. Costs of works in each priority category was worked out districtwise. This makes the measure of disparities in road development operationally meaningful and amenable to remedial action.

As to the Other Roads system, comprising Other District Roads and Village Roads, its primary function is to connect the villages mutually and to the Main Roads system. The Committee suggested that these roads too should have w.b.m. surface; they may not be fully bridged but should be provided with culverts on small streams and causeways at minor river crossings. But here the Committee did not work the cost of bringing the Other Roads system in each district to these specifications. It took an intermediate position. It asked what the average level of development was, in this respect, in the State as a whole. For instance, in 1982, 50.22 per cent of all villages in the State were so connected. In comparison, only 34.98 per cent of the villages in Pune district were so connected. Clearly, Pune district lagged behind in the matter of development of the Other Roads system and one could work out the cost of bringing it to the State average level. But the Committee recognised that, as an indicator of development of the Other Roads system, percentage of villages connected to the Main Roads system discriminated against districts with many small villages.

For instance, in Raigad district 52.91 per cent of the villages were connected to the Main Roads system which was above the State average of 50.22 per cent. But, in terms of the population, only 62.31 per cent of the rural population in Raigad district was connected to the Main Roads system compared with the State average of 68.35 per cent. Thus, on the basis of percentage of villages connected to the Main Roads system, Raigad district would appear as ahead of the average development of the Other Roads system in the State; but, on the basis of the percentage of rural population so connected it would appear as lagging behind the average development in the State. Hence, one must choose between the two indicators. The Committee chose percentage of rural population so connected to the Main Road system as the more appropriate indicator of development of the Other Roads system. Judged by this indicator, a number of districts were seen to lag behind the State average. The Committee worked out the cost of bringing each such district to the State average as then obtaining. The Committee called this the backlog of the district in the development of the Other Roads system. The backlog of all the districts so lagging behind added up to Rs 320 crore.

The difference between the approaches adopted in the case of the Main Roads system and the Other Roads system may be noted. In the case of the Main Roads system the situation in different districts was compared with certain absolute norms set. In the case of the Other Roads system, the situation in different districts was compared with the average development in the State. In the former case, the Committee examined underdevelopment in relation to certain absolute norms. In the latter case, it examined disparities in development in relation to the actual average development in the State. For obvious reasons, the Committee could not apply the latter approach to the Main Roads systems. But, barring such exceptions, the latter was the Committee's general approach. The Committee was concerned, not with underdevelopment in relation to an absolute norm of development but, with disparities in development among districts. We may take another illustration, namely, education. Note that the Committee chose to examine the situation specifically in education and not generally in literacy. In education, it considered General Education and Technical Education separately and a breakup of General Education into Primary, Secondary, pre-University and University, and Adult Education. The Committee examined these categories separately and determined the backlog of the districts lagging behind the average level of development in the State. For instance, consider Primary Education.

There can be many causes underlying lack of development in primary education, such as, shortage of schools, shortage of teachers, shortage of trained teachers, and too many single-teacher schools. Hence, there were several possible indicators to judge the development of primary education. The Committee considered six indicators. They were: (i) Number of primary schools per lakh of population; (ii) Enrolment in primary schools per lakh of population; (iii) Number of teachers in primary schools per lakh of population; (iv) Percentage of trained teachers to all teachers in primary schools; (v) Percentage of single-teacher schools to all primary schools; and (vi) percentage of enrolment in single-teacher schools to enrolment in all primary schools. The Committee worked out the lag of each district in each of these items if it was found lagging behind the State average. For instance, in Thane district, the lag consisted of 602 schools, 61,137 students, 2,405 teachers, 2,648 trained teachers and 226 too many single-teacher schools involving 11,525 too many students, in such schools. In Parbhani district, the lag consisted of 126 schools, 79,020 students, 22,431 teachers, 2,715 trained teachers, and 264 too many single-teacher schools involving 18,224 too many students in such schools.

Of course, some of these items were related. For instance, much of the lag in the number of teachers might be removed while removing the lag in the number of schools and reducing the number of single-teacher schools. But this was not necessarily so. For instance, in Aurangabad, Beed and Nanded districts, there was no lag in the number of schools, but there was a lag in the number of teachers. There were too many single-teacher schools in these districts and reducing their number might remove part of the lag in the number of teachers. Lag in the number of trained teachers was an independent item and called for independent action. The situation in each district needed to be examined in detail before suggesting remedial action. In the absence of necessary detail, the Committee chose the number of primary school teachers per lakh of population as operationally the most meaningful indicator and used it as the basis for estimating the cost of bringing up, to the State average, the districts lagging behind. The State average was 364.5 primary school teachers per lakh of population. To bring all the lagging districts to this level needed 12,853 additional teachers. With teachers come all the other necessities and incidentals; the total cost was estimated at Rs 10,000 per teacher which was not the cost of the teacher alone but the cost of primary education per teacher. On this basis, the backlog of all the districts lagging behind in primary education was estimated at Rs 12.85 crore. Of course, this was worked out district by district.

This is the essence of the approach of the Maharashtra FFC on Regional Imbalance. The FFC examined a total of 27 different items of development in this manner and worked out the backlog of each district, if any, in each case. These were: Main Roads, Other Roads, Irrigation, Village Electrification, Energising of Agricultural Pump-sets, Primary Education, Secondary Education, Pre-University and University Education, Adult Education, Industrial Training Institutes, Technical High Schools/Centres, Technical Training in Higher Secondary Schools, Vocational Courses. Polytechnics, Primary Health Sub-Centres, Rural/Cottage Hospitals, Hospital Beds, Water Supply to Problem Villages, Piped Water Supply to Problem-Villages, Urban Water Supply, Land Development by Command Areas Development Authorities (CADA), Land Development in non-CADA Areas, Contour Bunding, Terracing, Nala Bunding, Drainage Development-cum-Horticultural Development, and Veterinary Institutes. These items covered a little over 40 per cent of the approved outlay in the Annual Plan (1983-84) of the State. The Committee recommended that more items should be added to this list provided the outlay on them could be broken up districtwise.

Having thus assessed the backlog, item by item or sector by sector, the backlog of each district was aggregated. For the items examined, the total backlog for all the districts amounted to Rs 3,186.78 crore which incidentally was a little more than twice the annual plan outlay for 1983-84. It might be noted that none of the 25 districts was found lagging behind in all the items examined and there was no district which did not lag behind in any of the items; every district was found lagging behind in one or more items. Hence, the backlog of a district aggregated over all the items examined and divided by its population may be considered a measure of indicator of its backwardness. An advantage of this measure is that it gives precisely the items in which a district is lagging behind, it suggests remedial action in operational terms and gives an estimate of its financial cost.

After assessing the aggregate backlog of each district, the FEC proceeded to examine how the process of removing the backlog might be initiated within the then existing framework of Planning and Development in the State. There prevailed a general opinion that additional central assistance should be available for this purpose. There were indications in the Sixth Plan in support. For instance: 'Central policies with respect to resource transfers will need to be suitably tailored to the benefit of backward regions and broadly in relation to the effort made by the states in this regard. The IATP formula introduced in 1979 and the doubling of the segment for backward States in the Gadgil Formula for allocation of Central assistance for State Plans illustrate the effort made in recent years to modify the distribution of resources in favour of the backward States. ... There are however, obvious limits to the role of Central assistance in the promotion of backward areas and reduction of regional imbalances in development'. [Planning Commission, 1981, p. 87]. This is crucial. It calls for a commitment that not only any additional central assistance that might become available but the entire resources at the disposal of the Slate would he directed to reducing the disparities in development within the State. In particular, the effort of the State in this direction would not depend upon and would not be limited to any additional central assistance forthcoming.

Hence, for purposes of removal of backlog, the FEC took the total resources as given. Also, it did not make any recommendations for re-allocation of available funds between sectors; for instance, it did not suggest larger allocation to sectors in which the regional disparities were greater. This was because the requirements of sectoral balance were equally important and must be independently determined. Further, to avoid defusing the focus on the problem of regional disparities, the FEC did not examine present policies and programmes in the several sectors and suggest any changes in them. All this is important because every conceivable device has been used to get around the problem of regional disparities. Working within a given total of development funds, its sectoral allocation, and policies, and programmes in the several sectors and focusing attention on the regional disparities and backlog, has the advantage that action can be initiated without delay to remove the backlog.

It is obvious that, within the limits of available funds, if a specific backlog is to be removed or reduced as rapidly as possible, the entire approved outlay on the specific sector/ sub-sector/ scheme/ programme must be expended in the districts which have a backlog in the corresponding subject. There are two qualifications. These arise from the need to make some provision for (a) completing certain on-going works/ projects not relevant to removal of specific backlog, and (b) meeting the needs of natural growth. In this matter, presumably, completion of the on-going works/ projects which would help removal of specific backlog would naturally receive priority. However, some provision would be needed for completing some of the on-going works/ projects not so relevant to removal of the specific backlog. Among the specific sectors, etc., covered by the FEC, Roads and Irrigation had a large number of on-going works many of which would be located in the non-backlog districts/ areas or would not be otherwise relevant to removal of the specific backlog. The situation presents a dilemma. On the one hand, if one takes the otherwise reasonable view that the on-going or incomplete works should first be completed before undertaking any new ones, the process of reducing the present backlog in the lagging districts may, in many cases, be postponed by several years and the completing of the on-going works first may in fact enhance the present disparities. On the other hand, if one takes the otherwise necessary view that no more development in the non-backlog district should be allowed until the present backlog in the districts lagging behind was removed, all the expenditure already incurred on some of the on-going works might be wasted.

Hence, one must take a balanced view of the situation. Though some provision has to be made for completing the on-going works, one must, of necessity, be highly selective in deciding which on-going works to complete and in which order. In general, the choice will have to be made on the basis of the stage at which a given work remains incomplete. A scrutiny of the so-called on-going works will show that, in many cases, no more than a token beginning has been made. These should be sorted out and all such works, not relevant to removal of specific backlog, should be declared postponed for the duration of the current plan so that their claim as on-going works is not pressed in each successive annual plans. On the other hand, in some cases, work would have progressed too far for its completion to be postponed. These may be completed within the small provision that one must make for the purpose.

The second ground on which some provision has lobe made, not related to removal of specific backlog, is the needs of natural growth. These are large in the social services such as education and health; even to maintain the present level of these services, they must expand in proportion 10 population or say at the rate of 2 per cent per annum. We are again faced with a dilemma. The needs of natural growth are very large, in some sectors such as education, so much so that, if these were to be fully met, almost the entire plan funds would be committed to this purpose and little would be left to remove the backlog in the lagging districts. On the other hand, if the needs of the natural growth were not fully met, the level of services now reached would not be maintained. The conclusion is inescapable. If the backlog of the districts lagging behind is to be removed or reduced, it may not be possible to maintain the present level of some of the services reached in some of the advanced districts.

On a balance of considerations, the FFC suggested that 15 per cent of the available funds should be reserved for (a) completing some of the on-going works/projects not relevant to removal of specific backlog, and (b) to meet the needs of natural growth and emphasized that this should be considered the maximum allowable on this account. The FPC warned that any larger diversion of funds for these purposes would seriously retard the process of removing or reducing the present disparities. It recommended that the remaining 85 per cent of the available funds, item by item, should be given only to the districts with a backlog, in proportion to the backlog in the particular item. This implies a certain acceleration of the pace of development in the districts lagging behind and, to that extent, a certain slowing down of the pace of development in the districts which are already ahead. There appears reluctance to admit this implication of a policy and a programme of reducing the prevailing regional disparities. It is important that it is recognised and stated explicitly.

It is equally important to recognize that there cannot be any time-bound programme for removing the present disparities. In each sector, the time required to bring up the lagging areas to the present State average will depend upon the sectoral allocation and the size of the backlog. The concept of lifting the areas below the State average up to the State average is not a programme to be completed in a given time, but a process which continues. As the areas below the average begin to be lifted to the present State average, the State average also rises and some areas, which until now were above the average, might fall below the new average. The process continues.

Speaking of economic development, one often vaguely talks of raising the average. But the average may be raised either by lifting the top or by lifting the bottom. These are two alternative strategies of development. The first is often chosen on grounds that it raises the average faster. It may do so. But in the process, the distance between the top and the bottom increases to the point of becoming insufferable. Even in purely economic terms, existence of large disparities within an economy inevitably limits the possibilities of overall development and growth. The other alternative, lifting the bottom, may appear slow in raising the average, but the process continuously widens these possibilities by broadening the base of development and growth. The problem of regional disparities has been with us for far too long. In approaching it with the strategy outlined by the Maharashtra Fact Finding Committee on Regional Imbalance in Maharashtra, namely, development by lifting the bottom, there is a chance to make a new beginning.

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SECOND REPORT ON THE

POONA SCHEDULES OF

THE NATIONAL SAMPLE SURVEY (1950-51)

By V. M. DANDEKAR

GOKHALE INSTITUTE OF POLITICS AND ECONOMICS Publication No. 29.

FOREWORD

The foreword to Publication No. 26 ***Report on the Poona. Schedules of the National Sample Survey*** contains the following paragraph

"The canvass of the Poona Schedules was based on a programme of four periodic visits to the selected households. The sudden discontinuance of the Poona Schedules after the first visit, therefore, detracts much from the value of the results, at least on items liable to considerable seasonal variation. For that reason we have not undertaken, in the present Report, any examination and analysis of the material presented. Another reason for not attempting an analysis of the data was the character of the survey. The National Sample Survey has been termed multi-purpose and it has no specific purpose beyond that of collection and presentation of data. Therefore, it was thought proper merely to present the data with full details of procedures regarding their collection and tabulation but without comment or interpretation which would necessarily involve addressing oneself to specific questions and adopting particular points of view. We also feel that before any useful analysis is attempted, a careful scrutiny and assessment of the material is necessary. This is now being undertaken and it is hoped to publish the results in a subsequent publication".

This publication embodies the results of the analysis of the material which was in hand at the time of the previous publication. The data collected with the help of the Poona Schedules during 1950-51 have been presented in it in significant groupings and with appropriate breakdowns. The data are presented as portraying, within certain limits, some broad features of the Indian economy, at the time the survey was undertaken. They relate in particular to certain elements which might be termed structural elements of the economy such as population composition, occupational structure, land utilisation, volume of live-stock and capital equipment such as implements, and machinery. They also give details relating to transactions or operations during the year which may either represent comparatively stable features of the economy or may be closely related to characteristics of the annual season. Such are the data relating to employment, to livestock business, the commodity and other transactions recorded for part of the year covered by the period of the survey. The chief use of the publication is expected to be provision of classified data with a fairly wide coverage relating to some of the main structural characteristics of the economy of the country. There is a discussion at the end of the publication of the margin of error involved in various estimates that might be based on these N.S.S. data. It is clear from this discussion that even the estimates pertaining to large, regions are in most directions liable, to a margin of error that would seriously limit their use. This, however, is a matter which relates to the design of the sample survey and the objectives at which it aims. Within the limitations imposed, the exposition in the publication is directed towards setting out the data in various directions and briefly indicating the main features which emerge on their examination.

We are grateful to Government for permitting us to bring out this publication. The present report is being published in the form it was submitted to Government of India. The views contained in the report are not necessarily those of the Government of India.

30th November 1954.
Gokhale Institute of Politics and Economics, Poona 4.

D. R. GADGIL.

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25 Proportion of unemployed labour force to that offering for employment, in different age groups (C-II)

26 Proportion of weekly hired labour days as reported by employers to those reported by employees (C-II and C-III)

27 Wages (in rupees) per labour day, for males, females and children (C-III)

28 Real estate in land and buildings, real estate improvement and residential housing (B-III, IV, V)

29 Distribution of land holdings and related land improvement expenditure in agricultural families (B-III)

30 Distribution of land holdings and related land improvement expenditure in non-agricultural families (B-III)

31 Owned and rented houses: Storeys, Rooms and Area under roof (sq. ft.) (B-V)

32 Distribution of all families, by the types of their owned and rented homes (B-V)

33 Number of animals per 1000 families (B-VI)

34 Proportion of purchased animals to all animals (B-VI)

35 Purchase price (Rs.) of all animals, per 1000 families (B-VI)

36 Purchase price (Rs.) of animals of different ages (B-VI)

37 Average purchase prices (Rs.) of animals during last few years (B-VI)

38 Age distribution of home bred and purchased animals (B-VI)

39 Annual purchases of livestock, per 1000 families (C-VI)

40 Annual sales of livestock, per 1000 families (C-VI)

41 Average purchase and sale prices of livestock (C-VI)

42 Annual purchases and sales classified according to whether a trader was involved (C-VI)

43 Trader and 'non-trader' sale-purchase prices (Rs.) of livestock (C-VI)

44 Age distribution of animals and of slaughter and deaths (B-VI, C-VI)

45 Annual death rates of animals at different ages (B-VI, C-VI)

46 Birth rates for cows and buffaloes at different ages (B-VI, C-VI)

47 Number of implements and machinery owned, per 1000 families (B-VII)

48 Proportion to total of purchased implements and machinery (B-VII)

49 Purchase price (Rs.) of all implements and machinery owned (B-VII)

50 Average purchase prices (Rs.) of implements and machinery, during last few years (B-VII)
51 Capital account per 1000 families
52 Debt and Dues (B-IX)
53 Reserve account per 1000 families
54 Commodity account per 1000 families (C-IV)
55 Production receipts of commodities (Rs. per 1000 families) (C-IV)
56 Commodity sales (Rs. per 1000 families)
57 Particulars of annual receipts and disposals of commodities (Rs. per 1000 families) (C-IV, V)
58 Particulars of annual receipts and disposals of commodities, in agricultural families (C-IV, V)
59 Particulars of annual receipts and disposals of commodities, in non-agricultural families (C-IV, V)
60 Operating Account (Rs. per 1000 families)
61 Rent on assets (Rs. per 1000 families) (C-VII, VIII)
62 Income from and expenditure on professions and services (Rs. per 1000 families) (C-XI, XII)
63 Purchases of raw materials for farm, forest and livestock production (Rs. per 1000 families) (C-IX)
64 Raw material purchases for non-farm production (Rs. per 1000 families) (C-X)
65 Raw material purchases (Rs. per 1000 families), classified according to whether they were made from a trader (C-IX, X)
66 Raw material purchases for farm, forest and livestock production (Rs. per 1000 families) (C-IX)
67 Raw material purchases for non-farm production (Rs. per 1000 families) (C-X)
68 Revenue Account per 1000 families
69 Annual family expenditure (Rs. per family) (C-XIII)
70 Annual family expenditure (Rs. per family) (C-XIV)
71 Distribution of family expenditure (C-XIII, XIV)
72 Annual family expenditure of non-agricultural families (Rs. per family) (C-XIII, XIV)
73 Distribution of annual family expenditure according to the agency from which purchases made (C-XIII, XIV)
74 Distribution of annual family expenditure on different items according to the agency from which purchases made (C-XIII)

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80 Standard errors of means, expressed as their percentages (Sch. B)

81 Standard errors of means, expressed as their percentages (C-IV, V)

82 Standard errors of means, expressed as their percentages. (C-XI)

83 Standard errors of means, expressed as their percentages (C-XII)

84 Standard errors of means, expressed as their percentages (C-XIII)

85 Standard errors of means, expressed as their percentages (C-XIV)

I. INTRODUCTORY

1.1 This report is supplementary to the 'Report on the Poona Schedules of the National Sample Survey (1950-51)' earlier published by the Institute. That Report was largely concerned with the procedures and methods involved in the initial setting up of the National Sample Survey by the Government of India. The results of the survey based on the Poona schedules were given in Chapter VI of that Report. The results were however given only in a summary form on an all-India basis without any regional breakdown and no examination or analysis of the material was attempted. The present Report is an expansion of Chapter VI of the earlier Report and attempts a fuller presentation of the statistical material collected through the Poona Schedules in the first round of the NSS during 1950-51.

1.2 The expansion will be developed in three directions. In the first instance, in the earlier Report only the all-India tables reduced to per 10,000 families were included, though similar tables for each one of a number of States were prepared and made available in a memeographed volume supplementary to the Report. In the present Report, we intend giving the State tables in a summary form.

1.3 The State tables were prepared for 17 separate states or groups of states. For some of these the number of villages included in the sample was rather small. In presenting the following summary tables, the smaller states have, therefore, been suitably grouped. As a result only the following states or groups of states will appear in the, summary, tables.

1. Punjab, PEPSU, Delhi, and Himachal Pradesh.
2. Rajasthan, Ajmer.
3. Uttar Pradesh.
4. Bihar.
5. Orissa.
6. West Bengal.
7. Assam, Manipur Tripura, Andaman, Nicobar.
8. Madhya Bharat, Bhopal, Vindhya Pradesh.
9. Madhya Pradesh.
10. Hyderabad.
11. North Bombay, Saurashtra, Kutch.
12. Bombay Deccan.
13. Madras.
14. Mysore, Travancore-Cochin, Coorg.

1.4 It will appear from the above that while Saurashtra and Kutch have been combined with Bombay, the latter itself has been divided into two regions called North Bombay and Bombay Deccan. An explanation is necessary.

1.5 The manner in which the joint use of the Calcutta and the Poona Schedules was decided upon in the first round of the NSS has been fully narrated in Chapter II of the earlier Report. Broadly speaking 600 out of a total of 1800 sample villages selected for the NSS were to be covered by the Poona Schedules. There was however a minor exception. The exact decision in this respect was as under:

"Joint use of Poona and ISI schedules: In the first round, ISI schedules (1), (2.1), (2.2), (2.3), (3.1) and (3.2) will be used in one set of villages and the Poona schedules (B) and (C) in another set of villages, in the proportion of 1:2 in the districts to be surveyed under the supervision of the Poona Institute, and in the proportion 2:1 in all other areas. The two sets of villages to be arranged in the form of two inter-penetrating network of random samples."

1.6 Thus while the Poona Schedules were canvassed in one-third of the selected villages all over India, within the region in which the field-work was conducted by the Gokhale Institute, it was in two-thirds of the selected villages that the Poona Schedules were used. On account of this, the sample of villages covered by the Poona Schedules was not equally spread all over the country. In the area in which the survey was conducted by the Gokhale Institute, the sample of villages was relatively, double its size in the rest of India. In preparing the all-India summary, it was, therefore, necessary to obtain a separate tabulation for this area and under-weight it appropriately in the all-India summary. Through oversight this was not done and the mistake was detected only at a late stage of tabulation. Though in the all-India summary this would not make any appreciable difference, we take this opportunity to correct this mistake.

1.7 It is on this account that a separate tabulation for this area, called the Bombay Deccan, has been obtained and included in the following summary tables. The area consists of all the Marathi and the Kannad speaking districts of the Bombay. State except for the four northern districts of Thana, Nasik, West Khandesh and East Khandesh. These have been grouped with the Gujarathi speaking districts of the Bombay State and the region has been termed North Bombay. The latter is then combined with the states of Saurashtra and Kutch.

1.8 Table 1 gives general information relating to the NSS sample taken from different states or groups of states. The first column shows the number of selected villages, the total number being 585. The sample of families from each village were selected in accordance with the instructions for the Calcutta Schedules. Schedule 0 of that series was utilised to make a complete list of all households in each selected village. The second column in the table gives the number of households listed in schedule 0, the total number listed being 144,025. A random sample of 80 households from those listed in Schedule 0 was then taken and noted in Schedule 0.1. classifying the households into two classes, namely, agricultural and non-agricultural. In the third column with two sub-columns, are given the number of agricultural and non-agricultural families listed in Schedule 0.1, the total number of agricultural families being 24,640 and of non-agricultural families 15,078. From out of the families listed in Schedule 0.1, a sample of 8 agricultural and 8 non-agricultural families was selected for canvass of the Poona Schedules B and C. In the fourth column with two sub-columns, we give the number of agricultural and non-agricultural families so selected. It will be noted that the total number of agricultural families selected was 5103 and that of the non-agricultural families was 4098.

1.9 The sample of families, 80 from each selected village, noted in Schedule 0.1 formed a random sample of families. Their classification into two classes, namely, agricultural and non-agricultural, therefore, gives an indication of the proportion of agricultural families in different states. Such proportions based on the classification in Schedule 0.1 are shown in the last column of the table. Thus, all states taken together, the proportion of agricultural families in the rural population of India appears to be 62.04 percent. There is considerable variation in this proportion from state to state. On this basis the states might be broadly divided into three groups. Punjab, Rajasthan and Uttar Pradesh in the north, Madhya Bharat and Vindhya Pradesh in the centre and Bombay Deccan the south have high proportions of agricultural families. Orissa and West Bengal in the east, Saurashtra and North Bombay in the west and Madras in the south have proportions of agricultural families round about 60 percent. In the remaining states, the proportions of agricultural families are considerably lower. In judging these figures it should be noted that the agricultural labour has been generally classed as non-agricultural. Moreover apart from the sampling variation to which these percentages are liable, it is possible that the classification of families into the two categories of agricultural and non-agricultural was not uniformly understood by investigators working in different states.

1.10 Another extension of the results published in the earlier Report is on account of the following. As noted above the NSS sample of families consisted of a, sample of agricultural and a sample of non-agricultural families - from each one of the selected villages. The earlier Report gave only the all-India averages per 10,000 families which included both the agricultural and the non-agricultural families in appropriate proportions. No separate results for the two groups of families were given in that Report. In the present Report we propose to give some of the important data for the two groups separately.

1.11 The distinction between the agricultural and the non-agricultural families was broadly intended to correspond to the distinction between the cultivating and the non-cultivating families. Partly on account of the inadequacy of the instructions on this point and partly on account of errors of classification on the part of the field investigators, there have been however a few mis-classifications. Nevertheless, the distinction might be taken to correspond approximately to the distinction between cultivators and non-cultivators. The exact content of the two catergories might be seen from the occupational classifications of the members of the families in the two categories given in Tables 2 and 3, respectively

1.12 The third direction in which an extension is attempted is in a more detailed tabulation of material presented in some of the all-India tables given in the earlier Report. Further, while no examination or analysis of the material was attempted in the earlier Report, in the present Report brief notes are being added to assist the reader in studying the statistical material presented.

1.13 It will be remembered that most of the items in the Poona Schedules referred either to one week or to four weeks immediately preceding the day of visit by the investigator. Data on employment in Schedule C-II, referred only to three preceding days. In the earlier Report, the basis on which the data were collected was adopted for their presentation as well. In the present Report, all data have been inflated to bring them to an annual basis. In view of the fact that the investigation was conducted from October 1950 to March 1951, and the possibility of a number of items in these Schedules being affected by seasonal variations, such inflation to annual basis is obviously not appropriate. The inflation to annual basis should, therefore, be regarded as no more than a convenient way of presentation.

Table 1.
General Information Relating to the NSS sample

	State	No. of villages: selected	No. of house-holds Sch. 0	No. of house-holds Sch. 0.1		No. of house- holds selected for Sch. B & C		Percent to total of Ag. house-holds Sch. 0.1
				Ag.	N-Ag.	Ag.	N-Ag.	
1.	Punjab, PEPSU, Delhi and Himachal Pradesh	38	5889	1654	758	353	255	68.57
2.	Rajasthan and Ajmer	31	4507	1441	570	295	194	71.66
3.	Uttar Pradesh	78	18578	3497	1745	670	570	66.71
4.	Bihar	54	11888	1873	1722	476	381	52.10
5.	Orissa	21	2215	744	510	146	151	59.33
6.	West Bengal	30	5896	1142	735	247	208	60.84
7.	Assam, Manipur, Tripura and Andaman-Nicobar	22	5675	727	716	185	154	50.38
8.	Madhya Bharat, Bhopal and Vindhya Pradesh	34	3197	1278	620	323	196	67.33
9.	Madhya Pradesh	50	16401	1810	1858	405	391	49.35
10.	Hyderabad	23	8118	866	768	191	176	53.00
11.	North Bombay, Saurashtra, Kutch.	48	12572	1953	1249	446	322	60.99
12.	Bombay Deccan	57	14309	3264	976	545	367	76.98
13.	Madras	73	24706	3399	1995	602	536	63.01
14.	Mysore, Coorg, Travancore-Cochin	26	10074	992	856	219	197	53.68
15.	All-India	585	144025	24640	15078	5103	4098	62.04

1.14 In the earlier Report two types of data were presented on a number of items. These corresponded to the amounts reported and the number of 'entries' or the number of families reporting any amount on that item. Thus, in relation to the family expenditure, an average weekly or four-weekly expenditure on each expenditure item was given as also the number of families who reported any expenditure on that item during the one or four-week period. It is obvious that while the amounts of income or expenditure might be inflated to an annual basis, it would not be possible similarly to inflate the number of families reporting receipt or expenditure in a specified category. In the present Report, all data relating to 'entries' or the number of families reporting an item have therefore been omitted.

1.15 In the earlier Report, the presentation of the tables followed the arrangement of the blocks of information in the questionnaire Schedules. In the present Report, the same arrangement is more or less maintained. Some of the tables have however been rearranged according to the subject matter. The system of numbering the tables according to the block numbers in the Schedules to which they related, followed in the earlier Report, has not been adopted in the present Report. Instead, all tables have been numbered serially. Nevertheless, after the title of each table is shown, the Schedule block from which the table is derived. Thus the occupational distributions, given in Tables 2, and 3 are derived from Schedule B-II that is, II block of B Schedule. This will facilitate ready reference to the questionnaire Schedules and the related instructions to investigators both at of which are fully reproduced in the earlier Report.

Table 2.
Occupational Distribution of the Members of the Agricultural Families in the NSS Sample (B-II)

	Occupation group	Earners		Non-earners		Total
		Male	Female	Male	Female	
A.1	Cultivators of land, wholly or mainly owned	6725	2352	4806	8352	22235
.2	Cultivators of land, wholly or mainly unowned	927	210	708	692	2537
.3	Cultivating labourers	653	345	235	284	1717
.4	Non-cultivating owners of land	89	55	108	567	819
A -	*All agricultural classes*	*8394*	*3162*	*5857*	*9895*	*27808*
0.1,.2	Stock raising and rearing of small animals and insects	196	19	18	19	252
.3	Plantation industries	61	56	7	15	139
.4	Forestry and wood-cutting	9	8	-	-	17
.6	Fishing	11	1	9	8	29
O -	*Primary industries not elsewhere specified*	*277*	*84*	*34*	*42*	*437*
1.0	Non-metallic mining and quarrying not elsewhere classified	6	3	1	-	10
.5	Stone-quarrying, clay and sand pits	-	-	-	-	-
1-	*Mining and quarrying*	6	3	1	-	10
2.0	Food industries otherwise unclassified	-	-	-	-	-
.1	Grains and pulses	4	8	-	-	12
.2	Vegetable oil and dairy products	2	2	-	-	4
.3	Sugar industries	2	-	-	-	2
.4	Beverages	2	-	-	3	5
.5	Tobacco	8	4	-	-	12
.6	Cotton textiles	11	4	-	-	15
.7	Wearing apparel (except footwear) and made-up of textile goods	8	-	1	5	14
.8	Textile industries otherwise unclassified	8	6	1	5	20
.9	Leather, leather products and footwear.	3	-	-	3	6
2 -	*Processing and manufacture of foodstuffs, textiles, leather and products thereof*	*48*	*24*	*2*	*16*	*90*
3 -	Processing and manufacture of metals, chemicals and products thereof	6	1	1	1	9
4.0	Manufacturing industries otherwise classified	6	-	-	-	6
.2,.3	Bricks, tiles, cement pipes and other structural clay products	-	1	-	-	1
.4	Non-metallic mineral products	3	2	3	4	12
.6,.7	Wood, wood-products, furniture and fixtures	3	-	-	-	3
4 -	*Processing and manufacture not elsewhere specified*	*12*	*3*	*3*	*4*	*22*

(Contd.)

Table 2.
Occupational Distribution of the Members of the Agricultural Families in the NSS Sample (B-II) (Concld.)

	Occupation group	Earners		Non-earners		Total
		Male	Female	Male	Female	
5.1	Construction and maintenance- buildings	8	-	1	3	12
.2	Construction and maintenance- roads, bridges, etc.	1	-	-	-	1
.4	Construction and maintenance- irrigation works	-	-	-	-	-
.5,.6,.0	Works and Services- electric-power, gas and water supply, etc.	1	-	-	-	1
.7	Sanitary works and services (including scav-engers)	2	5	1	-	8
5 -	*Construction and utilities*	*12*	*5*	*2*	*3*	*22*
6.1	Retail trade in foodstuffs	25	11	-	-	36
2.3,.0	Retail trade in fuel, textile and leather goods, etc.	8	1	-	-	9
.4, .8	Wholesale trade in foodstuffs, money-lending and other financial business	17	5	12	14	48
6 -	Commerce	50	17	12	14	93
7.1	Transport by road	10	1	-	-	11
.2	Transport by water	2	-	-	-	2
.4, .6	Railway and postal services	3	-	-	-	3
7-	*Transport, storage and communications*	*15*	*1*	-	-	*16*
8.1	Medical and other health services	-	1	-	-	1
.2	Educational services and research	14	1	1	11	27
.3, .4	Defence and police services	3	-	-	-	8
.5	Village officers and servants	7	3	2	-	12
.6,.7	Employees of local bodies and State Govern-ments	2	-	-	-	2
8 -	*Health, education and public administration*	*26*	*5*	*3*	*11*	*45*
9.0,.6	Services otherwise unclassified	107	101	7	16	231
.1	Domestic services	13	68	-	26	107
.2	Barbers and beauty shops	4	1	-	-	5
.3	Laundries and laundry services	4	11	1	-	16
.4	Hotels, restaurants, eating houses, etc.	5	-	-	-	5
.5	Recreation services	2	1	-	-	3
.8	Religious, charitable and welfare services	5	-	-	-	5
.9	Other non-productive occupations	4	1	2	8	15
9 -	*Services not elsewhere specified*	*144*	*183*	*10*	*50*	*387*
	Grand total	***8990***	***3488***	***5925***	***10036***	***28489***

Table 3.
Occupational Distribution of the Members of the Non-Agricultural Families in the NSS Sample (B-II)

	Occupation group	Earners		Non-earners		Total
		Male	Female	Male	Female	
A.1	Cultivators of land, wholly or mainly owned	169	143	14	34	360
.2	Cultivators of land, wholly or mainly unowned	24	18	2	5	49
.3	Cultivating labourers	1952	1436	1080	1836	6,304
.4	Non-cultivating owners of land	25	9	40	41	115
A -	*All agricultural classes*	*2170*	*1606*	*1136*	*1916*	*6,828*
0.1,.2	Stock raising and rearing of small animals and insects	261	41	72	165	539
.3	Plantation industries	127	97	90	81	395
.4	Forestry and wood-cutting	60	34	41	84	219
.6	Fishing	31	10	13	20	74
O -	*Primary industries not elsewhere specified*	*479*	*182*	*216*	*350*	*1,227*
1.0	Non-metallic mining and quarrying not elsewhere classified	39	22	28	32	121
.5	Stone-quarrying, clay and sand pits	20	2	8	23	53
1-	*Mining and quarrying*	59	24	36	55	174
2.0	Food industries otherwise unclassified	15	4	11	36	66
.1	Grains and pulses	27	70	21	26	144
.2	Vegetable oil and dairy products	23	6	21	37	87
.3	Sugar industries	13	5	11	17	46
.4	Beverages	10	-	9	14	33
.5	Tobacco	16	3	8	12	39
.6	Cotton textiles	128	46	83	140	397
.7	Wearing apparel (except footwear) and made-up of textile goods	86	8	52	102	248
.8	Textile industries otherwise unclassified	56	44	38	68	206
.9	Leather, leather products and footwear.	135	20	116	193	464
2 -	*Processing and manufacture of foodstuffs, textiles, leather and products thereof*	*509*	*206*	*370*	*645*	*1,730*
3 -	*Processing and manufacture of metals, chemicals and products thereof*	*115*	*4*	*90*	*147*	*356*
4.9,.0	Printing and Manufacturing industries otherwise unclassified	60	3	61	103	227
.2,.3	Bricks, tiles, cement pipes and other structural clay products	23	5	22	23	73
.4	Non-metallic mineral products	101	40	81	131	353
.6,.7	Wood, wood-products, furniture and fixtures	219	30	191	341	781
4 -	*Processing and manufacture not elsewhere specified*	*403*	*78*	*355*	*598*	*1,434*

(Contd.)

TABLE 3.
Occupational distribution of the members of the non-agricultural families in the NSS sample (B-II) (Concld.)

	Occupation group	Earners		Non-earners		Total
		Male	Female	Male	Female	
5.1	Construction and maintenance- buildings	98	12	77	112	299
.2	Construction and maintenance- roads, bridges, etc.	9	7	6	16	38
.4	Construction and maintenance- irrigation works	8	2	6	10	26
.5,.6,.0	Works and Services- electric-power, gas and water supply, etc.	3	-	-	-	3
.7	Sanitary works and services (including scav-engers)	27	33	25	24	109
5 -	*Construction and utilities*	*145*	*54*	*114*	*162*	*475*
6.1	Retail trade in foodstuffs	257	43	204	350	854
2.3,.0	Retail trade in fuel, textile and leather goods, etc.	83	11	81	128	303
.4, .8	Wholesale trade in foodstuffs, money-lending and other financial business	68	19	60	106	253
6 -	*Commerce*	*408*	*73*	*345*	*584*	*1,410*
7.1	Transport by road	33	-	21	50	104
.2	Transport by water	9	-	7	13	29
.4,.6	Railway and postal services	53	-	63	90	206
7-	*Transport, storage and communications*	*95*	-	*91*	*153*	*339*
8.1	Medical and other health services	19	8	35	59	121
.2	Educational services and research	59	3	68	114	244
.3,.4	Defence and police services	24	-	16	34	74
.5	Village officers and servants	85	6	87	131	309
.6,.7	Employees of local bodies and State Govern-ments	22	-	19	44	85
8 -	*Health, education and public administration*	*209*	*17*	*225*	*382*	*833*
9.0,.6	Services otherwise unclassified	687	398	411	658	2,154
.1	Domestic services	51	122	26	72	271
.2	Barbers and beauty shops	129	2	109	183	423
.3	Laundries and laundry services	105	65	80	106	356
.4	Hotels, restaurants, eating houses, etc.	21	6	22	27	76
.5	Recreation services	7	4	4	10	25
.8	Religious, charitable and welfare services	91	41	65	141	338
.9	Other non-productive occupations	18	9	29	50	106
9 -	*Services not elsewhere specified*	*1,109*	*647*	*746*	*1,247*	*3,749*
	Grand total	***5701***	***2891***	***3724***	***6239***	***18555***

2. POPULATION

2.1 With the more or less full publication of the 1951 population Census results, the NSS data on population is of no great interest. Its interest is now more statistical. The field work of the first round of the NSS was done during October 1950 to March 1951 while the population Census was conducted as on 1st March 1951. In view of this, a comparison of the NSS data based on a sample of only about 10,000 families with the results of the full census might be of interest.

2.2 In Tables 4 and 5 are given the age distributions of males and females in different states. In the last columns of the tables are given the average number of males and females per house-hold. It would have been worthwhile comparing these age distributions with those given by the 1951 Census. The latter are available in the Census of India Paper No. 3 of 1953 entitled ‘Summary of Demographic and Economic Data-1951 Census’. Unfortunately the age groups by which the census publication gives the age distributions are different from those given in our tables. The census age groups are 5-14, 15-24, etc., and are thus centred at 10, 20, etc. On the other hand in our tables, the age groups adopted are 10-19, 20-29, etc. A comparison between the NSS and the Census age distributions state by state is, therefore, not attempted. Nevertheless, as will appear in the next section, a comparison on an all-India basis is made.

2.3 In Table 6 are given the single year age distributions of males and females in the all-India NSS sample. As will be seen this is no more than a detailed break up of the age distributions in decennial age-groups appearing in the last lines of Tables 4 and 5. The break up has been obtained in the following manner. Separate age distributions by single age years were obtained for members of agricultural and non-agricultural families, respectively in the all-India sample. The two distributions were then appropriately weighted to obtain a combined distribution. It should be noted that this weighting procedure is inferior to the weighting procedure adopted in preparing Tables 4 and 5. In obtaining these tables the weighting of the agricultural and non-agricultural families was done at the state level, which was better than their weighting at the all-India level. Therefore, the combined distributions obtained by weighting at the all-India level were adjusted to agree with the decennial age group distributions given in earlier tables. Thus it is merely to obtain a single year break-up of the decennial age groups that the weighting at the all-India level was utilised.

2.4. On the basis of the table, a comparison with the Census data is presented in Table 7. The NSS single year age distributions are appropriately grouped to compare with the Census distributions. The Census distributions are taken from the Summary Table VI of the above mentioned publication and refer to the all-India rural population. As will appear, the agreement between the NSS and the Census distributions is satisfactory.

2.5 We do not propose here giving age and sex distributions separately for the agricultural and the non-agricultural families. There is nevertheless one point which deserves mention, namely that the size of the agricultural families is considerably larger than that of the non-agricultural families. Thus the 5103 agricultural families comprised 14915 males and 13524, female members; this gives 2.92 male and 2.65 female members per agricultural family. On the other hand, the 4098 non-agricultural families comprised 9424 male and 9130 female members; this gives only 2.30 male and 2.23 female members per non-agricultural family.

2.6 The reasons for the larger size of the agricultural families are perhaps not so much demographic as sociological. The joint family system is seen to be prevalent to a larger extent among the agriculturists than among the non-agriculturists. This is reflected in the relation compositions of these families. In Tables 8, 9, 10 and 11, we give the distribution by age and by relation to the family head, of the male and female members of the agricultural and non-agricultural families. It will be seen that relations through brothers and sisters, as also through sons and daughters are more numerous in the agricultural families than in the non-agricultural families.

2.7 It will be noted that the male relations through brothers and sisters are in most cases the nephews of the heads. Similarly, the male relations through sons and daughters are mostly, the grandsons of the heads. On the other hand, the female relations through brothers and sisters, and through sons and daughters include, besides nieces and grand-daughters, the sisters and daughters-in-law of the head. It is apparent from the tables that such relations through brothers and sisters as also through sons and daughters are more numerous in the agricultural than in the non-agricultural families.

2.8 It is clear from the above that the joint family system is less prevalent among the non-agricultural families. As a consequence, the members of the non-agricultural families are seen to undertake the responsibility of the head at younger ages. Thus in the age-group 23-27, half the male members of the non-agricultural families are heads. In the agricultural families on the other hand only 36.4 percent in this age-group are heads of families. The difference is clearly seen by seeing the progression of the proportion of heads through successive age groups.

2.9 Relation compositions of the female members in different age-groups have their peculiar characteristics. There are many more mothers than there are fathers of heads. The excess is of course largely on account of widowed mothers staying with their sons, when after the death of their husbands the headship of the family had passed on to their sons. It is a notable fact that in the age-group 53-57, the mothers and wives of heads are nearly equal in number. In later age-groups, mothers are actually in larger numbers. Contrasted with this is the position among males where in the age-group 53-57, barely 3 percent are fathers whereas over 90 percent are heads.

2.10 Among the females, wives of heads are again many fewer than the number of heads. This is of course on account of the widowed heads. At younger ages, the daughters, nieces and grand-daughters naturally appear in numbers comparable with those of sons, nephews and grandsons. The relation composition of the females, begins to take a different shape from the age-group 13-17 where wives of heads appear in considerable numbers. With the appearance of wives of the heads the categories ‘relations through brothers and sisters’ and ‘through sons and daughters’ also record an increase, obviously on account of the arrivals of sisters and daughters-in-law. On the other hand sisters and daughters leave much more rapidly than do the brothers and sons. Thus the course that the relation composition takes in successive age-groups is seen to provide a picture of the progress of a family in a patrilineal society.

Table 4.
Distribution of Males in Different Age Groups (B-II)

State	Age Groups										No. of males in the selected house-holds	No. of males per house-holds
	0-	10-	20-	30-	40-	50-	60-	70-	80-	90 & above		
1. Punjab, etc.	28.85	21.29	15.59	12.75	7.26	7.11	4.36	2.30	0.44	0.05	1663	2.73
2. Rajasthan, Ajmer	28.10	22.15	16.70	12.61	9.66	4.59	3.63	2.04	0.52	-	1411	2.84
3. Uttar Pradesh	25.87	20.11	16.32	13.04	10.99	7.41	4.10	1.45	0.53	0.18	3237	2.61
4. Bihar	27.36	21.23	14.68	15.30	11.67	5.86	2.70	1.25	0.37	0.08	2415	2.82
5. Orissa	24.90	21.09	17.81	13.94	10.05	6.77	3.98	0.88	0.58	-	777	2.61
6. West Bengal	23.49	22.40	18.30	14.76	8.74	7.43	3.39	0.93	0.46	0.10	1145	2.52
7. Assam, etc.	29.17	22.17	14.40	14.85	9.56	5.28	2.96	0.95	0.55	0.11	911	2.69
8. Madhya Bharat, etc.	26.49	22.68	16.50	14.63	10.06	4.38	3.86	1.17	0.23	-	1346	2.60
9. Madhya Pradesh	27.25	20.75	16.00	16.18	8.98	5.94	3.59	0.84	0.47	-	1905	2.39
10. Hyderabad	26.35	20.17	17.14	12.95	10.88	5.58	4.53	1.50	0.90	-	880	2.40
11. N. Bombay etc. Bombay Deccan	29.34	21.90	14.66	14.10	8.92	5.74	3.79	0.96	0.44	0.15	4689	2.79
13. Madras	23.92	23.25	16.41	12.63	10.62	7.54	4.17	1.13	0.33	-	2852	2.51
14. Mysore, etc.	26.01	21.25	16.41	13.46	9.60	6.31	4.80	1.80	0.18	0.18	1109	2.67
15. All-India	26.92	21.60	15.92	13.91	9.82	6.22	3.81	1.28	0.44	0.08	24340	2.60

Table 5.
Distribution of Females in Different Age Groups (B-II)

State	Age Groups										No. of females in the selected house-holds	No. of females per house-holds
	0-	10-	20-	30-	40-	50-	60-	70-	80-	90 & above		
1. Punjab, etc.	31.37	21.19	17.45	11.69	7.76	4.81	3.65	1.53	0.55	-	1497	2.46
2. Rajasthan, Ajmer	28.60	21.32	18.31	12.73	7.71	4.78	4.64	1.18	0.64	0.09	1280	2.58
3. Uttar Pradesh	26.84	20.71	16.83	12.62	10.18	6.37	4.42	1.38	0.48	0.17	2911	2.33
4. Bihar	27.11	21.18	16.91	14.39	8.52	5.94	3.99	1.26	0.37	0.33	2350	2.72
5. Orissa	26.06	19.60	15.25	15.25	8.65	6.87	5.31	1.75	0.99	0.27	788	2.35
6. West Bengal	26.18	20.27	19.38	12.67	8.94	6.14	4.14	1.52	0.65	0.11	1096	2.28
7. Assam, etc.	31.23	19.32	20.07	14.74	7.03	3.68	2.73	0.81	0.26	0.13	723	2.05
8. Madhya Bharat, etc.	28.81	22.40	17.40	13.48	7.30	6.03	3.70	0.72	0.16	-	1299	2.39
9. Madhya Pradesh	25.00	19.19	17.73	14.95	9.73	6.26	4.67	1.92	0.55	-	1774	2.22
10. Hyderabad	25.24	20.70	16.28	13.47	8.56	6.73	5.02	3.32	0.57	0.11	859	2.33
11. N. Bombay etc. 12. Bombay Deccan	29.32	21.30	17.06	12.88	7.82	6.24	3.70	1.14	0.45	0.09	4280	2.55
13. Madras	23.71	23.15	16.36	14.26	10.11	7.15	3.17	1.47	0.52	0.10	2730	2.34
14. Mysore, etc.	26.31	24.21	18.41	11.09	7.25	6.40	3.75	1.94	0.46	0.11	1067	2.56
15. All-India	27.31	21.27	17.27	13.36	8.64	6.11	3.99	1.44	0.49	0.12	22654	2.42

Table 6.
Single Year Age Distribution of Males and Females (B-II)

Age (years)	Percent to total of		Age (years)	Percent to total of		Age (years)	Percent to total of	
	males	females		males	females		males	females
0	2.05	1.75	26	1.00	1.02	52	0.44	0.37
1	2.45	2.44	27	0.76	0.66	53	0.14	0.07
2	2.68	2.84	28	1.54	1.63	54	0.15	0.16
3	3.01	3.23	29	0.31	0.23	55	1.49	1.53
4	2.69	2.82	30	4.97	5.31	56	0.21	0.20
5	3.38	3.50	31	0.22	0.22	57	0.14	0.08
6	2.80	2.70	32	1.51	1.38	58	0.18	0.16
7	2.54	2.57	33	0.40	0.35	59	0.07	0.04
8	3.47	3.45	34	0.36	0.31	60	2.39	2.67
9	1.85	2.01	35	4.43	3.84	61	0.07	0.03
10	3.83	3.81	36	0.77	0.66	62	0.21	0.16
11	1.32	1.51	37	0.37	0.32	63	0.06	0.04
12	3.90	3.32	38	0.65	0.79	64	0.10	0.08
13	1.63	1.54	39	0.23	0.18	65	0.77	0.83
14	2.03	1.96	40	4.18	4.14	66	0.05	0.03
15	2.21	2.01	41	0.14	0.10	67	0.04	0.06
16	2.25	2.36	42	0.74	0.59	68	0.07	0.06
17	0.99	1.11	43	0.26	0.26	69	0.05	0.03
18	2.74	2.94	44	0.20	0.15	70	0.82	1.00
19	0.70	0.71	45	3.16	2.50	71	0.01	0.03
20	3.48	4.29	46	0.34	0.21	72	0.08	0.07
21	0.68	0.64	47	0.20	0.15	73	0.02	0.02
22	2.23	2.15	48	0.44	0.43	74	0.02	0.02
23	0.81	0.86	49	0.16	0.11	75	0.26	0.28
24	1.04	0.98	50	3.27	3.44	76 and over	0.59	0.63
25	4.07	4.81	51	0.13	0.06	Total = 100	24340	22654

Table 7.
Comparison between the NSS and the 1951 Census (rural population) age-distributions (B-II)

Age	Males		Females	
	NSS (%)	Census (%)	NSS (%)	Census (%)
0	2.05	3.28	1.75	3.33
1-4	10.83	10.17	11.33	10.57
5-14	26.75	25.46	26.37	24.77
15-24	17.13	16.47	18.05	17.27
25-34	15.14	15.16	15.92	15.65
35-44	11.97	12.22	11.03	11.55
45-54	8.43	8.82	7.50	8.23
55-64	4.92	5.18	4.99	5.12
65-74	1.93	2.23	2.15	2.39
75 & over	0.85	0.95	0.91	1.05
Not stated	-	0.06	-	0.07
Total	100.00	100.00	100.00	100.00

Table 8.
Distribution of males, in Agricultural Families by Age and Relation to the Head of the Family (B-II)

Age group	Fathers of heads	Heads or husbands of heads	Brothers	Male relations through brothers & sisters	Sons	Male relations through sons & daughters	Other relations	Unrelated persons	Total = 100
0-2	-	-	0.9	8.4	66.6	23.0	1.1	-	1057
3-7	-	-	2.8	6.9	72.4	17.0	0.8	0.1	2113
8-12	-	0.6	6.5	7.5	75.3	8.5	0.6	1.0	2063
13-17	-	3.6	10.5	7.2	70.3	4.9	1.3	2.2	1338
18-22	-	15.4	13.0	5.6	58.5	4.0	0.9	2.6	1504
23-27	-	36.4	13.7	3.3	40.7	2.5	0.9	2.5	1197
28-32	-	56.2	12.9	1.7	24.3	2.2	1.0	1.7	1298
33-37	-	74.6	8.6	1.7	10.9	1.5	0.7	2.0	951
38-42	0.1	81.4	7.3	1.1	6.9	0.6	1.2	1.4	852
43-47	0.9	86.0	6.1	0.5	3.5	0.5	1.9	0.6	635
48-52	2.5	87.3	4.0	0.6	1.5	0.4	2.5	1.2	675
53-57	3.1	90.6	2.5	0.6	1.0	-	1.6	0.6	320
58-62	7.3	86.1	2.2	0.4	0.4	-	2.7	0.9	454
63 & over	12.7	79.7	2.2	-	-	-	5.2	0.2	458
All ages	0.8	33.8	7.4	4.5	44.3	6.6	1.3	1.3	14,915

Table 9.
Distribution of Males, in non-agricultural families, by age and relation the head of the family (B-II)

Age group	Fathers of heads	Heads or husbands of heads	Brothers	Male relations through brothers & sisters	Sons	Male relations through sons & daughters	Other relations	Unrelated persons	Total = 100
0-2	-	-	0.9	6.3	77.6	14.6	0.6	-	679
3-7	-	-	3.8	4.5	80.7	10.3	0.6	0.1	1375
8-12	-	1.1	8.6	4.2	79.9	4.9	0.9	0.4	1404
13-17	-	6.8	12.5	4.6	72.2	2.3	1.0	0.6	842
18-22	-	24.0	12.5	3.8	55.7	1.8	1.1	1.1	880
23-27	-	50.0	8.6	2.5	35.2	2.1	1.0	0.6	710
28-32	-	72.8	6.8	1.9	16.7	1.0	0.4	0.4	797
33-37	-	87.3	5.2	0.5	6.0	0.8	0.2	0.5	600
38-42	0.2	90.4	4.1	0.2	3.9	0.2	0.8	0.2	627
43-47	0.8	93.9	2.3	-	1.5	0.5	1.0	-	388
48-52	1.7	93.0	2.2	0.7	-	0.5	1.2	0.7	408
53-57	8.0	94.0	2.5	-	-	-	0.5	-	202
58-62	7.8	87.8	1.2	-	-	0.4	2.4	0.4	256
63&	17.9	75.5	2.3	-	-	-	3.9	0.4	257
All ages	0.9	38.9	6.3	2.9	45.7	4.0	0.9	0.4	9425

Table 10.
Distribution of females, in agricultural families, by age and relation to the head of the family (B-II)

Age group	Fathers of heads	Heads or husbands of heads	Brothers	Male relations through brothers & sisters	Sons	Male relations through sons & daughters	Other relations	Unrelated persons	Total = 100
0-2	-	-	0.6	8.4	70.2	20.4	0.3	0.1	969
3-7	-	-	2.2	8.0	72.7	16.4	0.6	0.1	2087
8-12	-	0.7	6.2	8.2	71.4	11.7	1.7	0.1	1937
13-17	-	8.9	5.7	10.5	46.1	26.6	1.4	0.8	1277
17-22	-	36.0	2.2	12.9	13.4	33.8	1.3	0.4	1432
23-27	0.1	55.4	2.5	11.5	6.4	22.9	0.8	0.4	1130
28-32	1.8	71.9	3.0	8.3	3.4	10.3	1.2	0.1	1111
33-37	4.1	78.2	2.0	6.9	2.0	5.5	0.9	0.4	729
38-42	13.3	71.4	2.8	4.5	1.0	3.0	3.1	0.9	760
43-47	15.5	71.5	3.8	3.5	1.2	0.9	3.1	0.5	425
48-52	30.6	55.5	2.8	3.1	0.5	1.2	5.8	0.5	573
53-57	40.7	45.5	2.9	2.5	-	1.4	6.6	0.4	275
58-62	53.2	30.0	2.2	3.4	-	-	11.0	0.2	409
63 & over	61.5	19.4	2.0	2.7	-	-	14.4	-	410
All ages	7.2	30.5	3.2	8.1	33.4	15.1	2.2	0.3	13524

Table 11.
Distribution of Females, in non-agricultural families, by age and relation to the head of the family (B-II)

Age group	Mothers of heads	Heads or wives of heads	Sisters	Female relations through brothers & sisters	Daughters	Female relations through sons & daughters	Other relations	Unrelated persons	total = 100
0-2	-	-	0.3	4.6	75.2	18.9	0.9	0.1	652
3-7	-	-	3.8	4.0	81.4	10.2	0.6	-	1315
8-12	-	0.6	8.4	4.7	76.8	7.8	1.6	0.1	1291
13-17	-	13.1	7.8	7.2	51.2	18.9	1.7	0.1	752
18-22	-	48.8	3.5	8.8	13.0	25.4	0.5	-	981
23-27	0.4	70.4	2.5	5.7	5.8	14.3	0.6	0.3	719
28-32	1.7	88.8	2.4	3.8	2.6	5.2	0.4	0.1	869
33-37	4.8	84.0	1.8	3.2	1.8	3.8	0.4	0.2	501
38-42	14.8	77.6	1.3	2.7	1.3	1.3	1.0	-	547
43-47	23.5	70.0	1.6	1.6	0.7	0.3	2.0	0.3	310
48-52	34.1	56.2	2.8	1.0	-	-	5.9	-	425
53-57	44.7	47.6	1.1	2.2	-	-	4.4	-	183
58-62	56.2	31.5	1.1	0.7	-	-	10.2	0.3	283
63 & over	60.0	25.8	1.3	-	-	-	12.9	-	302
All ages	8.4	36.9	3.7	4.4	34.5	10.1	1.9	0.1	9130

3. OCCUPATION

3.1 In order that the occupational classification of the population based on the NSS might be directly compared with that given by the 1951 Census, the Census scheme of occupational classification has been adopted in the following tables.

3.2 In table 12 is given for different states the distribution of the total population according to the principal occupation on which it is dependent. The NSS Poona Schedules distinguished only two basic categories, namely, earners and non-earners. In order to arrive at the total population dependent on an occupation, the earners were classified by their principal occupation and the non-earners were classified by the principal occupation of the earner on whom they were dependent.

3.3 In Tables 13 and 14 are given the distributions of the male and female earners, respectively according to their principal occupation.

3.4 In Table 15 we compare these distributions with the corresponding Census distributions. The relevant Census data are available in Summary Table IV of the Census of India Paper No. 3. The data are given not for each state but for each Census region. In Table 15, we have, therefore, grouped the states by the Census regions. The Census makes a basic three-fold distinction as between (i) self-supporting persons, (ii) non-earning dependents and (iii) earning dependents. On the other hand, in the NSS Schedules, we had made only a two-fold distinction as between earners and non-earners. For purposes of comparison, we have, therefore, assumed that our 'earners' would correspond to the Census 'self-supporting persons' and the "earning dependents' together. In preparing Table 15 the two Census classes have, therefore, been combined.

3.5 It will be apparent from the table, that the agreement between the NSS and the Census data is not very satisfactory. The deviations between the two are not only large in some places, but there is an indication that the NSS results are liable to a systematic bias. Thus it will be observed that in each region, the NSS underestimates the livelihood class 'agricultural' while overestimates the class 'production other than agriculture'.

3.6 There are several reasons which would possibly explain the general disagreement between the NSS and the Census data. In the first place, of course, there is the sampling error to which all NSS estimates are liable. In view of the good agreement between the NSS and the Census age distributions, it might be observed that the NSS data on occupations should normally have larger sampling errors than those of the NSS data on sex and age. This is because of the fact that the ultimate sampling unit in NSS was the family or a house-hold and these latter, while they are peculiarly heterogeneous units as regards their sex and age composition, are by and large very homogeneous in the occupations of their members. Consequently while a family is an almost ideal sampling unit to ascertain the age and sex composition of a population, it is not so suited for obtaining its occupational distribution.

3.7 The sampling errors, small or large, do not however explain the kind of systematic bias as is noted above. The bias might arise out of a faulty sampling procedure or a faulty tabulation procedure. The NSS sample was drawn at the Indian Statistical Institute, Calcutta. We do not have sufficient details of the procedure in its actual operation to judge whether it could have given rise to any bias. Full details of the tabulation procedure were given in our first Report. There are, however, certain details relating to the tabulation of items in Schedule B-II, which might possibly impart a bias to the results. As was described in the first Report, as a matter of general procedure, all tabulations were first done for each village and separately for the agricultural and the non-agricultural families. The latter two were then appropriately combined to obtain a village tabulation per family. The state or the all-India tables were then derived by adding up the village tabulations. The items in Schedule B-II, namely those relating to sex, age and occupational distributions of the population, were however an exception. It was found too tedious and laborious to adopt the general procedure for tabulating items in Schedule B-II. An approximate procedure was therefore adopted. The sample of agricultural and non-agricultural families in all villages in a state were put together. The sex, age and occupational distributions of persons in agricultural and non-agricultural families were then separately obtained and appropriately combined to get the state tables of sex, age and occupational distributions. The procedure is obviously not quite proper. It is not, however, immediately clear whether it could give rise to the kind of bias as is apparent in the occupational tables.

3.8 It appears to us that at least part of the discrepancy is on account of the Census categories ‘self-supporting’ and ‘earning dependents’ not corresponding exactly with our category of ‘earner’. It is possible, for instance, that in agriculture fewer will be described as ‘earners’ than as either ‘self-supporting’ or ‘earning dependents’. If this were true it should explain a large part of the systematic bias apparent in the NSS data.

Table 12. Distribution of total population, depending on different Occupations (B-II)

	State	A Agricul-ture	0 Other pri-mary produc-tion	1 Mining & quarry-ing	PM-food-stuffs, textiles and leather	PM-metals & chemi-cals	4 PM-other	5 Constr-uction & utilities	Com-merce	Trans-port, stor-age & commu-nication	Health edu-cation & admi-nistra-tion	Other services	Total = 100
1.	Punjab, etc.	76.60	1.31	0.12	4.01	0.65	2.78	2.40	3.22	0.92	3.43	4.56	3196
2.	Rajasthan, Ajmer	79.17	4.09	0.08	3.18	0.68	2.84	2.27	3.01	0.46	0.39	3.83	2722
3.	Uttar Pradesh	82.44	0.73	0.05	3.32	0.97	2.09	0.54	3.40	0.98	1.17	4.31	6217
4.	Bihar	79.42	3.51	2.03	0.95	1.18	2.43	0.42	2.05	0.22	0.51	7.28	4820
5.	Orissa	81.32	0.88	0.06	2.39	0.59	2.19	0.45	1.81	0.95	0.56	8.80	1584
6.	West Bengal	77.23	2.98	0.71	3.89	0.65	2.32	-	2.53	0.08	1.51	8.10	2267
7.	Assam, etc.	52.28	31.48	-	0.44	1.09	2.14	0.58	2.39	0.78	3.35	5.47	1651
8.	Madhya Bharat, etc.	87.32	3.48	-	2.33	0.22	1.40	0.27	0.48	-	1.51	2.99	2678
9.	Madhya Pradesh	75.27	2.88	0.27	3.20	0.37	2.18	0.24	4.33	1.13	2.32	7.81	3721
10.	Hyderabad	71.20	2.91	1.56	4.92	-	2.79	0.51	2.13	0.45	1.64	11.89	1759
11.	N. Bombay, etc.												
12.	Bombay Deccan	77.66	2.18	0.41	2.66	0.63	2.67	0.63	2.50	0.84	1.18	8.64	9080
13.	Madras	70.91	2.61	0.35	4.88	0.35	3.30	1.48	2.27	0.40	2.39	11.06	5647
14.	Mysore, etc.	71.55	2.20	-	5.56	0.57	2.35	0.54	3.48	0.41	3.34	10.00	2203
15.	All-India	76.74	3.42	0.45	3.17	0.64	2.49	0.82	2.65	0.63	1.65	7.34	47545

PM = Production and manufacture.

Table 13. Distribution of Male Earners by Principal Occupation (B-II)

	State	A Agriculture	0 Other primary production	1 Mining & quarrying	2 PM-foodstuffs, textiles and leather	3 PM-metals & chemicals	4 PM-other	5 Construction & utilities	6 Commerce	7 Transport, storage & communication	8 Health education & administration	9 Other services	Total = 100
1.	Punjab, etc.	77.42	2.60	0.08	3.67	0.60	2.42	2.34	3.10	0.94	2.66	4.17	960
2.	Bajasthan, Ajmer	76.48	7.23	0.08	3.41	0.63	2.62	2.27	2.59	0.60	0.46	8.63	903
3.	Uttar Pradesh	81.23	1.44	0.04	3.66	0.99	1.83	0.42	3.64	0.88	1.09	4.78	1979
4.	Bihar	78.74	4.10	2.49	1.08	1.25	2.12	0.52	2.10	0.37	0.83	6.40	1372
5.	Orissa	75.88	2.25	0.18	2.75	1.24	1.83	0.32	2.75	0.64	0.50	11.66	482
6.	West Bengal	77.26	5.56	0.74	1.86	0.96	2.12	-	2.73	0.26	0.93	7.58	738
7.	Assam, etc.	53.78	32.85	-	0.60	1.17	2.42	0.28	1.68	0.79	2.47	4.01	517
8.	Madhya Bharat, etc.	84.52	7.20	-	2.11	0.17	1.25	0.28	0.20	-	1.22	3.05	838
9.	Madhya Pradesh	73.43	4.99	0.33	3.51	0.35	1.89	0.33	3.70	1.18	1.97	8.32	1197
10.	Hyderabad	64.98	6.08	1.91	5.24	-	2.44	0.36	2.97	0.53	1.42	14.07	562
11.	N. Bombay, etc.												
12.	Bombay Deccan	76.48	3.32	1.29	2.71	0.59	2.57	0.63	2.30	0.74	1.44	7.93	2839
13.	Madras	71.05	3.91	0.36	4.55	0.44	3.35	1.71	2.33	0.21	1.12	10.97	1767
14.	Mysore, etc.	67.93	4.74	-	5.73	0.75	1.86	0.79	4.07	0.79	2.80	10.54	633
15.	All-India	75.37	5.06	0.67	3.15	0.69	2.30	0.83	2.63	0.62	1.38	7.30	14787

Table 14. Distribution of Female Earners by Principal Occupation (B-II)

	State	A Agricul-ture	0 Other pri-mary produc-tion	1 Mining & quarry-ing	2 PM-food-stuffs, textiles and leather	3 PM-metals & chemi-cals	4 PM-other	5 Constr-uction & utilities	6 Com-merce	7 Trans-port, stor-age & commu-nication	8 Health edu-cation & admi-nistra-tion	9 Other services	Total = 100
1.	Punjab,etc.	73.77	0.77	0.46	5.83	-	0.46	6.59	0.46	-	0.92	10.74	168
2.	Bajasthan, Ajmer	91.47	0.42	0.28	2.18	-	0.56	0.93	0.79	-	0.13	3.24	532
3.	UttarPradesh	82.41	0.17	-	3.69	-	1.13	2.33	3.75	-	1.64	4.88	438
4.	Bihar	78.11	7.74	3.07	0.93	0.44	2.58	-	0.71	-	-	6.42	452
5.	Orissa	77.78	0.58	-	6.15	-	2.34	1.02	2.63	-	-	9.50	151
6.	West Bengal	53.40	1.53	0.97	27.46	-	1.53	-	1.10	-	-	14.01	171
7.	Assam, etc.	27.60	66.01	-	0.44	-	-	-	1.21	-	0.66	4.08	218
8.	Madhya Bharat, etc.	86.03	2.91	-	1.29	-	1.68	0.97	1.10	-	0.26	5.76	869
9.	Madhya Pradesh	80.73	0.57	0.71	3.07	-	1.03	0.29	1.75	0.14	0.43	11.28	697
10.	Hyderabad	75.88	0.29	-	1.16	-	1.16	-	1.44	-	-	20.07	345
11.	N. Bombay, etc.												
12.	Bombay Deccan	82.45	1.94	-	1.55	0.07	0.82	0.36	0.56	-	0.07	12.18	1819
13.	Madras	73.59	2.13	0.35	2.24	0.08	0.93	0.69	1.20	-	-	18.79	914
14.	Mysore, etc.	72.20	1.41	-	8.03	-	0.35	-	1.41	-	1.41	15.19	288
15.	All-India	77.89	4.04	0.39	3.08	0.06	1.04	0.70	1.22	0.02	0.31	11.25	6552

Table 15. Proportion to total, of male and female earners, in different livelihood classes (B-II)

	Zone		Males Livelihood class				Females Livelihood class			
			A	0-4	6	5,7,8,9	A	0-4	6	5,7,8,9
1.	North India	NSS	81.22	7.97	3.64	7.17	82.41	4.99	3.75	8.85
		Census	83.63	5.97	2.34	8.06	86.80	4.49	1.24	7.47
2.	East India	NSS	75.06	13.73	2.25	8.96	65.13	25.62	1.18	8.07
		Census	82.11	7.78	2.97	7.14	82.09	10.10	2.20	5.61
3.	South India	NSS	70.25	12.73	2.78	14.24	73.27	6.67	1.25	18.81
		Census	73.99	11.78	3.61	10.62	74.48	12.01	2.75	10.76
4.	West India	NSS	76.48	10.49	2.30	10.73	82.45	4.38	0.56	12.61
		Census	79.58	8.39	2.61	9.42	85.41	6.14	1.18	7.27
5.	Central India	NSS	75.31	11.94	2.38	10.37	80.98	4.85	1.50	12.67
		Census	83.43	8.94	2.07	5.56	87.10	7.49	1.19	4.22
6.	North-west India	NSS	76.96	11.62	2.85	8.57	87.37	4.38	0.71	7.54
		Census	81.62	6.51	3.42	8.45	86.91	5.22	1.38	6.49
7.	Andanian-Nicobar Islands	NSS	6.58	77.37	3.70	12.35	-	90.39	1.92	7.69
		Census	10.14	57.47	4.82	27.57	3.79	88.41	1.21	6.59
8.	All-India	NSS	75.37	11.87	2.63	10.13	77.89	8.62	1.22	12.27
		Census	80.94	8.23	2.81	8.02	84.11	7.65	1.63	6.61

Livelihood Class A, Agriculture.
0-4, Primary poduction.
6, Commerce.
5,7,8,9, Transport, construction and utilities, other services and miscellanaous sources.

4. EMPLOYMENT

4.1 Actual employment, as distinct from occupation, of the rural population is likely to be less regular than that of the urban population. Therefore, in order to ascertain the employment situation more precisely, details of employment on three days preceding the day of interview, of all members of age 6 and above of the selected households,, were asked for. In Tables 16, 17, 18, and 19 are set out the relevant tabulations for all adult males, adult females, non-adult males and non-adult females. It should be noted that the information regarding the employment of each person was obtained for three days preceding the interview and that in the classification each person was classified three times in appropriate employment categories according to the manner in which he was employed on each one of the three days. In other words, the classification set out is not a classification of persons but a classification of 'person-days' and might be regarded as showing the disposition of the entire labour force on a day. In the present case, the investigation was done during October to March and hence the disposition of the labour force as shown by the tabulations might be taken to indicate the average conditions during this period.

4.2 In the questionnaire Schedule, 13 categories of employment were distinguished. Firstly a distinction was made according as the person on a day was or was not in the village of residence. When he was found in the village, his employment on a day was distinguished into a total of twelve categories, out of which 6 were 'earning' and 6 were 'not-earning' categories. In the present tables, two of the earning categories; namely, (i) employed on own farm and (ii) employed as exchange labour have been grouped into a single category called 'self-employed on farm.' Two other categories, one from the 'earning' and the other from the 'not earning' group are also combined to form a single category. They are (i) household but gainful work and (ii) domestic duties. The distinction between the two is obviously fine and in practice difficult to make on a uniform basis. The two categories are therefore combined into one and called 'household and domestic work.' Other categories of employment are retained as they were in the questionnaire. The disposition of the labour force in different categories is shown in the form of percentages of a total of 100 'person-days'. The actual total number of person-days on which the distribution for each state is based is shown in the last column.

4.3 A reference to Table 16 giving the employment details of adult males in different states, shows that considering all states together, 5.25 percent of the adult male labour force, was not found in the village of residence. This proportion is considerably large for Punjab, Rajasthan and Bihar (groups of states are referred to only by the principal states) for convenience. The proportions are low in Orissa, Assam, Hyderabad, Saurashtra, Bombay and Madras. In interpreting these figures it should be noted that it was left to the head of the household to enumerate the members of his household. Therefore, whenever a member did not actually stay with the household in the village, whether or not he was regarded as a member of the household was a matter for discretion of the head. Bearing in mind this important limitation the proportions might be taken to indicate the extent of emigration, from the area concerned.

4.4 Considering the earning categories of employment, it will be seen that in the whole of India, nearly 50 percent of the adult male labour force in rural area is engaged in agriculture, of which 38 percent is self-employed and about 12 per cent is employed for wages. These percentages are seen to differ to a considerable extent in different states. The highest proportion of farm employment is seen to be in Bombay and Saurashtra where over 60 percent of the force is farm-employed, about 50 percent self-employed and 10 percent employed for wages. Next to Bombay, in this respect, are West Bengal and Assam where the self-employed on farm amount to over 40 percent. Hired employment on farm is not comparatively large in West Bengal but is very large in Assam, obviously due to the tea and other plantations in that state. Hired farm employment is highest in Madhya Pradesh and is also very high in Madras and Bihar. The farm employment in Madhya Pradesh is peculiar. There, while hired employment in farm is maximum, the self-employment in farm is the minimum; the self-employment in farm accounts for only about 26.5 percent and the hired employment is nearly 20 percent. These figures obviously need a check up against the actual situation for, if true, they are undoubtedly serious. The proportions of hired farm employment are very small in Punjab and Rajasthan and also to some extent in Uttar Pradesh. It would be worthwhile relating these differences to the different systems of tenure and of proprietary rights in land prevalent, in different states.

4.5 Considering the all-India figures, it will be seen that about 21 percent of the adult male labour force in rural area is employed in non-farm employment, about 12 percent of which is self-employed and 9 percent employed for salary or wages. Self-employment in non-farm occupations is high in Rajasthan, Madhya Bharat and Vindhya Pradesh, where it accounts for nearly 20 percent of the labour force. Probably this has to be partly explained on account of the livestock industry, which is important in these states. Non-farm employment is relatively small, in: West Bengal and Orissa.

4.6 If we combine the hired employment in farm and the hired employment in non-farm occupations, we see that about 20 percent of labour force is employed for salary or wages. There is, of course, a good deal of variation between different states in this respect. It is very high in Assam and Madhya Pradesh where it is more than 30 percent. It is also high in Hyderabad and Madras where it is nearly 25 percent and in Bihar and Orissa where also it is nearly 23 or 24 percent. It is very small in Punjab Rajasthan and Uttar Pradesh and also rather small in Madhya Bharat, Saurashtra and Bombay.

4.7 The six 'not-earning' categories of employment account for about 25 percent of the total adult male labour force in rural India. This percentage does not differ greatly in different states though there are some exceptions. The percentage is very low in Assam where it is only about 17.6. It is also low in Saurashtra and Bombay where it is between 17 and 18. On the other hand the percentage is very high in Hyderabad and in Mysore and Travancore, where it is between 28 and 29.

4.8 These 'not-earning' categories might be looked upon as different forms and degrees of unemployment. The most important among them is of course the category termed 'unemployment' by which is meant the overt and involuntary unemployment. Considering the all-India figures, this accounts for 4 percent of the labour force. This is very high in Hyderabad, Madras, Mysore and Travancore where it accounts for nearly 8 percent of the total labour force. It is very small in Assam and the Bombay Deccan where it accounts for less than one percent. In most other states, it lies between 3 and 4 percent.

4.9 The two categories termed 'ill-health' and 'disabled' are forms of involuntary unemployment on account of physical disability, one temporary and the other permanent, Considering all-India figures, the former accounts for 4 percent and the latter for 2.5 percent of the total labour force. Permanent disabilities are more or less uniform in all states except that they are rather high in Rajasthan, Saurashtra and North Bombay where they account for 4 percent of the labour force. In Assam the percentage is only 1. Temporary illnesses are more frequent in Rajasthan, Orissa, West Bengal, Hyderabad, Mysore and Travancore where they account for more than 5 percent of the labour force.

4.10 There are three categories of voluntary unemployment. Of these the school-going population, though not-earning, need not be called unemployed. The proportion of the adult males going to school is exceptionally high in Mysore and Travancore where it is 4.6 percent as compared to the all-India average of 1.4 per cent The category 'not-seeking work' includes persons who were taking rest or enjoying a holiday or who could not work on a day on account of bad weather etc. They account for 5.72 percent in the all-India averages. The proportion is excessively large in Madhya Pradesh where it is more than 11 percent. Earlier we have noted that in Madhya Pradesh the proportion of self-employed on farm is too small and, that the proportion of hired labour on farm is too large. If those figures are correct and if the present figure for not seeking work is correct, the three figures put together give a picture of a number of big land-lords managing their farms with hired labour while doing little by themselves. These figures undoubtedly deserve more careful attention.

4.11 The category of persons engaged in 'household and domestic work' accounts for nearly 7 percent in the all-India averages. This proportion is very high in Punjab, Uttar Pradesh and West Bengal where it exceeds 11 percent. It is not impossible therefore that part of the unemployment in these states might be disguised in this form.

4.12 In interpreting the percentages in categories of 'not-seeking work' and engaged in 'household or domestic work' as forms of disguised unemployment, it should be borne in mind that the tabulation of the labour force days makes no allowance whatever for holidays, etc. Judged by urban standards of holidays and leave to which the urban workers are ordinarily entitled, the percentages in the not-earning categories are indeed not high. For, it should be noted that an allowance of one weekly holiday accounts for 14 percent of the urban labour force.

4.13 A reference to Table 17 giving employment details of adult females in different states, shows that in all-India averages, nearly 60 percent of the adult females labour force in rural area is engaged in household and domestic work. This was to be expected. This proportion is however very high in Punjab, Uttar Pradesh and West Bengal where it is nearly 73 percent. In fact, even self-employment of women on farm is common only in the Bombay Deccan where it accounts for more than 30 percent of the total adult female labour force. It is also high in Rajasthan, Saurashtra and North Bombay where it accounts for

22 percent of the total. In the remaining states, self-employment of women on farm is more frequent in the south than in the north India. Hired employment of women on farm is common, apart from Assam, only in Madhya Pradesh, Hyderabad, Bombay Deccan and Madras. In north India generally, it is much less common. Permanent disabilities account for a larger proportion of the female labour force than of the male labour force. In spite of the almost unlimited field of employment that the domestic duties offer to adult women, it is a little surprising that nearly 3 to 4 percent should have reported as 'not seeking work'. There is therefore, some case for considering this category as a form of disguised unemployment. It is considerable in the Bombay Deccan, Madras, Mysore and Travancore. A surprisingly large proportion of the female labour force in Orissa and Bengal is reported as school-going, the proportions being nearly 3 percent. The proportions are larger in both the cases than the corresponding proportions for the adult males; they are also larger than similar proportions in Mysore and Travancore. The figures therefore look rather suspect.

4.14 In Table 18 are given employment details for the non-adult males. Considering the all-India figures, only about 32 percent is accounted for, as school-going. This proportion is very high in Mysore and Travancore where it exceeds 62 percent. It is also high in the Bombay Deccan where it is more than 45 per cent. It is very low in Rajasthan, Madhya Bharat and Vindhya Pradesh and also to some extent in Hyderabad. In the remaining states it is between 30 to 35 percent. Self-employment of non-adult male labour on farm is common only in Rajasthan, Saurashtra and Bombay where the self-employment on farm of adult female labour was also noted, to be high. In Rajasthan, Orissa and Madhya Bharat there is seen to be a considerable self-employment of non-adult male labour in non-farm occupations. In Rajasthan and Madhya Bharat they are likely to be livestock occupations. It is not clear, what it could be in Orissa unless some forest industries do offer self-employment to children.

4.15 Table 19 gives details for non-adult females. Considering the all-India figures, only 10 or 11 percent of the girls are accounted as in school, which is only one-third of the corresponding proportion for boys. Nearly 42 percent of the girls are seen as engaged in household and domestic work. The proportion in school is very high in Mysore and Travancore where it is 45 percent. It is also considerable in Bombay, Madras and Bengal. The proportion is extremely low in Rajasthan, Madhya Bharat and Vindhya Pradesh. The self-employment of girls on farm is also more frequent in Rajasthan, Saurashtra and Bombay. In Rajasthan, in addition, there is a considerable proportion of self-employed labour in non-farm occupations.

4.16 In Tables 20, 21, 22 and 23, we give more detailed tabulations of all-India data. In the first instance, separate details are shown for the agricultural and the non-agricultural families. Secondly, while in the state tables only a broad age-distinction such as adult and non-adult was done, here we give employment details for males and females by a much fuller breakdown by age.

4.17 In Table 20 are shown employment details for males in agricultural families. An examination of the figures for different age-groups is interesting. We might begin with the youngest age-group of ages 6-7. (For children under 6, employment details were not obtained). The largest proportion is to be found in the category of ‘not-seeking work’. It should be noted that this category also excludes school-going so that 46.71 percent of boys of ages 6-7 in rural India, neither go to school nor are otherwise occupied. The proportion of school-going children in this age-group is 37.67 percent. In the next age-group 8-12, the proportion of ‘not-seeking work’ is reduced to 24.13 percent but with no increase in the proportion of school-going children. On the other hand a considerable proportion of boys in this age-group begin to earn. The proportion of earners in the age-group 6-7 was only 5 or 6 percent and practically all of them were self-employed in their family business. In the age-group 8-12, nearly 24 percent of boys are reported earners, and though most of them are self-employed in their family businesses, about 4 percent are employed for wages. In addition, about 10 percent are reported to be assisting in the household and domestic work, such as tending of cattle. This proportion at the age-group 6-7 was only 5 percent. The proportion of disabled children at the age group 6-7 is very highs nearly 3 percent and the fact that this proportion drops to 1.16 percent in the next age-group and to 0.22 in the age group 13-17, suggests that these disabled children at young ages are subjected to rather high mortality.

4.18 The proportions both of boys going to school and of not seeking work drop considerably in the next age-group 13-17. About 20 percent of boys of this age go to school and about 8 percent neither go to school nor are otherwise occupied. In interpreting this last statement, it should be noted that while those going to school should be more or less regular school-goers (on school-holidays also the boys were recorded as school going), those in the category of not seeking work are not necessarily those not seeking working throughout the year. This being 2 classification of person-days and not of persons, it is obvious that the proportion of boys not seeking work throughout the year should be considerably smaller than 8 percent

4.19 In the age-group 13-17 the proportion of earning boys shows a great increase. Actually nearly 57 percent of the boys are reported to be earning and of these about 11 percent are employed for wages. In addition about 10 percent assist in household work.

4.20 The proportion of boys going to school and those not seeking work both drop further in the next age-group 18-22 and the two categories together account for less than 10 percent of the boys in this age group. The proportion of those not in the villages of residence shows a sudden increase at this age, and if a part of these emigrants are supposed to be earners, actually more than 75 percent of the boys at this age are seen to be earners. As a majority of the emigrant earners must be working for wages, it would appear that about 15 percent of the boys of the age-group 18-22 are employed for wages.

4.21 In the next age-group 23-27, the proportion not-seeking work remains unchanged, but the proportion of school-going becomes negligible. The proportion of earners rises to nearly 87 percent but there is no great, increase in the proportion of those earning for wages.

4.22 The pattern of employment in the next two age-groups of 28-32 and 33-38 remains more or less the same as in the, earlier age-group 23-27 except that they show a considerable increase in the proportion of emigrants. In these age-groups the proportions of emigrants are seen to be over 6 percent. The pattern further remains the same in the next three age-groups of 38-42, 43-47 and 48-52 except that in these age-groups the proportions of those in ill-health show considerable rise and there is some drop in the proportion of emigrants. The effects of old age become apparent only from the next age-group. In the last three age-groups of 53-57, 58-62 and 63 and above, the proportions of those disabled, in ill-health and not seeking work gradually increase until when in the last age-group, the: three categories account for nearly 50 percent of the males. The proportions of earners and emigrants consequently decrease.

4.23 The pattern of employment of females through different ages is characteristically different from those of males. Confining our attention to agricultural families, we might examine Table 21 from this point of view. As we have noted earlier the pattern of employment of adult males takes shape at the age-group 23-27. With females, this occurs a little earlier, namely, at the age-group 18-22. The effects of old age also became apparent somewhat earlier, namely, from the age-group 48-52.

4.24 The proportion of school-going among girls is of course very much smaller than among boys. Even in the youngest age-group 6-7, this proportion is only 16.37 percent and at this age, 53.23 percent of the girls do neither go to school nor are otherwise occupied. Over 20 percent are reported to assist in the domestic duties. The proportion of disabled girls, as of disabled boys, is very high at this young age and shows sudden drop in the next two age-groups, indicating high mortality among the disabled children.

4.25 The proportion of school-going, already small, drops very rapidly in the subsequent age-groups and becomes negligible in the age-group 18-22. The proportions of not seeking work drop much more rapidly, and at ages 8-12, over 40 percent, at ages 13-17, over 60 percent and at ages 18-22 nearly 65 percent are reported to be engaged in household and domestic work. The proportion of earners in the three age-groups are 12, 24 and 24 percent, respectively. Corresponding proportions for the boys, it will be remembered, are 23, 57 and 75 percent, respectively. The difference is of course more than compensated by the larger proportions of girls of these ages who are engaged in domestic duties.

4.26 The proportions of the female emigrants are very high in the age-groups 13-17 and 18-22. In fact, in these age-groups they are higher than the corresponding proportions among males. The nature of emigration among, males and females at these ages is presumably different. While the emigration among males steadily increases in higher age-groups, that among females gradually decreases. It appears, therefore, that while the emigration among males is largely for earning of livelihood, that among females is more for domestic reasons. Probably a large part of it might be explained by the young wives visiting their fathers' home during their earlier maternities.

4.27 While on the one hand the employment pattern of adult females is thus seen to take shape about five years earlier than among males, the effects of old age among females are also seen to become apparent about five years earlier. As we have noted, the effect of old age among males becomes apparent from the age-group 53-57. Among females it is seen to become effective at the earlier age-group 48-52. The proportion of disabled, which in most cases should be no more than old age disabilities, suddenly shoots up to above 7 percent in this age-group. This proportion then rapidly rises until in the final age-group of 63 and above, nearly 50 percent of females are reported as disabled. This proportion among males is only 26.44 percent. Underlying these large proportions of disabled among females, are of course the physiological differences between males and females. The sociological factors affecting the different economic roles that the male and the female - are called upon to play are, however, likely to be more important. While among adult males above 80 percent are earners, among females the proportion is only about 25 percent. On the other hand about 65 percent of the adult females are seen to be engaged in household and domestic duties. Apparently the males take a somewhat longer period of training and upbringing to enter into their respective occupations than do the females before they undertake domestic responsibilities. Consequently in their old age they are also relieved earlier from the domestic responsibilities by their daughters and daughters-in-law replacing them, than are the men by their sons. The women are thus seen to begin and to conclude their normal working life somewhat earlier than the men do.

4.28 In Tables 22 and 23 we give employment details for males and females, among the non-agricultural families. In both the cases the employment patterns are strikingly different from those of the agricultural families, the characteristic feature being a high level of unemployment among the non-agricultural families as compared with the agricultural families. Thus among males the reporting of unemployment begins in the young age-group of 13-17 where the proportion of unemployment is above 6 percent. It remains equally high even in the oldest age group of 63 and above. Throughout the period from age 13 to the ripe age of 63 and above, the unemployment remains high and ranges between 6 and 9 percent. The proportion of unemployed among females, though relatively smaller, is very high compared with the situation in agricultural families where the proportion of unemployment in no age-group much exceeds 1 percent. Among the non-agricultural families, the proportion of unemployment remains between 3 to 5 percent at all ages between 13 and 52.

4.29 Among adult males about 8 or 9 percent are reported to be self-employed on farm. This must be largely due to a misclassification by the investigator of a few agricultural families as non-agricultural. About 20 percent are self-employed in non-farm business. On the other hand, nearly 40 to 45 percent of the males are employed for wages divided about equally between farm and non-farm labour. Among adult females about 20 percent are employed for wages, about 13 percent on farm and 7 percent elsewhere. To sum up, therefore, a high level of employment for wages and consequently a relatively higher level of unemployment are the characteristic features of the employment pattern among the non-agricultural families.

4.30 The category of unemployed was earlier commented upon. In order to appreciate the dimensions of unemployment, the reported unemployment should be related to those offering for hired or salaried employment. In Table 24 we extract the necessary categories from Tables 16, 17, 18 and 19. The figures are given separately for all states and separately for adult and non-adult males and females. For instance, considering the adult males, in the first column is given the percentage of those employed for wages or salaries in farm and non-farm occupations. In the next column is shown the percentage reported, to be unemployed. In the third column, the unemployed is expressed as a percentage of the total of the first two columns, being the percentage ‘seeking’ hired employment. Thus related, it will be observed that nearly 17 percent of the rural population, offering for hired employment is unemployed. This percentage is higher in the south, except in the Bombay Deccan, than in the north. The percentage is nearly the same for adult females. Among children of both sexes it is nearly 8 or 9 percent. The unemployment is generally higher in the south where it is nearly 25 percent, though the Bombay Deccan is a remarkable exception with very lot unemployment. In the north, the percentage is lower, nearly 15 percent, though Rajasthan is again an exception with a very high proportion of unemployed among those offering for hired employment. It should be noted nevertheless that in this case, the proportion offering for hired employment is itself considerably smaller than in most other states and particularly in the southern states.

4.31 Table 25 gives a similar statement for the whole of India where a distinction between the agricultural and the non-agricultural families is made and the distinction between the adult and the non-adult is extended by means of a fuller age-distribution as given in Tables 20, 21, 22 and 23. We have earlier noted that unemployment is prevalent on a much larger scale among the non-agricultural families than among the agricultural families. However, when the unemployment is related to those offering for hired employment, as we do in these tables, it is seen that the incidence of unemployment is about the same in two cases; if anything, it is a little larger among the agricultural families than among the non-agricultural families. By age-group, the unemployment is seen to be lowest between ages 28 to 37 among males and between 18 and 27 among females.

4.32 Among the many categories into which the person-days were distributed in Tables 16, 17, 18 and 19, the two categories of hired employment, namely, hired employment on farm and in non-farm occupations are of special interest. An attempt was made in the Schedule to make available independent estimates of employment in these categories. The details of employment in C-II were obtained from the employees themselves. In C-III, the corresponding information was obtained from the employers, asking each selected family the details regarding the employment given by that family to others during the preceding week. The details of employment given in C-II were only for three days immediately preceding the interview. To make them comparable with the details obtained in C-III they were brought to a weekly basis by multiplying by 7/3. Thus compared, the two sets of data should agree except for the random errors of sampling and biases of response, provided the sampled population covered the related employers and employees. The random errors arise out of the fact that the data are based on only a small sample of families from each village. The biases of response are of various types; we shall indicate some of them in the following. Mainly there might be a bias of either over or under-reporting either by the employers or by the employees; there might also be some differential bias affecting the male and female employees.

4.33 The possibility of an incomplete coverage of the related employer and the employee population arises out of the fact that even conceptually the NSS sample covers only the rural households. On the one hand it does not cover the urban area, roughly consisting of all towns of above five thousand population. On the other hand it leaves out all institutions other than the household. Consequently if an employee seeks employment in a neighbouring urban centre, as often do the casual labour, or where even though the employee is employed in the village of residence the employer resides outside the rural area, as does an absentee landlord managing his farm with hired labour, it is obvious that the sample of rural families fails to cover some of the employers giving employment to them. Similarly, where the employer is an institution such as government, a school or a society, the sample of household falls to cover it. Therefore, in all such cases it is obvious that the employment reported in C-III by the employers will fall short of that reported in C-II by the employees. There is also the other possibility of missing some of the employees. It arises mainly out of a certain definitional ambiguity in listing the family members in the selected families. When in some cases the farm or domestic servants were provided board with the employer they were sometimes listed as members of the employer's family. In such cases, the employees were recorded as self-employed in the family business. On the other hand in C-III the employer reported their employment by him. Sometimes, the employees were not listed as members of the family of the employer, but could not be constituted into separate families as they were discovered only after the sample of families was selected. In these cases, therefore, the reporting in C-II would fall short of the employment reported in C-III.

4.34 We shall now proceed to compare the employment reported in C-II and C-III. In order to make the data in the two comparable, the following adjustments were made: The data in C-II was based on employment details for only three days while that in C-III was based on a reporting for a week. The former have been brought to one week basis by multiplying by 7/3. Secondly, the data in C-II has been tabulated for adult and non-adult males and females. In C-III only a three-fold distinction as between male, female and children was made. Hence the non-adult males and females in C-II have been combined and compared with the children in C-III. Thirdly, in noting the hired employment in C-II, only a two-fold distinction was made as between hired employment on farm and in non-farm occupations. On the other hand, in C-III, a three-fold distinction was made as employment on farm, in non-farm business and domestic work. The non-farm business and the domestic employment in C-III have, therefore, been combined and compared with the non-farm hired employment in C-II. With these three adjustments, the data in C-II and C-III become formally comparable. In both the cases the number of person-days or labour days were worked out. To facilitate comparison, in Table 26, we express the labour-days in each category as reported in C-III as percentages of the person-day in the corresponding categories from C-II.

4.35 To begin with, let us examine the all-India figures appearing in the last line. Considering first all categories of employment appearing in the last column, it appears that reporting in C-III forms 97.16 percent of employment reported in C-II. For all practical purposes, this would be regarded as an excellent agreement. However, a detailed comparison between different categories of employment and in different states shows that this is no more than a fortuitous coincidence.

4.36 Thus distinguishing the farm and the non-farm employment, we see that the farm employment reported in C-III is 43 percent more than that reported in C-II; on the other hand, the non-farm employment reported in C-III is only 30 percent of that reported in C-II. The latter phenomenon, namely, of underreporting of non-farm employment in C-III has occurred in all states and in no state the reporting of the non-farm employment in C-III is much above 50 percent of that reported in C-II. It might be thought that this could happen on account of mis-classification of employment into farm and non-farm categories. In the particular instance, it would mean that in many cases where the employee reported as employed in non-farm business or in domestic work the employer reported him to have been employed on farm. Though this is not impossible, a more plausible explanation appears to be the fact of incomplete coverage of the sample; firstly in respect of the urban areas and secondly in respect of institutions other than the households; for it is obvious that a large part of the non-farm employment that the rural families seek would be located in urban areas and, that in many cases the employer would be an institution. In such cases while the non-farm employment would be appropriately reported in C-II, the sample would miss the corresponding reporting by the employer in C-III.

4.37 Considering the farm employment, though in all-India figures, the reporting in C-III is considerably more than that in C-II this is not true in all states. The most obvious exceptions are Bihar, Orissa, West Bengal and Assam. The most extreme exception is that of Assam where the farm employment reported in C-III is only 10 percent of that reported in C-II. This must be on account of the fact that due to the large plantations in that state, even the farm employment is considerably institutionalised and hence not reported in C-III. In the three states of Bihar, Orissa and West Bengal the under-reporting of farm employment in C-III is probably on account of the bigger landlords, though managing their farms, being - absent from the villages.

4.38 In the remaining states, except in Punjab, the farm employment reported in C-III is considerably in excess of that reported in C-II. The possibilities of discrepancies on account of the ambiguity of recording the permanent servants boarding with the employer, have been already mentioned. Another reason appears to be a certain reporting bias on the part of the employees in reporting the employment of females. Thus it will be observed that in most of the states where the farm employment in C-III is in excess of that iii C-II it is in respect of the employment of females on farm that the excess is larger. It appears, therefore, that there has been in fact some under-reporting of female employment by the employees. On the other hand there is apparent a considerable underreporting of child employment by the employer. However, this must be largely attributed to a genuine ignorance of the age of the employees. The distinction between the adult and child in C-III was left to the reporting employer while that in C-II was arrived at by us by actual sorting of employees by ages, those under 15 being defined as non-adults. It is perfectly natural, therefore, that in many cases of child employment the employers reported them to be adults. Another source of discrepancy between the employer and employee reporting of employment is the migrant labour. Thus, when persons from the neighbouring and other places seek employment in a village, their employment will be duly reported by the employer. On the other hand, when persons leave a village even temporarily and seek employment elsewhere, they are often likely to be altogether omitted from the enumeration of the family members. It will be noted that for the purposes of noting the employment details in C-II, we had provided for a category called ‘outside the village’. However, as will be seen from the earlier tables, the reported person-days in this category are nowhere sufficient to account for the large discrepancy between the employer and employee reporting of farm employment. Therefore, it seems possible that there has been some underenumeration among persons who had left the village even temporarily.

4.39 Schedule C-III gives person-days employed in farm, non-farm and domestic work, as also wages paid to the labour so employed. It is, therefore, possible to derive wage rates for different kinds of labour employed for different purposes. In Table 27 are given wage rates for male, female and child labour employed in farm, non-farm and domestic work in different states. It should be noted that these data are reported by the employer. It will be seen that the all-India wage rates are approximately Re. I for male, As. 10 for female and As. 8 for child labour. Wage rates are generally very high in Punjab, Bihar, West Bengal and Assam. They are very low in Madhya Pradesh and also though to a smaller extent, in Orissa, Madhya Bharat, and Mysore-Travancore.

Table 16.

Percentage Distribution of Adult Male-days in Different Employment Categories (C-II)

	STATE	Category of employment											
		Out of village	Self-employed on farm	Hired farm labour	Self-employed in non-farm occupation	Hired non-farm labour	House-hold work and domestic duties	School	Not seeking work	Unem-ployed	Ill-health	Dis-abled	Total =100
1.	Punjab, etc.	8.23	37.42	5.58	12.44	9.35	11.50	0.82	5.52	3.45	3.34	2.35	2861
2.	Rajasthan, Ajmer	9.57	37.88	2.74	20.07	5.23	5.47	0.41	4.94	3.51	6.18	4.00	2335
3.	Uttar Pradesh	4.51	39.67	7.18	14.46	6.74	11.70	1.80	5.59	2.36	3.38	2.61	6004
4.	Bihar	8.59	33.02	14.00	10.93	9.93	7.03	1.79	5.20	3.58	3.90	2.03	4145
5.	Orissa	3.64	33.73	9.61	11.28	13.65	9.30	1.83	5.66	3.93	5.02	2.35	1540
6.	West Bengal	6.80	41.38	12.95	6.91	5.99	11.13	1.63	3.98	2.74	5.37	1.12	2164
7.	Assam, etc.	2.25	42.30	17.70	7.28	12.88	8.31	2.68	2.89	0.74	2.02	0.95	1557
8.	Madhya Bharat,etc.	5.87	31.66	9.01	18.86	6.08	9.40	0.66	7.89	3.26	4.21	3.10	2510
9.	Madhya Pradesh	6.34	26.45	19.18	10.53	12.45	3.64	0.24	11.23	3.81	4.10	2.03	3290
10.	Hyderabad	1.47	31.29	12.19	13.14	13.23	4.33	0.53	6.49	8.46	5.33	3.54	1561
11.	N. Bombay, etc.	3.11	50.87	9.52	10.70	7.56	1.84	0.58	4.05	5.10	2.61	4.06	3501
12.	Bombay Deccan	2.35	51.28	12.51	10.08	6.35	4.13	1.10	5.47	0.93	2.54	3.26	4289
13.	Madras	3.40	39.54	15.33	8.33	9.22	4.06	1.42	4.86	7.66	4.12	2.06	5232
14.	Mysore, etc.	5.16	33.00	10.48	10.91	11.15	4.31	4.63	5.61	6.61	5.76	2.38	2058
15.	All-India	5.25	38.03	11.29	11.87	8.87	6.94	1.38	5.72	4.10	3.99	2.56	43047

Table 17.
Percentage Distribution of Adult Female-days in Different Employment Categories (C-II)

	STATE	Category of employment											
		Out of village	Self-employed on farm	Hired farm labour	Self-employed in non-farm occupation	Hired non-farm labour	House-hold work and domestic duties	School	Not seeking work	Unem-ployed	Ill-health	Dis-abled	Total =100
1.	Punjab, etc.	4.72	4.76	2.41	2.11	1.71	72.80	0.13	2.25	0.22	3.46	5.43	2519
2.	Rajasthan, Ajmer	7.29	22.30	2.31	8.74	2.40	43.94	0.50	1.79	1.08	2.60	7.05	2145
3.	Uttar Pradesh	2.27	5.95	1.26	2.82	2.28	74.15	0.12	3.07	0.98	2.86	4.24	5379
4.	Bihar	3.15	5.50	4.74	3.72	3.44	65.39	1.03	1.69	0.92	4.15	6.27	4210
5.	Orissa	2.62	1.32	2.46	3.35	1.96	69.54	3.77	4.12	1.51	1.78	7.57	1644
6.	West Bengal	1.50	2.90	3.53	1.29	2.48	73.04	2.73	2.84	1.34	3.01	5.34	2087
7.	Assam, etc.	0.44	11.94	14.72	0.88	7.19	54.42	-	3.34	0.29	1.61	5.17	1304
8.	Madhya Bharat,etc.	1.53	7.00	6.20	2.91	2.24	68.49	-	3.96	1.27	2.73	3.67	2436
9.	Madhya Pradesh	4.35	10.69	10.92	3.95	6.25	49.45	-	4.27	2.16	2.77	5.19	3365
10.	Hyderabad	1.75	13.45	12.42	3.08	4.31	45.33	-	3.40	4.60	3.13	8.53	1501
11.	N. Bombay, etc.	2.58	22.70	3.80	2.05	1.97	54.20	-	2.16	2.12	2.06	6.36	3319
12.	Bombay Deccan	0.86	30.87	9.12	1.90	1.16	39.22	1.86	5.30	0.58	3.37	5.76	3974
13.	Madras	1.76	11.41	12.41	2.95	3.00	49.44	0.30	5.25	5.01	4.00	4.47	5206
14.	Mysore, etc.	1.92	11.75	7.96	0.73	4.76	55.13	1.78	6.26	2.37	3.53	3.81	1927
15.	All-India	2.69	11.04	6.39	2.99	3.09	59.25	0.69	3.49	1.89	3.08	5.40	41016

Table 18.
Percentage Distribution of Non-Adult Male-Days, in Different Employment Categories (C-II).

	STATE	Category of employment											
		Out of village	Self-employed on farm	Hired farm labour	Self-employed in non-farm occupation	Hired non-farm labour	House-hold work and do mestic duties	School	Not seeking work	Unem-ployed	Ill-health	Dis-abled	Total =100
1.	Punjab, etc.	2.21	9.43	2.56	4.98	2.69	14.14	35.35	26.11	-	2.15	0.38	1200
2.	Rajasthan, Ajmer	1.30	17.17	1.02	24.03	2.77	5.75	16.67	26.91	-	2.27	2.11	1100
3.	Uttar Pradesh	0.80	8.32	0.94	6.05	3.82	12.68	31.01	31.89	1.18	1.25	2.06	2271
4.	Bihar	2.85	7.18	3.44	6.85	2.56	16.11	31.91	24.39	0.55	1.57	2.59	1815
5.	Orissa	0.74	5.84	2.90	15.52	3.55	7.92	32.40	19.57	-	2.08	9.48	612
6.	West Bengal	0.96	6.11	6.83	3.11	3.08	12.68	36.47	19.86	1.48	2.73	6.69	860
7.	Assam, etc.	0.59	11.36	7.73	2.05	3.07	14.11	33.84	23.97	0.18	1.99	1.11	854
8.	Madhya Bharat,etc.	1.08	6.08	2.89	12.55	4.64	12.70	11.35	43.46	0.17	1.89	3.19	1201
9.	Madhya Pradesh	3.29	5.21	7.59	4.87	5.62	11.88	28.83	30.47	0.18	1.69	0.37	1406
10.	Hyderabad	2.15	8.74	7.09	8.81	3.98	10.42	25.36	29.12	1.57	0.69	2.07	653
11.	N. Bombay, etc.	0.77	20.62	2.35	6.72	3.01	6.06	33.24	25.11	0.89	0.83	0.40	1887
12.	Bombay Deccan	0.49	17.72	3.03	5.85	1.69	5.79	45.62	18.44	-	1.37	-	1988
13.	Madras	1.05	8.49	6.23	8.56	2.94	9.73	31.01	28.10	1.57	0.92	1.40	2167
14.	Mysore, etc.	0.33	5.08	1.80	6.14	0.96	5.99	62.68	15.31	0.24	0.75	0.72	831
15.	All-India	1.38	10.09	3.81	7.97	3.23	10.71	31.78	26.92	0.66	1.50	1.95	18845

Table 19.
Percentage Distribution of Non-Adult Female-Days in Different Employment Categories (C-II).

	STATE	Category of employment											
		Out of village	Self-employed on farm	Hired farm labour	Self-employed in non-farm occupation	Hired non-farm labour	House-hold work and domestic duties	School	Not seeking work	Unemployed	Ill-health	Disabled	Total =100
1.	Punjab, etc.	2.50	2.96	0.26	2.64	0.42	52.98	7.75	28.38	-	1.82	0.29	1138
2.	Rajasthan, Ajmer	4.15	12.02	1.48	11.40	0.72	41.96	1.93	24.27	0.18	0.29	1.60	1049
3.	Uttar Pradesh	2.13	4.06	0.30	1.92	0.35	50.08	6.37	33.28	0.19	0.41	0.91	2058
4.	Bihar	1.96	2.88	3.39	1.09	1.78	48.50	7.51	22.29	0.64	1.94	8.02	1599
5.	Orissa	3.62	0.42	3.10	2.35	0.42	49.30	4.98	23.59	1.13	0.80	10.29	532
6.	West Bengal	1.70	0.42	0.61	0.67	0.42	52.91	12.32	25.80	-	0.76	4.39	826
7.	Assam, etc.	0.09	6.62	3.12	0.34	4.49	44.15	8.89	30.17	-	-	2.13	585
8.	Madhya Bharat,etc.	1.84	2.20	1.49	2.79	0.36	41.77	1.51	42.28	0.36	0.77	4.63	1193
9.	Madhya Pradesh	3.95	4.97	6.68	2.53	2.23	37.23	7.06	31.21	0.62	2.54	0.98	1247
10.	Hyderabad	2.54	8.43	5.00	1.33	2.30	40.22	6.17	29.45	1.82	1.09	1.65	620
11.	N. Bombay, etc.	2.31	12.74	1.49	2.04	0.97	34.12	16.92	28.48	0.22	0.59	0.12	1494
12.	Bombay Deccan	0.26	13.15	2.88	2.18	0.14	35.84	14.34	30.30	-	0.56	0.85	1820
13.	Madras	0.83	5.13	6.13	1.93	1.91	37.25	14.55	30.87	0.60	0.47	0.33	2168
14.	Mysore, etc.	2.04	3.66	3.45	0.81	0.96	28.00	45.55	14.39	-	0.60	0.54	834
15.	All-India	2.09	5.70	2.84	2.45	1.18	42.39	10.85	28.92	0.38	0.93	2.27	17163

Table 20.
Percentage Distribution of Age-Classified Male-Days of Agricultural Families in Different Employment Categories (C-II).

		Category of employment											
	Age group (years)	Out of village	Self-employed on farm	Hired farm labour	Self-employed in non-farm occupation	Hired non-farm labour	House-hold work and domestic duties	School	Not seeking work	Unem-ployed	Ill-health	Dis-abled	Total =100
1.	6-7	0.89	2.83 .	0.13	2.35	-	4.91	37.67	46.71	0.75	0.97	2.79	2259
2.	8-12	1.17	11.04	2.11	8.24	1.64	10.06	37.88	24.13	1.17	1.40	1.16	6216
3.	13-17	1.46	34.72	6.25	11.44	4.55	10.44	19.85	8.10	1.34	1.63	0.22	4110
4.	18-22	3.81	51.21	7.26	9.59	5.51	7.26	4.77	4.89	2.96	2.20	0.54	4461
5.	23-27	3.85	55.77	7.31	8.80	6.51	7.08	0.34	4.76	3.04	2.35	0.29	3489
6.	28-32	6.07	55.26	7.97	8.78	4.72	7.04	0.03	5.60	1.82	2.63	0.08	3837
7.	33-37	6.19	55.62	7.49	7.56	5.40	6.63	-	5.65	2.01	2.70	0.75	2778
8.	38-42	5.60	54.55	6.20	8.38	4.25	7.87	-	5.13	3.02	4.05	0.95	2517
9.	43-47	4.05	54.94	5.01	10.88	4.85	7.94	-	5.55	1.71	4.11	0.96	1875
10.	48-52	4.61	56.39	6.12	7.27	2.61	7.57	-	6.12	3.05	4.31	1.95	1995
11.	53-57	6.20	50.27	3.68	8.95	3.36	9.77	-	7.05	2.31	4.94	3.47	951
12.	58-62	3.44	44.25	2.91	7.70	2.91	9.87	-	7.92	3.29	7.40	10.31	1338
13.	63 & over	2.08	30.76	1.36	6.18	1.36	7.97	-	9.34	0.72	13.79	26.44	1392
14.	All ages	3.50	40.57	5.23	8.47	3.85	8.13	11.41	11.56	2.02	3.05	2.21	37218

Table 21.
Percentage Distribution of Age-Classified Female-Days of Agricultural Families in Different Employment Categories (C-II)

	Age group (years)	Category of employment											Total =100
		Out of village	Self-employed on farm	Hired farm labour	Self-employed in non-farm occupation	Hired non-farm labour	House-hold work and domestic duties	School	Not seeking work	Unem-ployed	Ill-health	Dis-abled	
1.	6-7	1.05	1.78	-	0.96	0.09	21.27	16.37	53.23	0.82	0.59	3.84	2187
2.	8-12	1.44	7.31	1.19	3.28	0.20	42.79	12.64	28.01	0.54	0.75	1.85	5886
3.	13-17	3.67	16.10	4.11	2.92	0.67	61.01	2.56	5.66	1.27	1.60	0.43	3870
4.	18-22	4.33	16.60	3.76	2.04	1.38	65.03	0.27	3.53	0.62	2.04	0.40	4497
5.	23-27	2.84	17.85	4.17	2.20	1.25	66.41	0.08	1.95	0.89	2.11	0.25	3597
6.	28-32	1.64	16.96	4.52	2.12	1.02	68.95	-	1.89	0.96	1.44	0.50	3543
7.	33-37	2.20	19.47	3.58	2.63	1.47	64.26	-	2.68	1.38	1.81	0.52	2316
8.	38-42	0.85	20.60	4.43	1.74	1.56	64.68	-	2.36	1.04	2.03	0.71	2121
9.	43-47	1.75	13.89	4.53	2.23	2.05	66.55	-	2.60	0.91	3.68	1.81	1656
10.	48-52	1.77	15.45	2.92	2.87	0.77	60.16	-	4.36	1.10	3.48	7.12	1812
11.	53-57	3.03	8.74	1.98	1.98	1.40	60.84	-	3.26	0.35	5.48	12.94	858
12.	58-62	2.44	5.04	0.87	1.18	1.10	48.94	-	5.75	0.24	5.83	28.61	1269
13.	63 & over	0.78	8.29	1.10	0.39	-	27.77	-	5.88	0.31	10.59	49.89	1275
14.	All ages	2.30	13.36	3.02	2.28	0.93	56.32	3.49	10.71	0.84	2.30	4.45	34887

Table 22.

Percentage Distribution of Age-Classified Male-Days of Non-Agricultural Families in Different Employment Categories (C-II).

		Category of employment											
	Age group (years)	Out of village	Self-employed on farm	Hired farm labour	Self-employed in non-farm occupation	Hired non-farm labour	House-hold work and do mestic duties	School	Not seeking work	Unem-ployed	Ill-health	Dis-abled	Total =100
1.	6-7	1.45	0.62	0.35	1.04	1.04	8.52	31.67	47.96	1.32	0.62	5.41	1443
2.	8-12	1.48	2.76	5.21	6.47	4.99	13.41	35.23	26.58	1.67	1.33	1.87	4065
3.	13-17	3.77	5.51	16.46	12.40	14.51	8.79	16.71	12.19	6.22	2.82	0.62	2412
4.	18-22	5.76	9.10	25.90	19.94	16.85	4.37	1.79	5.44	7.83	2.62	0.40	2517
5.	23-27	5.49	8.43	23.95	19.94	20.91	4.29	0.14	6.02	8.09	2.26	0.48	2076
6.	28-32	8.07	8.02	23.27	21.51	17.88	5.12	-	7.64	5.25	2.77	0.47	2343
7.	33-37	7.46	8.72	22.17	20.23	22.56	2.85	-	6.50	4.73	4.44	0.34	1755
8.	38-42	5.35	7.80	23.30	22.63	19.79	3.90	-	4.52	7.69	4.24	0.78	1794
9.	43-47	4.76	6.70	18.53	26.29	17.64	4.67	-	8.71	7.32	4.59	0.79	1134
10.	48-52	5.56	8.00	18.43	18.01	17.85	5.47	-	7.15	9.09	8.42	2.02	1188
11.	53-57	7.37	9.82	15.26	18.60	12.81	6.84	-	8.60	6.84	9.12	4.74	570
12.	58-62	5.96	9.35	12.33	20.60	9.08	10.57	-	8.94	7.32	7.59	8.26	738
13.	63 & over	5.60	5.33	5.60	13.25	9.56	5.74	-	9.02	6.01	10.93	28.96	732
14.	All ages	4.81	6.47	16.53	15.92	14.13	7.01	10.28	13.30	5.60	3.52	2.43	22767

Table 23.
Percentage Distribution of Age-Classified Female-Days of Non-Agricultural Families, in Different Employment Categories (C-II)

	Age group (years)	Category of employment											Total =100
		Out of village	Self-employed on farm	Hired farm labour	Self-employed in non-farm occupation	Hired non-farm labour	House-hold work and domestic duties	School	Not seeking work	Unemployed	Ill-health	Disabled	
1.	6-7	0.78	0.16	0.16	0.23	0.23	19.93	19.00	51.02	1.56	0.62	6.31	1284
2.	8-12	1.83	1.89	4.71	1.94	1.72	42.40	13.55	27.15	2.13	1.04	1.64	3654
3.	13-17	4.97	2.62	9.43	2.80	6.67	59.45	2.11	6.94	3.17	1.56	0.28	2175
4.	18-22	3.12	3.51	14.15	4.40	4.93	59.01	0.21	4.29	3.87	1.98	0.53	2820
5.	23-27	3.23	3.91	14.28	4.34	6.75	58.76	-	2.56	3.23	2.51	0.43	2073
6.	28-32	2.85	2.06	13.63	5.46	7.32	68.87	-	2.61	4.55	2.41	0.24	2526
7.	33-37	1.27	3.31	13.74	4.72	8.88	58.78	-	2.82	4.16	1.90	0.42	1419
8.	38-42	1.32	3.08	12.52	8.62	7.99	55.98	-	2.07	4.53	2.77	1.12	1590
9.	43-47	2.21	1.88	14.57	6.18	6.51	53.64	-	4.08	4.97	4.30	1.66	906
10.	48-52	2.33	2.83	12.97	6.40	5.82	50.78	-	4.57	3.16	4.49	6.65	1203
11.	53-57	2.13	2.89	7.71	6.74	5.97	45.47	-	3.85	1.35	5.97	17.92	519
12.	58-62	1.85	1.23	7.16	4.69	4.20	33.21	-	9.26	2.72	7.78	27.90	810
13.	63 & over	1.14	2.84	1.82	3.98	3.19	22.07	-	6.60	2.84	7.96	47.56	879
14.	All ages	2.45	2.55	10.13	4.26	5.26	50.26	3.62	10.78	3.32	2.64	4.73	21858

Table 24.
Proportion of Unemployed Labour Force to that Offering for Employment

	State	Adult males			Adult females			Non-adult males			Non-adult females		
		Hired farm & non-farm labour 1	Unem-ployed 2	Propor-tion of (2) to (1+2) %	Hired farm & non-farm labour 1	Unem-ployed 2	Propor-tion of (2) to (1+2) %	Hired farm & non-farm labour 1	Unem-ployed 2	Propor-tion of (2) to (1+2) %	Hired farm & non-farm labour 1	Unem-ployed 2	Propor-tion of (2) to (1+2) %
1.	Punjab, etc.	14.93	3.45	18.77	4.12	0.22	5.07	5.25	-	-	0.68	-	-
2.	Rajasthan, Ajmer	7.97	3.51	30.57	4.71	1.08	18.65	3.79	-	-	2.20	0.18	7.56
3.	Uttar Pradesh	13.92	2.36	14.50	3.54	0.98	21.68	4.76	1.18	19.87	0.65	0.19	22.62
4.	Bihar	23.93	3.58	13.01	8.18	0.92	10.11	6.00	0.55	8.40	5.17	0.64	11.02
5.	Orissa	23.26	3.93	14.45	4.42	1.51	25.46	6.45	-	-	3.52	1.13	24.30
6.	West Bengal	18.94	2.74	12.64	6.01	1.34	18.23	9.91	14.8	12.99	1.03	-	-
7.	Assam, etc.	30.58	0.74	2.36	21.91	0.29	1.31	10.80	0.18	1.64	7.61	-	-
8.	Madhya Bharat, etc.	27.87	3.26	17.77	8.44	1.27	13.08	7.53	0.17	2.21	1.85	0.36	16.29
9.	Madhya Pradesh	31.68	3.81	10.75	17.17	2.16	11.17	13.21	0.18	1.34	8.91	0.62	6.51
10.	Hyderabad	25.42	8.46	24.97	16.73	4.60	21.57	11.07	1.57	12.42	7.30	1.82	19.96
11.	N. Bombay, etc.	17.08	5.10	22.99	5.77	2.12	26.87	5.36	0.89	14.24	2.46	0.22	8.21
12.	Bombay Deccan	18.86	0.93	4.70	10.28	0.58	5.34	4.72	-	-	3.02	-	-
13.	Madras	24.55	7.66	23.78	15.41	5.01	24.53	9.17	1.57	14.62	8.04	0.60	6.94
14.	Mysore, etc.	21.63	6.61	23.41	12.72	2.37	15.71	2.76	0.24	8.00	4.41	-	-
15.	All-India	20.16	4.10	16.90	9.48	1.89	16.62	7.04	0.66	8.57	4.02	0.38	8.64

Table 25.
Proportion of Unemployed Labour Force to that Offering for Employment, in Different Age Groups (C-II)

	Age group	Adult males			Adult females			Non-adult males			Non-adult females		
		Hired farm & non-farm labour 1	Unem-ployed 2	Propor-tion of (2) to (1+2) %	Hired farm & non-farm labour 1	Unem-ployed 2	Propor-tion of (2) to (1+2) %	Hired farm & non-farm labour 1	Unem-ployed 2	Propor-tion of (2) to (1+2) %	Hired farm & non-farm labour 1	Unem-ployed 2	Propor-tion of (2) to (1+2) %
1.	6-7	0.13	0.75	85.23	0.09	0.82	90.11	1.39	1.32	48.71	0.39	1.56	80.00
2.	8-12	3.75	1.17	23.78	1.39	0.54	27.98	10.20	1.67	14.07	6.43	2.13	24.88
3.	13-17	10.80	1.34	11.04	4.78	1.27	21.00	30.97	6.22	16.72	16.10	3.17	16.45
4.	18-22	12.77	2.96	18.82	5.14	0.62	10.76	42.75	7.83	15.48	19.08	3.87	16.86
5.	23-27	13.82	3.04	18.03	5.42	0.89	14.10	44.86	8.09	15.28	21.03	3.23	13.31
6.	28-32	12.69	1.82	12.54	5.54	0.96	14.77	41.15	5.25	11.31	20.95	4.55	17.84
7.	33-37	12.89	2.01	13.49	5.05	1.38	21.46	44.73	4.73	9.56	22.62	4.16	15.53
8.	38-42	10.45	3.02	22.42	5.99	1.04	14.79	43.09	7.69	15.14	20.51	4.53	18.09
9.	43-47	9.86	1.71	14.78	6.58	0,91	12.15	36.17	7.32	16.83	21.08	4.97	19.08
10.	48-52	8.73	3.05	25.89	3.69	1.10	22.96	36.28	9.09	20.04	18.79	3.16	14.40
11.	53-57	7.04	2.31	24.71	3.38	0.35	9.38	28.07	6.84	19.59	13.68	1.35	8.98
12.	58-62	5.82	3.29	36.11	1.97	0.24	10.86	21.41	7.32	25.48	11.36	2.72	19.32
13.	63 & above	2.72	0.72	20.93	1.10	0.31	22.00	15.16	6.01	28.39	5.01	2.84	36.18
14.	All ages	9.08	2.02	18.20	3.95	0.84	17.54	30.66	5.60	15.44	15.39	3.32	17.74

Table 26.
Weekly Hired Labour Days as Reported by Employers to those Reported by Employees (C-II and C-III).

	State	Farm	males Non-farm	Total	Farm	Females Non-farm	Total	Farm	Children Non-farm	Total	Farm	All Non-farm	Total
1.	Punjab, etc.	73.24	33.28	48.20	199.31	-	116.70	-	-	-	93.66	25.62	54.35
2.	Rajasthan, Ajmer	493.12	21.09	183.25	619.32	30.72	319.26	12.72	43.03	30.51	446.07	27.37	194.18
3.	Uttar Pradesh	181.29	30.63	108.36	157.30	112.79	128.64	106.24	41.49	56.12	174.29	48.48	106.19
4.	Bihar	96.86	-	56.66	61.43	-	85.58	19.38	-	11.80	78.89	-	46.29
5.	Orissa	56.03	13.51	31.08	-	16.29	7.22	-	27.67	11.40	37.23	15.12	25.19
6.	West Bengal	95.00	64.58	85.37	19.03	45.13	29.79	23.88	18.59	22.19	70.74	53.30	64.88
7.	Assam, etc.	16.49	37.14	25.19	3.07	-	2.06	5.98	-	3.69	10.21	21.48	14.56
8.	Madhya Bharat, etc.	211.83	55.17	148.76	164.83	64.67	138.31	21.00	45.69	34.17	172.00	54.98	127.16
9.	Madhya Pradesh	102 62	35.53	76.16	221.86	34.15	153.55	14.04	13.65	13.90	125.28	31.92	89.86
10.	Hyderabad	142.65	55.52	97.30	199.01	23.16	153.68	73.52	15.16	53.52	154.04	43.58	109.O9
11.	N. Bombay, etc.	180.16	22.88	110.56	435.32	52.81	304.67	110.34	10.53	58.72	232.58	25.58	143.00
12.	Bombay Deccan	177.58	37.59	130.43	190.83	1.86	169.44	25.28	72.88	36.81	165.35	36.52	131.90
13.	Madras	139.82	16.54	93.53	321.60	34.55	265.75	36.19	45.24	38.74	192.05	24.38	141.37
14.	Mysore, etc.	298.64	43.32	167.03	316.18	58.62	219.82	43.83	17.37	36.74	278.16	46.25	173.91
15.	All-India	135.06	28.91	88.36	208.38	36.47	152.39	30.96	23.88	28.11	142.83	29.85	97.16

Table 27.
Wages (in rupees) per Labour day, for Males, Females and Children (C-III)

		Males				Females				Children			
	State	Farm	Non-farm	Dome-stic	Total	Farm	Non-farm	Dome-stic	Total	Farm	Non-farm	Dome-stic	Total
1.	Punjab, etc.	1.43	1.30	1.81	1.47	0.97	-	-	0.97	-	-	-	-
2.	Rajasthan, Ajmer	1.03	0.68	0.32	1.00	0.57	0.43	0.24	0.56	0.51	0.21	-	0.26
3.	Uttar Pradesh	0.96	0.99	0.71	0.96	0.81	0.50	0.39	0.57	0.58	0.37	0.50	0.51
4.	Bihar	1.34	-	- 1	.34	0.88	-	-	0.88	0.96	-	-	0.96
5.	Orissa	0.83	0.59	0.56	0.76	-	0.75	0.24	0.29	-	0.76	-	0.76
6.	West Bengal	1.39	1.50	1.37	1.40	0.59	1.92	1.08	1.08	0.60	0.75	0.75	0.64
7.	Assam, etc.	1.78	1.73	1.97	1.84	1.00	-	-	1.00	0.28	-	-	0.28
8.	Madhya Bharat,	0.71	0.91	1.13	0.75	0.92	0.82	0.97	0.92	0.31	0.61	-	0.52
9.	etc.	0.51	0.36	0.29	0.48	0.37	0.25	0.18	0.36	0.31	0.40	-	0.34
10.	Madhya Pradesh	0.84	1.42	0.54	0.92	0.61	0.64	0.07	0.60	0.52	0.77	0.73	0.54
11.	Hyderabad	1.03	0.84	0.97	1.02	0.88	0.89	0.27	0.84	0.83	0.50	0.59	0.81
12.	N. Bombay, etc.	1.04	1.48	0.89	1.12	0.50	-	0.38	0.50	0.47	0.60	0.67	0.53
13.	Bombay Deccan	1.02	1.03	0.87	1.02	0.55	-	0.47	0.55	0.41	0.66	0.25	0.43
14.	Madras	0.68	1.20	0.80	0.73	0.62	0.90	0.63	0.63	0.98	0.56	0.24	0.90
	Mysore, etc.												
15.	All-India	0.95	1.04	1.06	0.97	0.60	0.63	0.45	0.59	0.57	0.52	0.42	0.54

5. REAL ESTATE IN LAND AND BUILDINGS, REAL ESTATE IMPROVEMENTS AND RESIDENTIAL HOUSING

5.1 In Table 28, we give details of real estate in land and buildings, of real estate improvements during the year and of residential housing.

5.2 In the first column of the table we show, for different states, the land-holding families as proportions of all families. Considering all states, it will be seen that about 60 percent of the rural families are land holders. This proportion does not vary greatly in different states except that it is rather low in Punjab and Assam. In the latter state, it is obviously on account of the large plantation estates. In Punjab, the low proportion of land holders is probably on account of the post-partition conditions prevailing in that state. The proportion of land holders is very high in the Bombay Deccan which is the premier Rayatwari tract. It is also considerably high in Orissa. In the second column are shown the average land holdings per land holder. The average land holding in the country is of 11 acres. There are, however, considerable variations between different states. Uttar Pradesh, Bihar, Orissa, West Bengal and Assam form in this respect a homogeneous block with land holding ranging from 6 to 7 acres. In the south, Madras, Mysore and Travancore have slightly bigger land holdings of 7 to 10 acres. In the north, in Punjab, Rajasthan, Madhya Bharat and Vindhya Pradesh the average holdings vary between 12 and 18 acres. In Madhya Pradesh, Hyderabad, Saurashtra and Bombay, they range from 12 to 16 acres.

5.3 In the third column of the table are shown the proportions of families having real estate in buildings. The proportion in the country is 89 percent. It is very high in Bihar, Orissa, West Bengal and also in the Bombay Deccan. It is very low in Saurashtra and North Bombay and also in Mysore and Travancore-Cochin. The average building area per holder is nearly 500 sq. ft. in the country and varies between 400 to 600 sq. ft. in different states. In West Bengal it is only 260 sq. ft. and in Bihar it is 349 sq. ft. Figures for Assam are extreme in this respect and it is doubtful whether in their extremity they are entirely reliable.

5.4 In column 5 are given expenditure on land improvements per family and in the next column the same is shown on a per acre basis. In the country as a whole, the expenditure on land improvement averages at Rs. 17.4 per rural family and Rs. 2.6 per acre of land. It will be seen that the level of expenditure is very high in the southern states and very low in the northern states except to some extent in Rajasthan. In the next column are shown the families incurring such expenditure as percentages of the land holding families. In the country as a whole about 22 percent of the land holders have reported expenditure on land improvements.

5.5 In columns 8 and 9 are given details of expenditure on new building construction. In column 8 is given the average of such expenditure per family in 4 different states and in the next column the families incurring such expenditure are shown as proportions of all families. It will be seen that considering all states together, 8 per cent of all families have reported to have incurred such expenditure while the average expenditure per family is Rs. 18.34. There is considerable variation in both these respects in different states.

5.6 In column 10 is shown the average per family expenditure on real estate improvements including land improvement, new construction and any other. The total expenditure comes to Rs. 40 per family in the whole country. It is very high in Mysore and Travancore-Cochin where it exceeds Rs. 70. It is also considerable in Hyderabad, Saurashtra, Bombay and Madras in the south and in Rajasthan, Madhya Bharat and Vindhya Pradesh in the north. It is very low in the entire block comprising of Uttar Pradesh, Bihar, Orissa, West Bengal and Assam.

5.7 In the last two columns of the table are shown details of residential housing. In column 11 is given the average number of rooms per family while in the next column is shown the average living area per family. It will be seen that the all-India figures are 2.17 rooms and 363 sq. ft. of area per family. In both these respects the Bombay Deccan stands very high. In living area, West Bengal appears to be very low.

5.8 Data on purchase and sale of real estate were noted in C-VII and VIII and are presented in Chapter 10.

5.9 In Tables 29 and 30 we present data on land holdings and land improvements on an all-India basis, but separately for the agricultural and the non-agricultural families. Thus in Table 29, we give the distribution of the agricultural families by their owned holdings. 696 out of the 5103 agricultural families had no land holdings. If we regard the agricultural families as mostly cultivating families, this means that nearly 14 per cent of the cultivating families have no owned land. The number of agricultural families owning various acreages of land are shown in the second column of the table. In the third column is shown the total land owned by families in each class. In the next two columns, namely, the fourth and the fifth, the number of families and their land holdings are shown in the form of cumulated frequencies. This presentation clearly demonstrates the inequalities in land holding. Thus from the fourth column it will be seen that 33.7 percent, that is one-third, of the agricultural families owned less than 3 acres each and from the fifth column it will appear, that these one-third families owned only 2.76 percent of the total land holdings. Or again, nearly 50 percent of the families had holdings under 5 acres and their total holdings amounted to only 82 percent of all holdings. Or at the bottom end of the table, it will be seen that nearly 90 percent of the families had holdings of less than 25 acres accounting for 48.6 percent of the total land holdings; which in other words means that less than 10 percent families had holding of more than 25 acres but that between them they held more than one-half of the total land holdings.

5.10 A similar statement for the non-agricultural families appears in Table 30. As will appear from the fourth column of the table more than 60 percent of these families owned no land. At the other end of the table, it will be seen that only about half a percent of the families had holdings of 60 acres and above and that they accounted for nearly one-third of the land holding of the non-agricultural families.

5.11 In the last columns of the two tables, the, expenditure during the year on land improvement undertaken by families in each class is shown on a per acre basis. Considering all agricultural families and all non-agricultural families, the expenditure on land improvements on a per acre basis, is nearly the same in the two cases; Rs. 2.84 per acre for agricultural and Rs. 2.36 per acre for non-agricultural families. Comparing the agricultural families with different sizes of land holdings, the variation in the level of per acre expenditure is not very regular. Nevertheless, there is an indication that the level of land improvement expenditure is somewhat lower on land holdings of, say, more than 20 acres.

5.12 In Tables 31 and 32, we present more details regarding residential housing. This is done only on an all-India basis but details are shown separately for the agricultural and the non-agricultural families. In these tables the residential houses have been classified, in the first place, according as they were owned or rented. Thus it appears from the bottom lines of these tables that among the agricultural families, 366 families, that is nearly 7 percent, lived in rented or, more accurately, in unowned houses. In terms of area, about 4 percent of the residential area of the agricultural families was tenant occupied. Among the non-agricultural families, on the other hand, nearly 25 percent of the families lived in rented houses and they occupied only about 15 percent of the area occupied by all non-agricultural families.

5.13 In Table 31, the houses have been classified firstly according to whether they were one, two or more storied and secondly according to the number of rooms in them. The number of families living in each category of houses, the number of rooms in them and the total area under their roof, are all shown as percentages of their respective totals shown in the bottom line of the table. It will be seen that considering all agricultural families staying in owned and unowned houses both, nearly 90 percent of their residential area comprised one storied structures and nearly 25 percent of the area comprised one room structures. Nearly 40 percent of the agricultural families and 55 percent of the non-agricultural families lived in one room tenements of average area of less than 250 sq. ft.

5.14 Some broad details regarding the plinth, walls and roof of each residential house were obtained in B-V. On the basis of this information, we propose to distinguish the following 15 structural types:-

Type 1. No or very low mud plinth; walls of mud, bamboo, reed; roof of straw, thatches, bamboo, reed and mud.

Type 2. Same as Type 1 but with roof of tin-sheet, asbestos or tiles.

Type 3. Same as Type 1 but with raised plinth of mud.

Type 4. Same as Type 3 but with roof of tin-sheet, asbestos or tiles.

Type 5. Raised plinth of mud; walls of timber, wood or tin-sheet; roof of straw, bamboo, etc., or of tin-sheet or tiles.

Type 6. Raised plinth of timber, wood, bamboo, reed; walls of mud, bamboo, reed or of timber wood; roof of straw, thatches, etc., or of tin-sheet.

Type 7. Raised plinth of mud; walls of mud, bamboo, reed; roof of brick, cement, etc.

Type 8. No or low mud plinth; walls of brick and stone; roof of straw, thatches, etc.

Type 9. Same as above but with raised plinth of mud.

Type 10. Walls of brick and stone; roof of tin-sheet, asbestos, tiles.

Type 11. Raised plinth of brick and stone; walls of mud, bamboo or of timber, wood, tin-sheet; roof of straw, thatches, etc., or of tin-sheet, asbestos, tiles.

Type 12. Raised plinth of mud; walls of brick and stone; roof of brick or tile.

Type 13. Plinth and walls of brick and stone, roof of straw, thatches, etc.

Type 14. Same as above, but roof of tin-sheet, asbestos, tin-sheet or tiles.

Type 15. Same as above but with roof of brick, cement, etc.

5.15 In Table 32, we have classified the residential houses according to these structural types. The number of families living in each type of houses, number of rooms in them and the total area under their roof are all given, as in earlier table, in the form of percentages to their respective totals given in the bottom line. It will be noted that the most common type of residential houses is the 2nd type. Nearly 40 per cent of all families lived in this type of houses. The next common type is the 1st type. More than 20 percent of the families lived in this type of houses. Nearly 75 to 80 percent of the families lived in houses belonging to the first four types which have the common characteristic of their walls being of mud, bamboo and reed.

5.16 No data on value of houses was obtained during the NSS. Nevertheless, from certain surveys of rural housing done by ourselves, where detailed quantity evaluation was attempted, it appears that even the lowest type of rural housing costs about Re. 1 per sq. ft. of area while the best type does not usually cost more than Rs. 4 or Rs. 5. It might therefore be worthwhile attempting a rough evaluation of the residential houses on this basis. We propose; as a rough basis, that the Type 1 houses in our classification might be evaluated at the lowest rate of Re. 1 per sq. ft For each subsequent type we might add Rs. 4 per sq. ft. so that the Type 2 houses will be valued at Rs. 1-4 per sq. ft.; the Type 3 houses at Rs. 1-8, etc. The last type, namely Type 15 houses will then be valued at Rs. 4-8 per sq. ft. If this is done, the value of the residential houses of the agricultural families comes to Rs. 875 per family; the same for the non-agricultural families comes to Rs. 587. When the two averages are appropriately weighted, the value of rural houses comes to about Rs. 778 per family.

5.17 The above includes, it should be noted, only the residential houses. If some allowance is made for the non-residential buildings, the value of real estate in buildings in rural area might be taken at about Rs. 1000 per family. On the other hand, as we have earlier seen the value of new annual construction is about Rs. 18 per family. New construction thus forms less than 2 percent of the existing assests in buildings.

Table 28.

Real Estate in Land and Buildings, Real Estate Improvement and Residential Housing, (B-III, IV, V)

	State	Proportion of land owners to total families (%)	Average size of land holding per land holder (acres)	Proportion of building owners to total families (%)	Average area under roof per owner (sq.ft.)	Value of land improvement per family (Rs.)	Value of land improvement per acre (Rs.)	% of land holders reporting improvement	Value of new construction per family (Rs.)	% of family reporting construction	Real estate improvement per family (Rs.)	No. of rooms per family	Area under roof per family (sq.ft.)
		1	2	3	4	5	6	7	8	9	10	11	12
1.	Punjab, etc.	51.56	12.16	90.95	577	7.06	1.13	19.78	29.08	8.72	42.49	2.10	445
2.	Rajasthan, Ajmer	65.82	18.48	91.07	408	14.45	1.19	24.35	28.40	12.05	49.75	2.21	289
3.	Uttar Pradesh	63.86	6.17	92.30	521	8.23	2.09	13.39	14.13	8.91	28.60	2.45	388
4.	Bihar	64.47	6.78	98.32	349	6.46	1.48	14.72	10.05	6.02	18.37	2.65	305
5.	Orissa	75.67	6.05	97.69	427	4.41	0.96	16.42	19.36	13.47	24.34	2.60	298
6.	West Bengal	57.34	6.22	98.80	260	7.58	2.13	18.62	12.30	6.46	20.73	2.02	219
7.	Assam, etc.	51.70	6.63	85.80	367	4.44	1.30	18.13	10.96	14.56	16.22	2.58	316
8.	Madhya Bharat, etc.	70.04	17.88	94.95	435	7.88	0.59	13.25	21.45	10.57	52.89	2.12	292
9.	Madhya Pradesh	58.44	12.53	90.44	547	24.07	3.29	39.84	10.38	7.94	37.11	2.00	397
10.	Hyderabad	54.08	15.14	92.12	414	26.39	3.22	28.27	15.87	6.05	48.13	1.75	309
11.	N. Bombay, etc.	59.47	16.86	83.23	539	26.53	2.65	29.28	24.68	6.35	55.23	1.70	372
12.	Bombay Deccan	79.63	16.41	96.96	433	30.36	2.32	20.41	21.88	7.26	53.19	3.37	594
13.	Madras	59.33	7.07	89.58	502	32.23	7.68	26.48	18.63	4.67	55.58	1.61	389
14.	Mysore, etc.	59.19	9.97	85.88	601	38.73	6.56	26.70	29.91	7.09	71.75	2.37	460
15.	All-India	60.77	11.03	89.00	481	17.40	2.60	22.30	18.34	8.00	40.82	2.17	363

Table 29.
Distribution of Land Holdings and Related Land Improvement Expenditure, in Agricultural Families (B-III)

Land owned (acres)	No. of families	Total owned land (acres)	Cumulative proportion of families	Cumulative proportion of holding	Land improvement per acre (Rs.)
(1)	(2)	(3)	(4)	(5)	(6)
0	696	-	14.20	-	-
Below 1	81	40	15.85	0.08	3.60
1-	383	383	23.66	0.83	4.84
2	492	984	33.70	2.76	6.05
3	458	1374	43.04	5.45	4.05
4	350	1400	50.18	8.20	3.24
5	283	1415	55.96	10.97	2.39
6	262	1572	61.30	14.06	3.42
7	184	1288	65.06	16.58	3.60
8	199	1592	69.11	19.71	3.17
9	118	1062	71.52	21.79	6.79
10	164	1640	74.87	25.01	3.50
11	71	781	76.32	26.54	3.41
12	119	1428	78.74	29.84	2.42
13	71	923	80.19	31.15	3.82
14	59	826	81.40	32.77	2.20
15	79	1185	83.01	35.09	7.08
16	73	1168	84.50	87.38	2.18
17	34	578	85.19	38.52	2.79
18	52	936	86.25	40.85	5.29
19-	24	456	86.74	41.25	0.26
20-24	173	3756	90.27	48.61	2.37
25-29	119	3161	92.70	54.81	1.99
30-34	83	2592	94.39	59.90	1.53
35-39	47	1702	95.35	63.23	2.07
40-49	74	3193	96.86	69.50	2.91
50-59	47	2445	97.82	74.29	1.63
60 & above	107	13109	100.00	100.00	2.31
Not stated	201	-	-	-	-
Total	5103	50989	-	-	2.84

Table 30.
Distribution of Land Holdings and Related Land Improvement Expenditure, in Non-Agricultural Families (B-III)

Land owned (acres)	No. of families	Total owned land (acres)	Cumulative proportion of families	Cumulative proportion of holding	Land improvement per acre (Rs.)
(1)	(2)	(3)	(4)	(5)	(6)
0	2121	-	60.14	-	-
Below 1	210	105	66.09	1.34	0.43
1-	410	410	77.72	6.59	2.38
2	250	600	84.80	12.99	4.80
3	147	441	88.97	18.63	3.15
4	89	356	91.50	23.18	5.96
5	47	235	92.83	26.19	9.67
6	38	228	93.91	29.11	1.39
7	21	147	94.50	30.99	5.51
8	36	288	95.52	34.67	6.82
9	14	126	95.92	36.28	0.48
10	17	170	96.40	38.46	0.24
11	10	110	96.68	39.87	0.14
12	8	96	96.91	41.10	0.66
13	6	78	97.08	42.09	1.92
14	6	84	97.25	43.17	1.38
15	12	180	97.59	45.47	-
16	5	80	97.73	46.49	-
17	2	34	97.79	46.93	-
18	5	90	97.93	48.08	0.33
19-	2	38	97.99	48.57	-
20-24	18	376	98.50	53.38	1.46
25-29	14	369	98.90	58.10	3.25
30-34	4	122	99.01	59.66	1.64
35-39	4	147	99.12	61.54	0.34
40-49	6	258	99.29	64.84	0.39
50-59	4	200	99.41	67.40	1.25
60 & above	21	2548	100.00	100.00	1.30
Not stated	571	-	-	-	-
Total	4098	7816	-	-	2.36

Table 31.
Owned and Rented Houses: Storeys, Rooms and Area Under Roof (sq. ft.) (B-V).

		Agricultural families						Non-Agricultural families					
		Owned houses			Rented houses			Owned houses			Rented houses		
Storey	No. of rooms	No. of families	Total no. of rooms	Area under roof (sq.ft.)	No. of families	Total no. of rooms	Area under roof (sq.ft.)	No. of families	Total no. of rooms	Area under roof (sq.ft.)	No. of families	Total no. of rooms	Area under roof (sq.ft.)
1	1	36.71	15.70	22.19	57.92	35.69	41.52	52.19	28.57	34.77	60.40	37.39	44.28
	2	28.28	24.19	24.28	28.42	35.01	34.86	28.38	31.08	30.29	23.46	29.04	25.72
	3	14.07	18.05	15.90	6.83	12.63	10.33	9.28	15.24	12.61	8.70	16.16	14.84
	4	6.93	11.85	9.82	2.46	6.06	7.06	3.27	7.17	5.21	1.89	4.68	3.11
	5	3.32	7.09	5.68	1.64	5.05	2.03	1.55	4.23	3.39	0.63	1.95	2.47
	6	1.35	3.47	2.46	-	-	-	0.45	1.49	1.21	0.63	2.34	2.09
	7	0.89	2.66	2.07	0.27	1.18	1.67	0.27	1.05	0.65	-	-	-
	8	0.46	1.59	1.73	-	-	-	0.09	0.40	0.23	-	-	-
	9&more	0.99	3.82	4.04	-	-	-	0.24	1.19	0.75	0.25	1.41	1.15
1	Total	93.00	88.42	88.17	97.54	95.62	97.47	95.72	90.42	89.11	95.96	92.97	93.66
2	2	2.22	1.90	1.93	1.09	1.35	0.65	1.24	1.36	1.77	2.65	3.28	3.27
	3	1.62	2.09	1.73	0.55	1.01	0.57	0.85	1.39	1.15	0.38	0.70	0.66
	4	1.12	1.92	1.94	0.82	2.02	1.31	0.82	1.80	1.35	0.38	0.94	1.17
	5	0.72	1.53	1.65	-	-	-	0.24	0.66	0.66	0.38	1.17	0.71
	6	0.36	0.92	0.57	-	-	-	0.52	1.69	2.82	0.25	0.94	0.53
	7	0.23	0.70	0.57	-	-	-	0.09	0.35	0.27	-	-	-
	8	0.12	0.43	0.27	-	-	-	0.09	0.40	0.38	-	-	-
	9&more	0.42	1.63	2.50	-	-	-	0.36	1.80	2.25	-	-	-
2	Total	6.81	11.12	11.16	2.46	4.38	2.53	4.21	9.45	10.65	4.04	7.03	6.34
3	& More -	0.19	0.46	0.67	-	-	-	0.07	0.13	0.24	-	-	-
Total= 100		**4735**	**11069**	**219893 1**	**366**	**594**	**95860**	**3298**	**6024**	**105563 0**	**793**	**1281**	**182695**

Table 32.
Distribution of all Families, by the Types of their Owned and Rented Homes (B-V).

	Agricultural families						Non-Agricultural families					
	Owned houses			Rented houses			Owned houses			Rented houses		
Storey	No. of families	Total no. of rooms	Area under roof (sq.ft.)	No. of families	Total no. of rooms	Area under roof (sq.ft.)	No. of families	Total no. of rooms	Area under roof (sq.ft.)	No. of families	Total no. of rooms	Area under roof (sq.ft.)
1.	16.58	14.55	18.40	79.51	80.98	80.20	25.56	22.58	18.14	28.63	27.95	27.19
2.	40.84	89.54	36.06				38.57	37.32	34.75	35.31	33.02	31.33
3.	4.82	4.03	8.75	12.84	12.12	13.08	7.61	7.06	7.47	7.94	6.95	8.95
4.	12.76	13.67	15.99				8.40	9.61	10.85	5.93	5.54	6.64
5.	0.93	1.43	1.25				0.94	1.26	1.45			
6.	0.67	0.63	1.26	4.10	3.87	3.17	0.33	0.45	0.55	0.13	0.23	0.25
7.	1.52	1.82	1.03	1.91	1.68	2.28	1.85	1.97	2.12	2.02	2.19	1.87
8.	2.02	1.40	1.53				2.27	1.96	1.50	0.63	0.70	0.89
9.	2.17	2.20	1.85	1.09	1.01	1.04	1.76	2.39	1.96	2.77	3.67	4.56
10.	3.02	2.75	3.78				2.61	2.80	3.78	4.92	5.70	4.63
11.	3.55	3.87	4.50	0.55	0.34	0.23	2.12	2.01	1.96	1.51	2.65	1.42
12.	1.84	2.02	1.95				0.85	1.04	1.38	1.13	0.93	0.77
13.	3.59	3.55	4.18				2.49	2.67	3.83	2.27	2.19	2.36
14.	3.74	5.24	6.16				2.91	4.37	5.59	5.17	6.09	6.99
15.	2.45	3.30	3.31				1.73	2.51	4.67	1.64	2.19	2.15
Total=100	**4785**	**11069**	**2198931**	**366**	**594**	**95860**	**3298**	**6024**	**1055630**	**793**	**1281**	**182695**

6. LIVESTOCK

6.1 In Table 33 we give details regarding number of different kinds of livestock in different states. All figures are given as per 1000 families. It will be observed that the number of bulls and bullocks in Madhya Bharat is very large so much so that the figure might be considered suspect were it not well supported by the number of cows and calves. Next in importance are Rajasthan, Saurashtra, Kutch and Bombay where there are nearly 1.5 buttocks per family. Orissa also has a rather large number of bullocks. In most other states there is on an average one bullock per family.

6.2 There is great variation in the ratio of cows to bullocks in different states. The number of cows in relation to the number of bullocks is actually larger in Rajasthan. In Orissa and Hyderabad cows and bullocks are equal in number. Everywhere else the number of cows is smaller than the number of bullocks. It is particularly, small is Uttar Pradesh and Bihar and also in Saurashtra, Bombay and Mysore-Travancore. The ratio of cows to bullocks might be taken as an indicator of whether cow is or is not regarded as a milch animal. Partly it might also indicate how far a region is capable of maintaining its livestock population. Another indicator for the latter purpose will be the ratio of calves to cows or to bullocks and cows together. Considering the ratio of calves to cows, it is seen that it is nearly 1 in Punjab and West Bengal. It is also very high in Madhya Bharat, Madhya Pradesh, Saurashtra, Bombay and Mysore-Travancore. The all-India ratio of calves to cows is nearly 75 per cent. For all practical purposes, calves might be regarded as young stock under three years.

6.3 He-buffaloes are indeed few and form only 10 per cent of the number of bullocks. The number of she-buffaloes is relatively large and everywhere, except - in West Bengal, Assam and Madhya Pradesh, larger than the number of he-buffaloes. The number of she-buffaloes is very large in the three north-western states of Punjab, Rajasthan and Madhya Bharat which is also known to be the main exporting area of these animals to the south. In the south, in Saurashtra and Bombay, their number is considerable where it is the principal milch animal. Rather large numbers of buffalo calves in relation to the number of she-buffaloes are reported in West Bengal and Assam. The ratio is also high in Rajasthan and Hyderabad. All-India ratio of buffalo calves to she-buffaloes is nearly 70 per cent.

6.4 In comparison to all other states, the number of sheep and goat is very large in Rajasthan. In Madhya Bharat there are a large number of goats but not so many sheep. The number of these animals is also considerable in the south. In Saurashtra and North Bombay; the number of goats is large while in the Bombay Deccan, Madras and Mysore-Travancore, the number of sheep is large.

6.5 The number of poultry and other birds is surprisingly small in the north and north-west India. Their number is considerable, about one bird per family in Bihar, Orissa and West Bengal. In Assam their number is too large and it is not certain whether it is trustworthy. In the south the numbers are moderate except in the Bombay Deccan where again there is a bird per family.

6.6 Among the owned livestock only some of the animals are purchased; others are home-bred or otherwise acquired. The proportion that the purchased animals bear to the total owned animals might be taken to indicate the extent to which livestock business is commercialised. In Table 34 we show these proportions for different kinds of animals in different states. Considering the all-India figures, it will be seen that 60 per cent of the bullocks, 20 per cent of the cows, 70 per cent of he-buffaloes and 40 per cent of the she-buffaloes are purchased. Only 14 per cent of the poultry birds are purchased. The last column giving the proportion of purchased, animals to the value of all animals indicates in this respect the overall position when all animals are considered together. It will be observed that these proportions vary a good deal in different states. For instance, they are above all-India proportions in Punjab, Uttar Pradesh, Assam, Hyderabad and Madras. On the other hand, they are very low in Madhya Bharat and Rajasthan. It is difficult to discuss, with tile existing material, the implications of these variations. It will nevertheless be readily appreciated that they are vital to a study of the livestock economy of the country.

6.7 In Table 35 are given the valuations of the livestock. The figures are again per 1000 families. In arriving at the total valuation, the purchased animals were valued at purchase price while the home-bred or otherwise acquired animals were valued at the average purchase price of the purchased animals of the respective categories in each state. It will be seen that the all-India value of all livestock comes to about Rs. 407 per family. It is highest in Rajasthan and Madhya Bharat where the value of livestock is nearly Rs. 800 per family. In Punjab, it is nearly Rs. 600 and so it is in Saurashtra and North Bombay. In the Bombay Deccan, it is nearly Rs. 500 per family. In all other states, the value of livestock per family is less than Rs. 400. It is very low in Orissa, West Bengal, Madhya Pradesh and Madras.

6.8 The method of valuation adopted in Table 35 is defective on account of two considerations. In the first place the purchased animals were valued at purchase prices. This would not be quite correct as the current prices of the animals would be different from their purchase prices for two reasons. Firstly, the purchase prices are prices at the time the animals were purchased and these might no longer be the current prices. Secondly, the animals on account of the change in their ages since they were purchased might have either appreciated or depreciated in their value. The evaluation of animals, not actually purchased, at the average purchase prices of the purchased animals might again cause some error on two accounts. Firstly, the prices being used are not current prices but average prices over a number of past years. Secondly, the age composition of the animals purchased and not purchased might be very different. We could avoid some of these difficulties by using the current price data. We have some data on current prices available from C-VI where information on sale and purchase of all kind of livestock during one month was asked for. We shall present these data in subsequent tables. We did not, however, find, it fit to use these data to evaluate the existing livestock as, for each state, the data are inadequate in number. On the other hand by using all-India average prices, though we could have used the current prices, we would have neglected the regional differences in the livestock prices.

6.9 We shall nevertheless present relevant data, though on all-India basis, to indicate differences in prices of animals of different ages, differences in livestock prices that might have taken place over last few years and the differences in, the age-composition of the purchased and the not-purchased animals. We shall give these data only for Bullocks, Cows, He- and She-buffaloes and their calves.

6.10 In Table 36, we give the average purchase prices of different animals at different ages. It will be seen that for bullocks and cows, the price maximum reaches at age 5. For he-and she-buffaloes the maximum is reached at ages 6 or 7.

6.11 In Table 37, we give the average purchase prices for different animals purchased in the past classified by the year of their purchase. It will be seen that over the period of ten years from 1941-42 to 1950-51, the prices of all kinds of livestock have practically doubled.

6.12. In Table 38, we give the age distribution of the purchased and the home-bred or otherwise acquired animals. It will be seen that among the purchased animals, there is a preponderance of older animals.

6.13 Details of current purchases and of sales of livestock were obtained in C-VI. In Tables 39 and 40 we give the particulars for different states. The figures are on an annual basis per 1000 families. In Table 39 are given the annual purchases. It will be observed that considering the all-India average, the annual purchases of livestock amount to Rs. 120 per family. This might be compared with the total value of the existing livestock. As appears from Table 35 the value of owned livestock amounts to Rs. 413 per family. The annual purchases thus amount to about 30 per cent of the total stock. Such proportions of annual purchases to total stock vary a great deal in different states. For instance, they are very high in Hyderabad, Punjab and West Bengal. They are also rather high in Madras: and Mysore-Travancore. On the other hand practically no purchases were reported in Orissa. Compared to the total stock, the purchases are also very, low in Rajasthan, Saurashtra and Bombay. Our data on current purchases are affected by seasonal bias which detracts much from the value of the present comparison. Nevertheless they are given here to illustrate a form of analysis which should be relevant to a study of the livestock economy of the country.

6.14 In Table 40 are given the annual sales of livestock. The all-India average is seen to be Rs. 45 per family. This is only one-third of the value of annual purchases. The gap between the reported purchases and sales is of varying magnitudes in different states but, except in the Bombay Deccan where the purchases and sales are nearly equal, the gap is everywhere positive and is very large in some states. The reasons for these large differences between the reported purchases and sales are many and complex. Partly they might be due to reporting biases, namely, the possibility of the sales being underreported. Partly, they might be due to a considerable proportion of the sellers of livestock to the rural population lying outside the NSS sample; this might happen not so much because such dealers or traders in livestock are urban residents, but because in many cases they are either nomadic tribals or such as wander from place to place for business purposes. The NSS sample, as it was based on only the resident families in selected villages, would naturally exclude such persons. Part of the difference between the reported purchases and sales of livestock might also be due to the difference between the sale and purchase prices on account of the commission of the middlemen. The large variations which different states show are worthwhile studying from the point of view of these possibilities. It is obviously impossible here to go into these details on the basis of the type of summary data that the NSS furnishes. Nevertheless, we have mentioned these points to illustrate the complexity of the problems involved.

6.15 In Table 41 we give the average purchase and sale prices of different kinds of animals in different states. The averages are based on insufficient number of observations and are not very regular. Nevertheless, it will be observed that in most cases the purchase prices are considerably above the sale prices.

6.16 Our data afford an important classification of the current purchases and sales of animals, namely according to whether a trader was or was not involved. Thus the purchases might be classified according to whether they were from a producer or a trader. Similarly, the sales might be classified according to whether they were to a ‘user’ or a trader. This is done in Table 42. The data are given both on the basis of the number of reported purchases or sales and their value. Thus, considering the whole country, only 35 per cent of the reported purchases were from a trader but their value amounted to 47 per cent of the total purchase price. On the other hand, while 30 percent of the reported sales were to traders, their value amounted to only 23 percent of the total sale price.

6.17 These proportions differ considerably in different states. In Madhya Bharat, more than 80 percent of the purchases and sales are through a trader. In Madhya Pradesh and Hyderabad, on the other hand, while a large proportion of the purchases are from a trader, only a small proportion of the sales are to a trader. The same is true of Mysore and Travancore. In the Bombay Deccan the position is reversed. Practically no purchases are from a trader while about one-fourth of the sales are to a trader. It is not possible here to go more fully into the causes underlying these radical variations. It is obvious, however, that they need a careful examination.

6.18 In Table 43 we give, on an all-India basis, further details of purchases and tales of animals. As in the previous table, the purchases have been classified according to whether they were from a producer or a trader. Under each class, the number of animals of each type purchased and their total purchase price are shown. The average purchase price of each type of animal has been worked out. Similarly, a distinction has been made according as the sale was to a "user" or to a trader. It will be seen that in purchases from a trader the prices are generally higher than in those from a producer. On the other hand, the sale prices to a trader are lower than those to a non-trader. These data might be found useful as indicating the margins available to the traders in livestock.

6.19 Information on births, deaths and slaughter of livestock was also obtained in C-VI. In the following tables, we shall present the information and try to derive rough mortality and fertility rates for the cattle population. Table 44 gives distributions by age of different animals enumerated in B-VI and of the deaths and slaughter in four weeks recorded in C-VI. When the latter are related to the former, we get four-weekly death rates in different age-groups. These rates for the bullock calves, for instance, are 35.7, 8.6 and 4.3 per 1000 for the three age-groups, below 1, between 1 and 2 and between 2 and 3 years, respectively. The annual death rates derived, from these are given in Table 45. In order to derive the annual death rates the following procedure was adopted for the first two age-groups. In order to derive the annual death rate in the age-group below 1 year, the four weekly death rates for successive 13 periods were obtained from the first two death rates namely 35.7 and 8.6 by taking weighted averages, the weights being 13,0; 1,12; 2,11; etc;, 12,1. These death rates were then successively applied to the survivals at the end of each period. This gives the annual death rate of 263.2 per 1000. The interpretation of this death rate is somewhat different from that of the usual death rates as presented in a life table. The annual death rate at age 0 as shown in the life table gives the proportion who die in the first year of their life; that is to say out of an initial 1000 at birth, it gives the proportion who do not reach the age 1. The death rate for the age-group below 1 year, as we derived it, on the other hand indicates the proportion, out of a total of 1000 of age below 1 year, who will die within the course of one year. The death rate for the age-group between 1 and 2 years, has been similarly derived on the basis of the four weekly death rates for the two age-groups, namely, the age-groups 1-2 and 2-3 years. The death rate for the age-group between 2 and 3 years is derived by applying the four weekly death rate for this age-group successively thirteen times to the survivals at the end of each four weekly period. Death rates for further age-groups have been derived in the same way. Death rates for he-and she-buffaloes have been derived in a similar manner. For obtaining better graduated death rates certain of the advanced ages were combined. For instance for bullocks the ages 3-5 and 7-8 were combined. Besides this grouping of certain ages, no graduation proper has been done.

6.20 Because the sex was not noted for calves under three years, death rates for calves are joint for male and female. For later years, the sexes have been of course differentiated. It will be noticed that the death rates at all ages are higher among cows than among bullocks. Death rate for cows somewhat increases over the ages from 3 to 8. For bullocks on the other hand it decreases considerably over this period. The condition is entirely different among buffaloes. The death rate is very much higher among he- than among she-buffaloes.

6.21 These rates are undoubtedly based on scanty material with possibly not very accurate reporting of ages of animals as also possibly not very complete reporting of deaths. It is believed, however, that the material is the only of its kind ever published in this country and hence would be found valuable.

6.22 Table 46 gives the age-specific birth rates for cows and she-buffaloes. The rates have been derived by relating the reported births during the four week period to the cows of appropriate ages. This would give a four weekly fertility rate. The annual fertility rate has been obtained by multiplying the four weekly rate by 13. It will be noted that for cows the fertility rate remains practically constant over the ages from 4 to 8. It will be noted that this is very different from what happens among human females, where the fertility rates rise and fall very rapidly as the age advances. The practically constant fertility rates among cows suggest that possibly in all animals including man, the fecundity remains very much the same over a large part of the fertile period and that the large differences in the human fertility rates at different ages are perhaps mostly differences in fertility and not so much in fecundity.

TABLE 33.
Number of animals per 1000 families (B-VI)

STATE	Bulls, bul-locks	Cows	Calves	He-buffa-loes	She-buffa-loes	Calves	Sheep	Goat	Horses	Camels	Donkeys,pigs & other animals	Hens, ducks, other poultry and birds
1. Punjab, etc.	1018	224	934	91	806	558	521	818	29	49	43	181
2. Rajasthan, Ajmer	1429	1845	1293	102	686	619	5509	2248	36	148	42	31
3. Uttar Pradesh	1133	639	461	133	489	335	152	458	25	3	99	132
4. Bihar	1127	726	519	131	273	188	59	612	13	-	136	974
5. Orissa	1332	1344	816	97	157	77	103	595	-	-	42	932
6. West Bengal	1159	982	937	151	34	64	10	619	8	-	10	1163
7. Assam, etc.	974	871	539	86	26	125	15	293	-	-	644	3373
8. Madhya Bharat, etc.	2345	2273	1875	95	903	615	165	988	58	-	18	358
9. Madhya Pradesh	1131	995	783	281	193	139	238	136	10	-	30	544
10. Hyderabad	987	999	608	90	233	215	356	500	10	-	152	2004
11. N. Bombay, etc.	1429	843	719	21	507	343	348	1298	51	3	36	797
12. Bombay Deccan	1327	803	623	133	404	255	872	699	24	-	121	1041
13. Madras	939	686	424	128	271	170	1407	500	3	-	59	588
14. Mysore, etc.	1231	788	636	124	328	186	1134	561	45	-	61	770
15. All-India	1226	967	743	124	395	282	733	704	22	12	90	747

TABLE 34.
Proportion of purchased animals to all animals (B-VI)

	STATE	Bulls, bul-locks	Cows	Calves	He-buffa-loes	She-buffa-loes	Calves	Sheep	Goat	Horses	Camels	Don-keys, mules, pigs & other ani-mals	Hens, ducks, other poultry and birds	Price of purch-ased to value of all ani-mals
1.	Punjab, etc.	69.09	40.05	7.04	74.32	55.18	8.85	7.66	12.31	88.73	90.68	56.19	37.27	55.28
2.	Rajasthan, Ajmer	48.32	13.91	2.26	61.88	39.72	0.24	8.26	22.84	45.83	43.69	45.24	14.52	30.43
3.	Uttar Pradesh	77.89	24.47	6.87	17.41	50.96	7.59	9.76	21.22	72.80	100.00	45.05	24.81	58.68
4.	Bihar	62.24	21.70	6.47	59.47	34.58	9.22	11.76	17.40	97.73	-	3.04	6.00	42.77
5.	Orissa	55.47	10.57	3.83	32.82	14.69	1.94	-	4.25	-	-	28.57	3.51	33.00
6.	West Bengal	60.00	15.64	8.67	54.48	53.03	4.92	60.00	14.21	46.67	-	36.84	18.98	41.05
7.	Assam, etc.	82.00	42.01	2.11	95.54	66.67	9.09	80.96	25.18	12.13	-	12.13	11.98	57.40
8.	Madhya Bharat, etc.	30.12	5.96	1.27	51.21	14.10	10.00	9.21	50.79	25.00	-	25.00	2.82	19.93
9.	Madhya Pradesh	53.63	19.50	4.23	92.11	34.69	1.13	15.88	19.12	81.82	-	25.00	22.36	39.41
10.	Hyderabad	73.57	29.16	4.13	59.85	40.23	1.26	22.90	42.93	53.33	-	11.16	22.98	51.75
11.	N. Bombay, etc.	56.98	13.28	6.15	-	30.96	4.74	2.06	12.89	61.39	100.00	27.93	6.65	38.48
12.	Bombay Deccan	52.87	18.39	2.68	58.44	48.24	6.88	20.33	15.33	65.12	-	19.95	17.69	42.66
13.	Madras	76.53	41.31	11.31	84.56	46.76	12.70	26.77	39.23	100.00	-	27.74	12.55	58.62
14.	Mysore, etc.	57.83	14.95	1.23	64.56	42.86	1.29	0.85	3.64	33.33	-	4.95	12.01	41.54
15.	All-India	60.07	20.65	4.93	71.75	89.68	5.28	12.81	18.62	63.92	59.54	21.29	13.60	42.75

Table 35.

Purchase price (Rs.) of all animals, per 1000 families (B-VI)

	STATE	Bulls, bul-locks	Cows	Calves	He-buffa-loes	She-buffa-loes	Calves	Sheep	Goat	Horses	Camels Donkey s,mules, pigs	Hens, ducks, other poultry & birds	Total
1.	Punjab, etc.	215051	56047	41461	9364	202016	13599	8265	16676	9886	25113	461	597939
2.	Rajasthan, Ajmer	244785	155616	65154	7850	145786	8665	88706	38386	5317	61744	73	822082
3.	Uttar Pradesh	192843	36031	20441	9322	99805	12783	1163	6534	1877	6235	459	387493
4.	Bihar	150318	47387	39952	14576	43774	8398	394	4176	1803	88	1477	312343
5.	Orissa	83568	37709	22252	13081	10833	613	685	3764	-	51	1147	173703
6.	West Bengal	122192	61807	32199	34447	5760	1811	35	5196	583	58	1580	265668
7.	Assam, etc.	75481	46015	19541	13116	8007	9180	56	3465	-	2783	6367	184011
8.	Madhya Bharat, etc.	346317	111635	88440	8175	184265	8608	1360	16029	4608	135	1146	770718
9.	Madhya Pradesh	111965	43391	19844	31035	2137	2137	3408	1564	1043	19	1117	217660
10.	Hyderabad	168710	73587	13360	6214	28384	7753	8484	8874	1223	395	3382	315366
11.	N. Bombay, etc.	285074	59451	52580	2719	120652	19039	4876	30446	6653	2419	1982	585891
12.	Bombay Deccan	272857	58425	35048	15501	70269	5166	8025	10171	1829	363	2282	479936
13.	Madras	124263	45806	10903	10457	26344	3991	16847	7043	519	290	934	247397
14.	Mysore, etc.	221192	54540	19172	7080	35989	2879	21617	19971	4010	421	1130	388001
15.	All-India	187604	61657	32315	13011	76000	9534	10324	11140	2979	7101	1438	413103

N.B. Where only home bred animals were reported, they were valued at their purchase prices, in an adjacent state.

TABLE 36.

Purchase price (Rs.) of animals of different ages (B-VI)

Age of animal at purchase (years)	Bulls and bullocks			Cows			He-buffaloes			She-buffaloes		
	No. of. animals	Total purchas eprice	Average price	No. of. animals	Total purchas eprice	Average purchase price	No. of. animals	Total purchas eprice	Average purchas e price	No. of. animals	Total purchas eprice	Average purchas eprice
Below 1	470	34880	74.21	139	5753	41.39	19	1391	77.28	127	7826	61.62
1-	487	44651	91.69	156	7153	45.85	43	3110	72.33	120	6994	58.28
2-	668	88250	132.11	223	12072	54.13	76	7272	95.68	142	14725	103.70
3-	908	137780	151.74	246	15731	63.95	122	10395	85.20	148	26367	178.16
4-	971	167840	172.85	243	17711	72.88	117	11832	101.13	222	44808	201.84
5-	895	176854	197.60	240	17909	74.62	123	13932	113.27	219	45364	207.14
6-	764	126734	165.88	169	11557	68.38	114	13623	119.50	202	48431	289.76
7-	574	91567	159.52	120	9824	81.87	76	9737	128.12	155	35423	228.54
8-	550	77065	140.12	112	6654	59.41	68	7802	114.74	132	27341	207.13
9-	162	20975	129.48	33	1848	56.00	17	1727	101.59	48	8807	183.48
Not stated	153	25097	164.03	54	6939	128.50	16	1212	75.75	28	7310	261.07
All ages	6602	991693	150.21	1735	113151	65.22	791	82083	103.84	1543	273396	177.18

TABLE 37.

Average purchase prices (Rs.) of animals, during last few years (B-VI)

Year of purchase	Bulls and bullocks		Cows		Calves		He-buffaloes		She-buffaloes		Calves	
	No.	Average purchase price	No.	Average purchase price	No.	Average purchase price	No.	Average purchase price	No.	Average purchase price	No.	Average purchase price
1941-42	285	62.80	64	30.80	-	-	14	69.36	45	64.87	-	-
1942-43	187	86.22	51	36.63	-	-	11	84.55	24	101.33	-	-
1943-44	133	115.52	32	40.28	-	-	5	100.00	25	107.84	-	-
1944-45	277	98.10	89	54.02	1	40.00	26	61.27	40	124.70	-	-
1945-46	382	141.85	119	52.71	2	41.00	49	102.98	78	154.79	-	-
1946-47	629	167.50	171	60.16	4	37.25	57	120.39	121	163.24	-	-
1947-48	948	163.45	263	73.17	14	31.21	117	106.29	222	203.07	11	25.00
1948-49	1027	171.11	310	73.88	50	32.82	123	123.32	249	212.57	24	39.96
1949-50	1738	166.70	438	68.23	138	40.22	261	103.78	385	204.48	55	26.73
1950-51	691	177.84	198	74.63	96	46.80	128	89.77	208	228.11	56	29.45

TABLE 38.

Age distribution of home bred and purchased animals (B-VI)

Age in years	Home bred and otherwise acquired animals						Purchased animals					
	Bulls & bullocks	Cows	Calves	He-buffaloes	She-buffaloes	Calves	Bulls & bullocks	Cows	Calves	He-buffaloes	She-buffaloes	Calves
Below 1	-	-	22.71	-	-	30.58	-	-	23.31	-	-	12.31
1-	-	-	37.76	-	-	31.50	-	-	37.20	-	-	20.77
2-	-	-	37.70	-	-	-	-	-	37.78	-	-	60.77
3-	11.79	10.97	-	33.79	14.90	-	7.97	9.79	-	6.32	3.58	-
4-	12.36	13.98	-	19.23	12.46	-	7.55	9.41	-	9.86	6.03	-
5-	13.50	14.49	-	10.44	13.35	-	9.24	12.30	-	9.61	10.66	-
6-	13.97	14.76	-	9.34	14.46	-	13.33	16.43	-	17.95	15.99	-
7-	8.80	9.20	-	7.97	8.69	-	9.20	8.81	-	10.12	12.62	-
8-	11.87	11.67	-	5.22	10.73	-	13.72	13.22	-	13.78	15.36	-
9 & above	26.94	24.12	-	13.19	24.92	-	36.23	26.83	-	30.34	33.80	-
Unspecified	0.77	0.81	1.83	0.82	0.49	092	2.36	3.21	1.71	2.02	1.96	6.15
Total=100	4036	6882	3064	364	2255	1949	6699	1838	2454	791	1426	130

TABLE 39.

Annual purchases of live-stock, per 1000 families (C-VI)

	STATE	Value of purchases (Rs.)											Total
		Bulls, Bul-locks	Cows	Calves	He-buffa-loes	She-buffa-loes	Calves	Sheep	Goat	Horses	Camels, donkeys mules pigs	Ducks hens other poultry & birds	
1.	Punjab, etc.	98457	27491	321	9274	105096	1689	1684	2919	5720	102760 (camels)	-	355411
2.	Rajasthan, Ajmer	40461	19710	524	16460	14075	203	124	2628	-	-	26	94211
3.	Uttar Pradesh	73933	4852	1779	4516	57696	609	-	7706	3906	406 (pigs)	365	155768
4.	Bihar	59362	6436	8287	4360	6049	218	335	1651	2765	45 (pigs)	150	89658
5.	Orissa	4807	-	455	-	-	-	-	368	-	-	-	5630
6.	West Bengal	75454	4002	724	5552	-	-	-	12309	-	-	772	98813
7.	Assam, etc.	18946	34642	2770	-	-	-	-	-	-	-	1902	58260
8.	Madhya Bharat, etc.	74374	108	1434	-	9451	-	-	956	-	-	-	86323
9.	Madhya Pradesh	45069	3189	471	20516	1519	1934	-	1601	483	-	463	75245
10.	Hyderabad	197817	11092	10925	2914	1837	-	1192	1219	-	-	680	227676
11.	N. Bombay, etc.	40164	2615	4236	2856	16991	-	457	1642	12285	6415 (camels)	199	87860
12.	Bombay Deccan	35932	7712	1611	-	25882	371	-	677	1996	150 (donkeys)	303	74634
13.	Madras	65108	10510	1447	7045	11803	339	2880	904	-	245 (pigs) (donkeys)	262	100543
14.	Mysore, etc.	155711	1094	63	2391	2867	55	-	3813	-	-	867	166861
15.	All-India	67986	8667	2492	6151	21897	474	621	2989	2412	7679	361	121729

TABLE 40.
Annual sales of live-stock, per 1000 families. (C-VI)

	STATE	Value of sales (Rs.)											Total
		Bulls, Bul-locks	Cows	Calves	He-buffa-loes	She-buffa-loes	Calves	Sheep	Goat	Horses	Camels, donkeys mules pigs	Ducks hens other poultry & birds	
1.	Punjab, etc.	27438	134	-	-	34644	4357	-	470	-	-	-	67043
2.	Rajasthan, Ajmer	1900	-	-	-	16171	-	242	845	229	18733 (camels)	-	38120
3.	Uttar Pradesh	16068	3412	2906	1635	18972	169	227	1349	1969	169 (pigs)	-	46876
4.	Bihar	14144	1234	1569	1008	8569	-	-	835	-	282 (pigs)	158	27799
5.	Orissa	-	445	-	-	-	-	-	-	-	-	97	542
6.	West Bengal	39054	5525	833	6568	-	-	-	352	-	-	210	52542
7.	Assam, etc.	19399	3001	5078	-	-	-	-	526	2382	2364 (pigs)	2761	35511
8.	Madhya Bharat, etc.	21824	5986	-	-	1314	10132	155	4869	-	508 (pigs)	-	44788
9.	Madhya Pradesh	46934	894	1288	7483	4063	1381	557	561	-	-	-	63161
10.	Hyderabad	29232	-	11163	-	-	-	3921	636	-	-	44	44996
11.	N. Bombay, etc.	15163	-	-	-	2306	8	-	863	-	-	34	18374
12.	Bombay Deccan	57670	638	353	-	11706	-	5014	1671	-	2523 (donkeys)	-	79575
13.	Madras	32040	6517	754	529	2713	292	3225	1458	-	988 (pigs)	58	48574
14.	Mysore, etc.	56766	3703	-	3578	-	-	-	469	-	-	-	64516
15.	All-India	26351	2547	1505	1590	8357	1103	947	1136	383	1478	152	45549

TABLE 41.
Average purchase and sale prices of livestock (C-VI)

STATE	Average purchase price (Rs.)						Average sale price (Rs.)					
	Bulls, bul-locks	Cows	Calves	He-buffa-loes	She-buffa-loes	Calves	Bulls, bul-locks	Cows	Calves	He-buffa-loes	She-buffa-loes	Calves
1. Punjab, etc.	239	69	4	133	289	21	285	6	-	-	249	43
2. Rajasthan, Ajmer	363	143	80	369	165	5	145	-	-	-	224	-
3. Uttar Pradesh	217	75	49	67	219	20	103	73	74	52	178	16
4. Bihar	177	114	105	83	179	29	104	41	46	67	285	-
5. Orissa	41	-	16	-	-	-	-	9	-	-	-	-
6. West Bengal	113	59	18	205	-	-	123	54	21	121	-	-
7. Assam, etc.	57	71	50	-	-	-	124	46	26	-	-	-
8. Madhya Bharat, etc.	218	6	80	-	132	-	183	77	-	-	220	68
9. Madhya Pradesh	173	41	19	180	125	119	154	37	26	71	143	68
10. Hyderabad	311	79	155	110	69	-	107	-	126	-	-	-
11. N. Bombay, etc.	202	62	83	225	287	-	163	-	-	-	78	1
12. Bombay Deccan	202	87	75	-	191	17	213	30	33	-	173	-
13. Madras	170	77	19	79	103	10	111	56	19	48	163	26
14. Mysore, etc.	297	35	8	77	74	2	251	47	-	65	-	-
15. All-India	200	76	53	126	208	22	144	53	46	71	196	51

TABLE 42.

Annual purchases and sales classified according to whether a trader was involved (C-VI)

STATE		Proportion of purchases from			Purchase value of purchases from			Proportion of sales to			Sale value of sales to		
		Pro-ducer	Trader	Total	Pro-ducer	Trader	Total	Consu-mer	Trader	Total	Consu-mer	Trader	Total
1.	Punjab, etc.	82.14	17.86	100.00	83.80	16.20	355411	57.63	42.37	100.00	67.46	32.54	67043
2.	Rajasthan, Ajmer	84.31	15.69	100.00	60.23	39.77	94211	82.14	17.86	100.00	99.31	0.69	38120
3.	Uttar Pradesh	53.20	46.80	100.00	46.59	53.41	155768	69.19	30.81	100.00	76.53	23.47	46876
4.	Bihar	69.62	30.38	100.00	52.05	47.95	89658	72.00	28.00	100.00	80.70	19.30	27799
5.	Orissa	33.33	66.67	100.00	41.01	58.99	5630	100.00	-	100.00	100.00	-	542
6.	West Bengal	63.91	36.09	100.00	54.57	45.43	98813	54.44	45.56	100.00	40.49	59.51	52542
7.	Assam, etc.	79.66	20.34	100.00	84.93	15.07	58260	88.29	11.71	100.00	92.07	7.93	35511
8.	Madhya Bharat, etc.	31.34	68.66	100.00	19.13	80.87	8632	19.57	80.43	100.00	14.45	85.55	44788
9.	Madhya Pradesh	49.32	50.68	100.00	24.17	75.83	75245	62.68	37.32	100.00	59.37	40.63	63161
10.	Hyderabad	60.14	39.86	100.00	20.87	79.13	227676	88.00	12.00	100.00	97.01	2.99	44996
11.	N. Bombay, etc.	59.67	40.33	100.00	30.18	69.82	87860	90.70	9.30	100.00	90.32	9.68	18374
12.	Bombay Deccan	96.99	3.01	100.00	98.48	1.52	74634	66.67	33.33	100.00	75.27	24.73	79575
13.	Madras	56.59	43.41	100.00	42.87	57.13	100543	66.53	33.47	100.00	75.90	24.10	48574
14.	Mysore, etc.	55.32	44.68	100.00	38.84	61.16	166861	76.92	23.08	100.00	93.76	6.24	64516
15.	All-India	63.49	36.51	100.00	51.96	48.04	121729	66.82	33.18	100.00	71.59	28.41	45549

TABLE 43.

Trader and 'non-trader' sale-purchase prices (Rs.) of livestock (C-VI)

Kind of animal	Purchased from						Sold to					
	Trader			Non-trader			Trader			Non-trader		
	No. of animals	Purchase price	Average Purchase price	No. of animals	Purchase price	Average Purchase price	No. of animals	Purchase price	Average Purchase price	No. of animals	Purchase price	Average Purchase price
1. Bulls, bullocks	86	21921	254.90	144	23552	168.56	25	2868	114.72	97	14496	149.44
2. Cows	9	758	83.67	66	5166	78.27	11	495	45.00	18	958	52.94
3. Calves	5	637	127.40	29	1171	40.88	6	195	32.50	19	1879	72.58
4. He-buffaloes	11	2099	190.82	20	1482	71.60	4	842	85.50	11	777	70.64
5. She-buffaloes	21	5085	242.14	49	9786	198.69	7	1320	188.57	23	4957	215.52
6. Calves	2	38	19.00	11	308	28.00	9	526	58.44	4	187	46.75

TABLE 44.
Age distribution of animals and of slaughter and deaths (B-VI, C-VI)

Age in years	No. of animals as enumerated in sch. B, block VI						Slaughter and deaths during one month (four weeks) as given in sch. C, block VI					
	Bulls, bullocks	Cows	Calves	He-buffaloes	She-buffaloes	Calves	Bulls, bullocks	Cows	Calves	He-buffaloes	She-buffaloes	Calves
Below 1	-	-	1268	-	-	612	-	-	47	-	-	37
1-	-	-	2070	-	-	748	-	-	18	-	-	15
2-	-	-	2082	-	-	693	-	-	9	-	-	9
3-	1010	935	-	173	387	-	5	3	-	3	3	-
4-	1005	1135	-	148	367	-	2	10	-	1	2	-
5-	1164	1223	-	114	453	-	8	10	-	4	1	-
6-	1457	1318	-	176	554	-	5	10	-	1	5	-
7-	971	795	-	109	376	-	2	6	-	-	2	-
8-	1398	1046	-	128	461	-	3	11	-	3	4	-
9 & above	3541	2153	-	288	1044	-	38	32	-	4	12	-
Unspecified	189	115	98	19	39	26	5	1	-	2	2	-
Total	10735	8720	5518	1155	3681	2079	68	83	74	18	31	61

TABLE 45.
Annual death rates of animals at different ages (B-VI, C-VI)

Age in years	Average death rate per 1000 animals					
	Bulls, bullocks	Cows	Calves	He-buffaloes	She-buffaloes	Calves
Below 1	-	-	263.2	-	-	385.6
1-	-	-	84.5	-	-	194.7
2-	-	-	55.2	-	-	154.3
3-	60.9	85.9	-	149.3	83.2	-
4-	60.9	85.9	-	149.3	83.2	-
5-	60.9	85.9	-	198.7	74.9	-
6-	41.0	94.1	-	198.7	74.9	
7-	26.6	94.1	-	151.8	88.6	-
8-	26.6	126.0	-	151.8	88.6	-
9 & above	128.6	174.4	-	164.4	136.4	-

TABLE 46.
Birth rates for cows and buffaloes at different ages (B-VI, C-VI)

Age of animal	Cows No. of calves per 100 cows	Buffaloes No. of calves per 1.00 buffaloes
3.	27.82	20.15
4.	40.04	
5.	44.59	52.00
6.		
7.	45.50	44.98
8.	46.02	36.66
9 & above	16.90	21.19

7. IMPLEMENTS AND MACHINERY

7.1 In Table 47 we give details of implements and machinery owned by families in different states. All figures are given on the basis of per 1000 families. Not all implements are purchased. Some are home-made or otherwise acquired. In Table 48 is shown what proportion the purchased implements and machinery bear to all implements owned. Thus of all ploughs, only 64.4 per cent are purchased. The remaining, most of which should be the wooden ones, are home-made. In this connection, it should be noted that a number of traditional implements of agriculture are supplied by village artisans who are remunerated on an annual basis so that the supply of these implements by them do not always take the form of direct sale and purchase. It is possible that in such cases the implements were reported as not purchased and hence by inference as home-made. Thus only about half of the smaller implements such as harrows, hoes, and seed-drills are reported to be purchased. If the remaining were home-made, it is probably meant that they were supplied by the village artisans receiving, annual remuneration. In Table 49 the implements and machinery have been valued at their purchase prices. Implements not purchased, that is those home-made, have been valued at corresponding purchase prices. It will be noted that the value of implements comes to about Rs. 65 per family in rural India. It is considerably higher in Saurashtra and Bombay and also to some extent in Punjab and Rajasthan.

7.2 In Table 50 is shown the average purchase price of implements purchased in different years in the past. It will be noticed that, unlike the prices of live-stock, the prices of implements do not show any positive rise during, the ,period from 1941 to 1950.

7.3 Data on current purchases and sales were noted on C-VII and VIII and are presented in the next section.

TABLE 47.

Number of implements and machinery owned, per 1000 families (B-VII)

	STATE	Plough	Clod-crusher	Harrows	Bullock hoes	Seed-drill	Water lift	Bullock cart	Machinery	Others
1.	Punjab, etc.	655	62	130	41	6	10	183	302	574
2.	Rajasthan, Ajmer	796	71	47	7	48	337	267	57	583
3.	Uttar Pradesh	626	73	4	91	10	47	137	126	300
4.	Bihar	465	19	30	1	1	4	76	30	89
5.	Orissa	581	-	-	-	-	-	164	5	70
6.	West Bengal	532	16	43	-	7	13	157	14	216
7.	Assam, etc.	481	11	23	54	43	3	45	80	351
8.	Madhya Bharat, etc.	793	131	133	158	147	89	249	14	222
9.	Madhya Pradesh	446	2	119	24	83	13	375	41	253
10.	Hyderabad	761	79	206	5	192	86	252	20	555
11.	N. Bombay, etc.	598	250	218	193	253	192	269	20	570
12.	Bombay Deccan	423	16	506	159	249	122	236	58	501
13.	Madras	562	9	18	39	26	96	106	33	224
14.	Mysore, etc.	720	11	321	46	61	40	121	99	552
15.	All-India	592	57	108	62	72	74	185	68	340

TABLE 48.

Proportion to total of purchased implements and machinery (B-VII)

	STATE	Plough	Clod-crusher	Harrows	Bullock hoes	Seed-drill	Water lift	Bullock cart	Machinery	Others	Price of purchased to value of all implements
1.	Punjab, etc.	70.54	43.33	30.88	-	26.67	100.00	93.26	91.56	72.71	85.59
2.	Rajasthan, Ajmer	82.15	62.14	62.87	53.85	32.29	88.49	88.11	96.49	84.00	86.51
3.	Uttar Pradesh	77.34	57.46	100.00	44.49	93.75	100.00	95.83	94.44	95.27	90.54
4.	Bihar	71.69	84.62	84.31	100.00	100.00	100.00	79.85	87.62	80.58	79.77
5.	Orissa	68.50	-	-	-	-	-	85.00	100.00	91.49	79.45
6.	West Bengal	70.65	-	45.78	-	100.00	100.00	74.83	81.48	69.57	75.91
7.	Assam, etc.	11.96	50.00	-	-	13.33	100.00	100.00	14.29	68.77	37.94
8.	Madhya Bharat, etc.	39.83	34.97	24.48	36.05	14.06	85.49	81.15	96.67	47.20	67.39
9.	Madhya Pradesh	52.98	100.00	65.09	41.56	71.70	100.00	84.25	90.84	56.44	77.53
10.	Hyderabad	53.93	49.14	41.25	25.00	20.49	69.84	73.58	76.67	78.58	66.87
11.	N. Bombay, etc.	76.59	85.05	78.77	84.51	79.90	97.80	93.95	69.35	92.06	88.09
12.	Bombay Deccan	62.13	68.33	39.02	29.53	51.27	98.21	87.80	97.65	69.16	83.92
13.	Madras	58.35	11.63	42.17	9.34	69.11	92.43	89.66	94.12	87.08	85.61
14.	Mysore, etc.	65.69	-	66.67	-	70.59	86.36	98.51	64.85	87.38	79.51
15.	All-India	64.40	62.25	52.74	43.98	55.02	92.37	87.33	86.54	79.64	81.16

TABLE 49.

Purchase price (Rs.) of all implements and machinery owned (B-VII)

	STATE	Plough	Clod-crusher	Harrows	Bullock hoes	Seed-drill	Water lift	Bullock cart	Machinery	Others	Price of purchased to value of all implements
1.	Punjab, etc.	11382	650	1470	288	23	1950	45514	22484	15676	99437
2.	Rajasthan, Ajmer	11372	1977	659	40	473	18774	47318	6975	12845	95433
3.	Uttar Pradesh	9089	2118	48	819	1458	2328	22855	13202	8441	60358
4.	Bihar	5071	370	203	5	4	52	9163	4262	3469	22599
5.	Orissa	6352	-	-	-	-	-	9334	476	670	16832
6.	West Bengal	6375	161	314	-	92	264	13427	19093	5217	44943
7.	Assam, etc.	4989	57	164	270	234	57	3793	14378	9420	33362
8.	Madhya Bharat, etc.	8557	1096	909	1059	1669	5133	30746	1032	5284	55485
9.	Madhya Pradesh	5277	16	1313	614	878	693	26217	5712	4508	45228
10.	Hyderabad	12618	1840	4221	90	2254	2938	39128	2059	10305	75453
11.	N. Bombay, etc.	13794	4123	3896	3650	4813	10339	59518	12089	12722	124944
12.	Bombay Deccan	9570	205	5853	1268	2538	6605	45994	46325	19151	137509
13.	Madras	5695	160	231	231	549	7480	18412	8665	3119	44542
14.	Mysore, etc.	9090	194	2698	278	468	2036	22615	22115	10472	69966
15.	All-India	8541	1068	1378	882	1384	4071	28382	11775	8064	66545

TABLE 50. Average purchase prices. (Rs.) of implements and machinery, during last few years (B-VII)

Year of purchase	Plough		Harrows		Seed-drill		Clod-crusher		Bullock hoes	
	No.	Av. purchase price	No.	Av. purchase price	No.	Av. purchase price	No.	Av. purchase price	No.	Av. purchase price
1941-42	177	18.97	46	22.83	25	13.60	5	30.60	14	9.43
1942-43	51	22.61	38	9.71	14	26.57	9	14.89	4	8.75
1943-44	22	15.86	8	13.88	11	25.36	5	28.80	4	6.50
1944-45	43	19.86	18	14.22	13	17.38	5	39.00	6	6.17
1945-46	108	15.45	30	14.87	31	14.03	13	18.62	19	11.79
1946-47	149	18.91	45	13.24	29	16.83	16	25.13	16	10.88
1947-48	301	14.95	76	13.84	54	18.69	53	29.11	38	13.08
1948-49	495	14.08	112	11.46	87	13.93	58	14.29	57	10.23
1949-50	1576	12.49	164	11.98	87	14.72	101	15.61	52	11.48
1950-51	244	16.20	19	12.05	7	9.71	12	14.83	4	9.50

TABLE 50. (Contd.) Average purchase prices (Rs.) of implements and machinery during last few years (B-VII)

Year of purchase	Water lift		Bullock cart		Machinery		Others	
	No.	Av. purchase price	No.	Av. purchase price	No.	Total purchase price	No.	Total purchase price
1941-42	34	56.56	334	112.44	119	14439	305	9492
1942-43	8	21.38	64	143.66	26	1788	81	1928
1943-44	1	10.00	41	186.17	12	556	45	857
1944-45	8	38.25	81	163.70	26	6068	90	2213
1945-46	19	106.58	92	156.47	35	2952	178	3940
1946-47	30	40.43	129	160.56	54	14822	190	4192
1947-48	61	37.74	183	165.03	59	10756	328	12632
1948-49	102	44.99	190	176.44	67	17307	394	9041
1949-50	222	52.06	232	179.62	85	32501	597	20246
1950-51	83	46.93	68	184.06	63	64136	150	4039

8. CAPITAL ACCOUNT

8.1 Information on receipts obtained by liquidating assets or creating liabilities was noted in C-VII. Similarly information on outlays on formation of new assets and clearing of liabilities was noted in C-VIII. The asset items enumerated in C-VII and C-VIII might be broadly grouped into two groups, namely, physical and financial. The physical assets comprise real estate in lands and buildings, livestock, implements and machinery. In previous sections we have described the existing stocks of these capital assets. In the present section we propose to present material regarding current capital formation. In this section we shall present the data relating to the material assets only and shall deal with the financial assets in a subsequent section.

8.2 Regarding real estate in land and buildings, the data noted in C-VII and C-VIII relate to purchases and sales of real estate. We had intended that the outlay on creation of new assets would also cover expenditure on land improvement and on new construction. But apparently our instructions on this point were not sufficiently clear. We had also thought that such bulk items of expenditure as might be involved in land improvement and new construction could not be satisfactorily estimated from the information collected on a four week basis and had therefore included these items in B-IV. That could also have caused the misunderstanding that they were not to be included in C-VIII. In any case, as it appears, in C-VII and C-VIII, only the sales and purchases of real estate were noted. For reasons explained below, we propose to deal with sales and purchases of real estate in a subsequent chapter.

8.3 As will appear from the data presented later the reported expenditure on purchase of real estate somewhat exceeds the reported receipts from its sale. From the stand-point of an individual, such a situation must be regarded as leading to an addition to his assets. From the standpoint of the whole community, however, purchase or sale of real estate does not, imply more than a mere transfer of the holding of such assets, except perhaps for some amount of expenditure incidental to the transfer itself, such as, the middlemen's commission, stamp duties, etc. Such transfers do not obviously lead to any addition to the material assets of the community. In so far as the NSS sample did not cover the whole community but only the rural sector, our data stand in an intermediate position. There is reason to believe that the small difference between the reported purchases and sales of real estate is real in the sense that it is neither all due to sampling errors of the sample nor is entirely due to the incidental expenses of the transfer. With the rural community, purchase of land and sometimes of buildings, has been a traditional form of holding or investing their savings and it is generally believed, on reasonable evidence, that there has been going on in recent years a net transfer of ownership of land from the urban and the small town sector to the rural sector. In so far as the difference between the reported purchase and sale of real estate is indicative of such a transfer, it must be interpreted as adding to the assets of the, rural sector. Nevertheless, it seems it would be desirable not to treat it on par with net additions to material assets such as for instance would result from the expenditure on land improvement or new construction. We therefor prefer to treat the purchase of real estate as more a form of holding savings rather than a component of material capital formation and propose to treat transactions in real estate, along with other items of savings, in a subsequent chapter.

8.4 Items which might be regarded as directly leading to the formation of new capital in the field of real estate are land improvement and, new construction. Information relating to annual expenditure on these items was collected in B-IV and presented in Table 28. We have reproduced the items on the expenditure side of Table 51. As was earlier noted, the annual expenditure on land improvements is reported to be about Rs. 17 per family and that on new construction to be about Rs. 18 per family.

8.5 We have also earlier presented the data relating to the purchase and sale of livestock. For ready reference, we have reproduced the summary figures in Table 51. As was noted, there is a substantial gap between the reported purchases and sales of livestock. The nature of this gap, as indicated earlier, appears to be too complex and various to treat it as a simple item of balance between the urban and the rural sectors and hence to regard it as net investment by the rural sector in the form of livestock. In order to assess the net capital formation in the form of livestock it seems preferable to approach the problem from the actuarial standpoint and to calculate the annual appreciation and depreciation in the value of livestock due to births and deaths as also on account of the changes in its age composition. We have earlier presented the relevant data. We do not however propose to derive any net appreciation or depreciation figure as it might tax the data too much. More extensive data with greater regional breakdown would be desirable for the purpose Nevertheless, it might be remarked that on the face of it, there appears little evidence to suppose that the livestock is more than replacing itself.

8.6 Other items of physical capital formation are the purchase of implements, machinery and other assets. The data relating to the receipts by sale and expenditure on purchases of these items were obtained in C-VII and C-VIII and are given in respective columns of Table

51. As will be observed, the receipts on account of the sale of these items are small. Moreover, the expenditure on purchases need to be netted for receipts by sale only to the extent that the latter involved only a transfer of old and already existing equipment. Therefore, practically the whole of the expenditure on purchases of implements and machinery might be regarded as net investment in this form. It will be noted that the all-India average expenditure on these items is about Rs. 46 per family.

8.7 Broadly if as a measure of physical capital formation we take the difference between the expenditure and receipts sides of Table 51, we see that the all-India average is nearly Rs. 150 per family. However, nearly half of this difference is on account of the transactions in live-stock. For reasons already explained if we prefer to exclude the livestock purchases and sales, we have about Rs. 75 per family as net investment in physical capital formation. It should be noted that this gives gross physical capital formation in real estate and equipment as no allowance is made for the depreciation of existing assets. On the other hand no account is taken of expenditure on routine repairs as also of all activity leading to the addition of physical assets not involving explicit expenditure. These might be presumed to meet the depreciation. In that case, one might regard. Rs. 75 per family as net formation of physical capital.

8.8 In the two bottom lines appear similar data separately tabulated for the agricultural and the non-agricultural families, on an all-India basis. Generally speaking, the all-India average for all families should lie between the average for, the agricultural and the non-agricultural families. It will be noticed that this is generally so. Nevertheless, there are a few discrepant results, in the present as well subsequent tables. The principal reason for these discrepancies is the fact that though in deriving the all-India average for all families, for reasons earlier explained, the sample of families in the Bombay Deccan was halved, no such adjustment was done in deriving the all-India average for the agricultural and the non-agricultural families. The discrepancies are usually negligible and might be neglected.

8.9 It will be noticed that the capital formation by the agricultural families is very much higher than that by the, non-agricultural families. If we include the net, purchases of livestock, the net investment by the agricultural families is seen to be Rs. 217; excluding the purchases of livestock it is nearly Rs. 120 per family. Corresponding figures for the non-agricultural families are Rs. 58 and Rs. 28 only.

TABLE 51.
Capital account per 1000 families.

STATE		Receipts (Rs.)					Expenditure (Rs.)						
		Sale of live-stock	Sale of farm imple-ments	Sale of other mach-inery	Sale of other assets	Total	Pur-chase of live-stock	Pur-chase of farm imple-ments	Pur-chase of other mach-inery	Pur-chase of other assets	Land impro ve-me nts	New con-struc-tion	Total
1.	Punjab, etc.	67043	-	-	9296	76339	355411	40812	449	2956	7060	29080	435768
2.	Rajasthan, Ajmer	38120	767	-	5190	44077	94211	49444	9861	-	14450	28400	196366
3.	Uttar Pradesh	46876	7914	950	3083	58823	155768	19802	20318	927	8230	14130	219175
4.	Bihar	27799	312	-	5507	33618	89658	2242	36412	1452	6460	10050	146274
5.	Orissa	542	-	-	-	542	5630	4411	2321	-	4410	19360	36132
6.	West Bengal	52542	440	-	4503	57485	98813	542	74	1449	7580	12300	120758
7.	Assam, etc.	35511	4857	222	-	40590	58260	5651	1782	-	4440	10960	81093
8.	Madhya Bharat, etc.	44788	-	-	5275	50063	86323	3549	4899	1721	7380	21450	125322
9.	Madhya Pradesh	63161	2356	6390	7272	79179	75245	7203	3851	94201	24070	10380	214950
10.	Hyderabad	44996	-	-	-	44996	227676	2994	1722	114191	26390	15870	388843
11.	N. Bombay, etc.	18374	559	-	1291	20224	87860	25217	13279	10580	26530	24680	188146
12.	Bombay Deccan	79575	-	-	3047	82622	74634	2637	143381	-	30360	21880	272892
13.	Madras	48574	326	3562	3072	55534	100543	8189	2309	-	32230	18630	161901
14.	Mysore, etc.	64516	2492	-	4594	71602	166861	21727	17719	2258	38730	29910	277205
15.	All-India	45549	1817	1183	3994	52543	121729	14340	17458	14857	17400	18340	204124
Agricultural families		61191	1123	2020	3625	67959	158923	19858	87087	10799	28370	29660	284697
Non-agricultural families		23665	692	63	4701	29121	53361	1938	2604	14288	4500	10010	86701

9. DEBT AND DUES

9.1 In Table 52 we give details regarding debts and dues reported in different states. In the first two columns of the table, are given the proportions of indebted families and debt per family in different states. It will be observed that considering the whole of India, nearly 52 percent of the rural families were reported indebted. The debt per family was Rs. 224 so that the debt per indebted family would be about Rs. 430. Comparing different states, it will be seen that the level of indebtedness was very high in the south and very low in the east. The figures for indebtedness in Rajasthan appear very high and are not in keeping with the level of indebtedness in the neighbouring states.

9.2 In the next three columns is given a distribution by purpose of the outstanding debt. It will be observed that, considering the whole country, nearly half of the indebtedness is for household purposes and less than 40 percent for farm and other business purposes. In Hyderabad and Bombay where the level of indebtedness was noted to be high, nearly 60 percent of the debt is reported for business and only about 33 percent for household purpose. This is not true of Madras where the level of indebtedness is also equally high but the proportion for business purposes is not much above the all-India average. Proportion of the debt for household purposes is high in the eastern states where the level of indebtedness was noted to be low. In Rajasthan where the level of indebtedness was noted to be exceptionally high, a large proportion of the debt is for household purposes.

9.3 In the remaining columns of the table, similar information concerning reported dues is given. It will be noted that the all-India average of the reported dues is only Rs. 54 per family which is only about one-fourth of the reported indebtedness. This should be largely on account of the fact that a considerable number of the creditors are residents of urban towns and cities not covered by the NSS sample. Madras and to some extent Hyderabad are important exceptions to this general observation. In Madras, the reported dues form about 66 percent of the reported debt and in Hyderabad the dues are nearly 40 percent of the debt. It appears, therefore, that a large part of the rural credit in these states, particularly in Madras, is available in the rural areas. Regarding the figures of dues generally, it should be noted that apart from the fact of a large number of creditors being residents, there also exists a certain possibility of under-reporting of dues.

9.4 Generally a larger proportion of dues has been reported as given for business purposes than the corresponding proportion of reported debt. There appears little *prima faci* justification to suppose that the urban creditors lend more for the household purposes and the rural creditors more for the business purposes. What appears more likely is that the debtor often pretends to borrow for business purposes and actually spends on private account.

TABLE 52.

Debt and Dues (B-IX)

	STATE	Proportion of indebted families %	Debt per family Rs.	Distribution of debt, by purpose (%)			Proportion of families reporting dues %	Dues per family Rs.	Distribution of dues, by purpose (%)		
				House-hold	Business	Others			House-hold	Business	Others
1.	Punjab, etc.	57.28	271	60.74	32.00	7.26	3.45	34	42.17	27.92	29.91
2.	Rajasthan, Ajmer	61.79	419	56.62	31.45	11.93	5.49	84	62.53	18.01	19.46
3.	Uttar Pradesh	59.03	179	49.71	32.15	18.14	4.17	19	37.66	38.58	23.76
4.	Bihar	52.20	143	62.74	18.40	16.86	3.47	15	60.76	19.25	19.99
5.	Orissa	55.73	88	76.99	3.89	19.12	3.65	29	48.53	10.35	41.12
6.	West Bengal	44.06	94	54.64	14.34	31.02	2.86	2	31.38	38.04	30.58
7.	Assam, etc.	38.63	68	74.14	20.60	5.26	9.09	31	39.99	25.70	34.31
8.	Madhya Bharat, etc.	60.57	170	54.42	16.38	29.20	4.27	18	39.96	47.01	13.03
9.	Madhya Pradesh	46.06	115	38.33	43.15	18.52	2.13	5	40.93	45.10	13.97
10.	Hyderabad	64.06	338	33.96	58.62	7.42	5.43	143	4.31	94.43	1.26
11.	N. Bombay, etc.	45.37	325	35.48	49.65	14.87	2.08	24	12.59	86.57	0.84
12.	Bombay Deccan	48.38	346	34.22	57.66	8.12	4.88	25	27.61	49.14	23.25
13.	Madras	68.19	318	46.03	39.41	14.56	8.35	202	10.67	86.66	2.67
14.	Mysore, etc.	58.16	251	52.79	35.78	11.43	4.93	61	6.89	24.81	68.30
15.	All-India	51.88	224	48.06	37.45	14.49	4.55	54	21.14	66.39	12.47

10. RESERVE ACCOUNT

10.1 Along with debt and dues should be considered current financial transactions including current borrowings and lendings. The information was obtained in C-VII and VIII. In Table 53 we have summarised the information in a form - entitled 'Reserve Account' in accordance with the social accounting terminology.

10.2 It will be noted that, considering the whole country, the fresh borrowings amount to Rs. 88 per family which is about 40 percent of the outstanding debt. The extent of fresh borrowings as also their proportion to the total outstanding debt varies greatly in different states and needs careful examination. In doing this, it should be borne in mind that the current borrowings form generally a large part of the outstanding debt, and as the current borrowings and repayments are largely seasonal phenomena, the level of indebtedness also varies considerably in different seasons of the year.

10.3 For reasons earlier noted, the reported lendings are far short of the reported borrowings. For the same reasons, the reported recoveries are also far short of the reported repayments. Repayments themselves are only about half of the reported borrowings. It is possible, however, that a large part of the annual re-payments take place between April and June, a period not covered by the Survey.

10.4 The considerable reporting of purchase of bullion is noteworthy. The reported purchases of bullion, ornaments, jewellery, etc., amounted to Rs. 20 per rural family in the country. They are very large in Assam and also to some extent in Uttar Pradesh and Orissa. They are very low in the south. The reported sales of bullion, etc., are only about 40 percent of the reported purchases, presumably because a majority of dealers in bullion, etc., are urban residents.

10.5 In order to derive a measure of gross savings from these data, we propose, for reasons earlier explained, to add to these the data on sale and purchase of land and buildings. The data are given in respective columns of Table 53. As will appear; the purchases of real estate exceed the sales by about Rs. 10.5 per family. Treating the purchase of real estate as only a form of holding the rural savings, we might regard this as a component of savings. Another familiar form of holding the savings is the purchase of bullion. As will be seen, there appears a net purchase of bullion worth about Rs. 12 per family. The net investment in other financial assets such as deposits is negligible and amount to only about Re. 1 per family. It appears, therefore, that there is a net saving of about Rs. 23.5 per family held in the form of real estate, bullion or other financial assets.

10.6 The interpretation of lendings and repayments as forms of savings is a little complicated. From the point of view of the individual, lendings, and repayments are normal channels of savings. From the standpoint of the community, the lendings and repayment by one individual implies borrowing and recovery of loan by another. The 'savings' of one group are thus balanced by the 'dis-savings' of another. Even from the individual standpoint it would, be necessary to net his lendings and repayments by borrowings and recoveries, at least to the extent that the latter have directly financed the former. Fresh borrowings might finance both lendings and repayments. Similarly recoveries of earlier loans would finance fresh lendings. We have no information on these points to judge the extent to which this happens. It should also be noted that we have no data on the changes in cash balances of the individuals.

10.7 In the last two lines of the table, similar data are given separately for the agricultural and the non-agricultural families. It is evident that the non-agricultural families operate at a much lower level.

TABLE 53.

Reserve account per 1000 families.

STATE	Receipts (Rs.)						Expenditure (Rs.)					
	Sale of land	Sale of buildings	Sale of bullion	Sale of shares, etc.	Loan (recovery)	Fresh borrowings	Purchase of land	Purchase of buildings	Purchase of bullion	Purchase of shares, etc.	Loan (repayment)	Fresh lendings
1. Punjab, etc.	6580	-	30426	7216	8841	152226	7067	390	24300	1834	25305	30800
2. Rajasthan, Ajmer	14016	-	4724	-	2575	80981	79946	236	10792	13583	14441	16846
3. Uttar Pradesh	9560	117	7789	4336	11875	127306	79136	18675	37956	9211	94246	13154
4. Bihar	51959	963	3028	1196	245	22239	20798	-	4646	-	16438	2208
5. Orissa	4701	-	3366	-	-	5407	-	-	34318	-	4972	590
6. West Bengal	109667	616	6839	-	2837	61161	4530	10292	7373	4015	16622	2289
7. Assam, etc.	79976	369	16130	2955	16638	106549	109014	2530	96420	1662	27958	29185
8. Madhya Bharat, etc.	412	137	3405	-	382	42406	651	5407	26150	400	31365	10067
9. Madhya Pradesh	33215	4388	19415	13499	4335	61608	25476	4846	20942	8674	44740	8483
10. Hyderabad	72568	-	1369	-	2429	49342	17425	29692	-	768	18528	689
11. N. Bombay, etc.	65195	2319	-	-	1587	71759	43046	330	15336	63	77667	3385
12. Bombay Deccan	214	3806	10000	1454	5884	53219	14579	6011	4918	-	15370	-
13. Madras	6261	-	3069	-	1914	127739	26784	8	8478	1998	24269	14580
14. Mysore, etc.	-	-	10391	9883	26250	200320	118203	78	8875	10023	120930	68125
15. All-India	29327	955	8269	3082	5675	87815	39144	5646	20116	4026	42547	13192
Agricultural families	40386	323	8623	1427	3931	99689	61334	9158	25806	6716	45840	38699
Non-agricultural families	14783	1567	12242	4448	5907	59312	8867	1926	14475	2055	21134	6805

11. COMMODITY ACCOUNT

11.1 Information on production and other receipts of commodities was obtained in C-IV. Similarly, that relating to sales and other disposals was obtained in C-V. We have summarised the information for different states in Table 54. The items in this table are all liable to large seasonal variations. The annual estimates given in the table, as they are based on a single visit between October and March, are therefore not very reliable. Nevertheless, it might be noted that the all-India average of the production of all commodities is reported to be about Rs. 1335 per family.

11.2 Though, on account of the seasonal variation to which they are liable, the absolute figures in the table are not likely to be very trustworthy, it appears that the inter-relationships between different columns of the table may be somewhat less liable to large seasonal variation, particularly in view of the fact that a period of six months approximating to the whole winter season of agriculture has been averaged. It might therefore be noted that in the all-India averages, the reported sales form about 27 percent of the reported production. There is considerable variation in this respect between different states. The sales form a large proportion of production in Punjab, Uttar Pradesh, Assam, Saurashtra and some extent in Mysore. They form a very small proportion in Assam, Bihar, West Bengal and the Bombay Deccan.

11.3 Disposals in the form of ownershare constitute about 2.8 percent of the production in the all-India averages. They form nearly 9 percent in Orissa and West Bengal and about 6.5 percent in Punjab. This proportion is less than one percent in Madhya Bharat, Madhya Pradesh and Uttar Pradesh.

11.4 Disposals in the form of Wages given in kind constitute 5.8 percent of the reported production in the all-India averages. This proportion is above the all India average only in Madhya Bharat, Madhya Pradesh, Hyderabad and Madras. In other states it is below the all-India average.

11.5 As will be seen, there appear two estimates of owner share and wages in kind, one from the reported receipts, and the other from the reported payments in these forms. The all-India averages in both cases are fairly close. Thus, the reported receipts as ownershare are only about 10 percent higher than the reported payment of ownershare. Similarly, wages in kind reported as received form about 84 percent of the reported payments.

Having regard to the possible reporting biases in this respect, the correspondence is not altogether unsatisfactory. But similar correspondence does not hold good in most states and it is doubtful whether the discrepancies can all be explained as due to sampling errors. Earlier, while presenting the data on reported receipts and payments of cash wages, we had indicated a number of circumstances which might lead to, discrepancy between the two sets of data. It should be noted that those circumstances would not be equally operative in causing discrepancy between the reported receipts and payment of wages in kind. The nature and underlying reasons for the present discrepancy therefore needs further examination.

11.6 Commodity disposals, as raw materials used up in production forms, it should be noted, nearly 4 percent of the production receipts in the all-India averages. In the last column is shown the surplus of all receipts over all disposals. While reading this column, it should be noted that the consumption at home has not been taken account of in the disposals.

11.7 in Table 55 are given particulars of the production receipts noted in Table 54. Similar particulars regarding sale of commodities are given in Table 56. In these tables, the production and sales of different commodities are given for each group of states.

11.8 More particulars regarding the receipts and disposals of the commodities are given in Table 57. The table is based on an all-India basis. For each commodity is shown the total receipts and total disposals. Different types of receipt are shown as percentages of the total receipts and different types of disposal are shown as percentages of the total disposals. In the last column, the total disposals are shown as percentages of the total receipts. Thus the total receipts of paddy amounted to Rs. 486 per family and its total disposals to Rs. 132. Thus the disposals were about 27 percent of the receipts. Of the total receipts of paddy, nearly 90 percent were production receipts, about 4 percent as receipts of owner share, another 4 percent as remuneration and wages received in kind and about 2 percent as other receipts such, as material contributions received from landlords. Out of the total disposals, nearly 48 percent were sales, 19 percent as payment of owner share, 18 percent as remuneration and wages paid in kind, 1 percent as raw material used in production and 14 percent as other disposals. In making any comparison between distribution by type of receipts and disposals of different commodities, it must be noted that such a comparison will not be justified with out a full year's data.

11.9 Similar data for the agricultural and the non-agricultural families separately are given in Tables 58 and 59, respectively. It will be seen, that payment of remuneration and wages in kind form a considerable proportion in the commodity disposals of the agricultural families. On the other hand, such receipts in kind form a considerable proportion in the commodity receipts of the non-agricultural families. However, in view of the fact that even the non-agricultural families reported considerable production receipts of agricultural, commodities suggests that in this category a number of cultivating families, were included. Without them the contrast between the agricultural and the non-agricultural families would have been much sharper.

TABLE 54.

Commodity account per 1000 families (C-IV)

STATE	Production	Other receipts (C-IV)			Total Receipts	Sales	Other disposals (C-V)				Total Disposals (Rs.)	Difference Receipts Disposals
		owner share	remuneration and wages in kind	material contributions etc.			owner share	remuneration and wages in kind	raw material in production	material contributions etc*		
1. Punjab, etc.	1264358	45297	104636	78975	1488266	542521	82501	48237	82405	54822	810486	677780
2. Rajasthan, Ajmer	1480836	42145	31222	25554	1579757	435970	16066	36019	269598	59194	816847	762910
3. Uttar Pradesh	943246	23076	39870	79764	1085956	366265	8839	34185	81274	30063	520626	565330
4. Bihar	1459595	48523	114667	68796	1691481	152676	46520	73915	35171	96380	404662	1286819
5. Orissa	688854	11065	48112	21705	769736	48566	67447	24220	4778	123664	268675	501061
6. West Bengal	2307380	141564	128991	80539	2658474	362509	190828	35919	108651	78128	776035	1882439
7. Assam, etc.	1445232	76754	45048	9335	1576369	711144	56783	64142	4358	38502	874929	701440
8. Madhya Bharat, etc.	1127548	5407	63746	56983	1253684	205886	2635	79177	68388	17600	373686	879998
9. Madhya Pradesh	1863981	51521	77874	32943	2026319	390016	8986	110902	8202	82103	600209	1426110
10. Hyderabad	1342291	46383	226148	69963	1684785	333751	16356	104618	17239	38126	510090	1174695
11. N. Bombay, etc.	1277276	20575	23943	56795	1378589	557400	21252	25958	20469	20038	645117	733472
12. Bombay Deecan	1372025	57595	32728	10138	1605861	157989	30729	36523	83869	14376	323486	1282375
13. Madras	857489	16369	50188	22931	946977	275971	20591	52328	15128	30240	394258	552719
14. Mysore, etc.	1848148	77406	27344	33602	1986500	650258	52477	69703	13500	39875	825813	1160687
15. All-India	1334926	40960	65933	52121	1493940	361131	34041	70784	49380	45282	560618	933322
Agricultural families	2080502	72439	33490	57031	2243376	548483	70467	96457	77068	67616	855091	1388285
Non-agricultural families	329165	21768	110776	40894	502603	122472	9212	7198	13761	21883	174526	328077

* Includes physical destruction and exchange in barter.

TABLE 55. Production receipts of commodities (Rs. per 1000 families) (C-IV)

STATE	Paddy	Wheat	Jowar	Bajri	Minor millets	Other cereals	Gram	Other pulses	Ground nut	Other oilseeds	Sugar-cane	Cotton
1. Punjab, etc.	37519	1064	10514	118716	4303	62295	930	17282	19163	6708	31335	358585
2. Rajasthan, Ajmer	642	5982	103305	218627	66	172394	9776	151334	-	49241	-	112230
3. Uttar Pradesh	167966	464	78032	60402	28274	34305	-	54902	34818	1276	127660	268
4. Bihar	1219789	3028	-	530	20636	53452	4431	29818	-	4884	19515	-
5. Orissa	532235	-	-	-	47260	-	19470	45065	-	11665	-	-
6. West Bengal	1196258	3115	-	-	-	-	22926	84879	-	10061	-	-
7. Assam, etc.	487170	369	-	-	-	-	-	17986	-	137950	-	-
8. Madhya Bharat, etc.	73412	288475	70539	3172	12857	23491	137236	45978	5550	124666	-	14882
9. Madhya Pradesh	993614	91938	194651	427	3616	110	30371	74921	26605	26934	17302	168326
10. Hyderabad	22052	13159	402328	7002	19173	9450	26495	62968	235510	24393	-	86034
11. N. Bombay, etc.	127149	35073	56376	239952	80798	3881	13119	63409	343000	30334	-	18395
12. Bombay Deecan	298117	1051	100091	57773	42008	4601	10905	14468	256173	1817	-	13089
13. Madras	263525	-	37580	42430	93114	13601	1714	18476	184808	4488	-	15574
14. Mysore, etc.	643719	477	27820	1617	310266	-	7969	70266	25210	49250	-	-
15. All-India	433876	30477	72053	58620	45779	28042	17509	51245	90871	26933	23480	54539
Agricultural families	677661	49205	139062	84471	67838	40633	28675	111416	156046	44566	33887	91746
Non-Agricultural families	106097	3068	10786	9082	9774	7937	1881	13732	17346	2887	2671	3769

TABLE 55. (Contd.) Production receipts of commodities (Rs. per 1000 families) (C-IV)

	STATE	Jute	Toba-cco	Tea, Cof-fee, etc.	Vege-tables & fruits	Chillies	Other spices	Fodder, etc.	Green grass	Hay	Other forest products	Milk	Eggs
1.	Punjab, etc.	625	-	192	7820	29063	1390	124997	6650	31634	14283	158406	641
2.	Rajasthan, Ajmer	-	1081	1723	23366	27533	6801	115912	70366	76847	16368	144395	124
3.	Uttar Pradesh	-	1049	-	42930	3206	-	65056	40386	4682	10240	59834	1208
4.	Bihar	497	45	-	12891	98	-	1019	68	3449	2757	47253	1520
5.	Orissa	8260	5513	-	958	-	-	3202	-	-	3095	3550	-
6.	West Bengal	-	4035	2329	44897	1997	7048	19662	-	214986	15925	24632	1591
7.	Assam, etc.	228434	739	-	122716	243751	2364	14773	-	-	15751	23009	15567
8.	Madhya Bharat, etc.	287	-	-	5054	932	1063	16656	110053	18216	11823	51026	269
9.	Madhya Pradesh	3981	81	179	8929	8970	45	35100	28295	66146	7252	12724	228
10.	Hyderabad	-	192694	-	141	27166	-	19164	-	-	9494	10351	1175
11.	N. Bombay, etc.	254	499	-	5324	16483	-	17109	30871	7084	15014	55314	635
12.	Bombay Deecan	-	-	-	10769	60734	3884	129932	62438	36391	65096	95522	4957
13.	Madras	3450	7123	-	23751	32978	-	17791	7418	22764	12429	15699	413
14.	Mysore, etc.	-	-	750	40367	12234	334883	121180	22070	105867	19078	22031	1453
15.	All-India	10283	9615	286	23540	25136	16861	47062	27171	36484	14104	61208	1584
	Agricultural families	13031	22459	545	36101	39201	28825	76818	41960	46788	21524	80991	1506
	Non-Agricultural families	5615	86	221	6459	7131	238	14989	10776	13876	12632	25667	1637

TABLE 55. (Concld.) Production receipts of commodities (Rs. per 1000 families) (C-IV)

STATE	Mutton and other meat	Farm-yard manure	Raw wool	Hides, skins, etc.	Fish & fishery prod-ucts	other live-stock produ-cts	Rice husked	Butter, ghee and cheese	Gur	Proce-ssed food-stuffs	Mine-rals & produ-cts of manu-facture	Total
1. Punjab, etc.	-	1867731	1240	-	-	15299	5538	38407	133849	2609	4624	1264368
2. Rajasthan, Ajmer	13065	98	50853	26	-	17325	845	82174	-	1148	4089	1480836
3. Uttar Pradesh	6677	17547	193	-	44	8656	16956	14557	50730	4844	6084	943246
4. Bihar	-	3822	-	68	1760	4597	-	6718	4454	128	12368	1459595
5. Orissa	-	145	-	-	-	-	-	-	1152	-	7284	688854
6. West Bengal	-	5586	-	-	9127	4152	517135	1652	61519	-	53868	2307380
7. Assam, etc.	-	2253	-	-	6131	-	37384	-	35703	240	52942	1445232
8. Madhya Bharat, etc.	580	16674	-	-	-	3017	21884	19172	4033	167	46384	1127548
9. Madhya Pradesh	4022	5379	-	-	821	2003	29961	6451	1194	1100	12305	1863981
10. Hyderabad	-	1369	-	-	-	-	20719	1245	-	-	153209	1342291
11. N. Bombay, etc.	-	10177	5586	-	-	2061	31112	9310	190	59	58708	1277276
12. Bombay Deecan	-	37585	249	342	1711	93	17148	1016	39292	-	4773	1372025
13. Madras	-	12424	192	36	89	337	2763	3659	2418	971	15474	857489
14. Mysore, etc.	-	7227	-	-	-	-	2523	695	10570	-	9617	1848148
15. All-India	2060	11009	3464	30	1084	4484	41132	13151	24648	1184	25927	1334926
Agricultural families	1361	17980	446	69	1767	5480	55493	16847	43381	790	2176	2080645
Non-Agricultural families	1472	3883	6535	6	1745	2347	2969	5878	3861	1643	10469	329165

TABLE 56. Commodity sales (Rs. per 1000 families)

	STATE	Paddy	Wheat	Jowar	Bajri	Minor millets	Other cereals	Gram	Other pulses	Ground nut	Other oilseeds	Sugar-cane	Cotton
1.	Punjab, etc.	32308	2806	706	10798	3042	7521	1176	14930	1010	3902	3138	64941
2.	Rajasthan, Ajmer	-	13609	22435	6814	-	3807	8761	6153	-	12083	-	100147
3.	Uttar Pradesh	56035	13221	18779	8419	1995	13417	1297	6531	14927	727	95496	-
4.	Bihar	84380	1271	-	-	1174	94	339	2058	-	282	16367	-
5.	Orissa	27006	-	-	-	-	-	1103	3211	-	2051	-	-
6.	West Bengal	174910	-	-	-	-	-	5342	2553	-	6392	-	-
7.	Assam, etc.	49951	-	-	-	-	-	-	43691	-	60144	-	-
8.	Madhya Bharat, etc.	114	9224	12450	-	-	1022	26000	21764	603	79219	-	4887
9.	Madhya Pradesh	133100	6203	29063	-	49	-	3413	13223	22470	8564	2588	77655
10.	Hyderabad	715	-	28102	-	-	-	17221	5334	29612	31475	-	44475
11.	N. Bombay, etc.	58412	-	12856	14439	7833	1198	10664	3969	319374	17439	-	40435
12.	Bombay Deecan	37671	-	246	-	-	-	-	32	48697	157	-	-
13.	Madras	29965	-	2101	2070	14772	3281	-	1238	112805	1333	-	11547
14.	Mysore, etc.	216516	-	31	-	7391	-	-	6172	40602	32992	-	-
15.	All-India	63679	4047	9862	3814	3564	3211	4639	7996	52175	14007	15419	24129
Agricultural families		104079	6937	17807	4970	2303	3473	8855	18355	84473	26318	22459	64705
Non-Agricultural families		12968	666	2909	1301	95	1358	381	6443	14808	1497	2122	2325

TABLE 56. (Contd.) Commodity sales (Rs. per 1000 families)

STATE	Jute	Toba-cco	Tea, Cof-fee, etc.	Vege-tables & fruits	Chillies	Other spices	Fodder, etc.	Green grass	Hay	Other forest products	Milk	Eggs
1. Punjab, etc.	266184	69	-	-	33158	791	4693	251	1887	428	9942	529
2. Rajasthan, Ajmer	-	-	-	6756	7542	5845	48226	16132	7548	1278	5032	-
3. Uttar Pradesh	-	1049	-	38519	2583	16	2406	544	648	786	11297	91
4. Bihar	-	-	414	7188	41	-	-	-	1264	3795	16077	-
5. Orissa	2273	-	-	1673	-	-	116	-	822	783	3318	-
6. West Bengal	33170	-	569	16263	1997	6757	5125	-	6249	2261	12851	27
7. Assam, etc.	225054	-	-	46405	175501	2364	5974	-	-	18	8559	5170
8. Madhya Bharat, etc.	-	-	-	4146	18	102	1219	-	3370	11865	1679	-
9. Madhya Pradesh	2275	-	-	7922	4465	-	914	28332	171	4038	1320	20
10. Hyderabad	-	136782	-	10289	848	-	-	-	-	6473	680	150
11. N. Bombay, etc.	203	-	212	7342	1413	-	-	165	186	605	12717	169
12. Bombay Deecan	-	-	-	3660	29271	759	5702	2348	7	1814	13969	1411
13. Madras	3450	7123	4074	18915	21169	-	10042	-	31	1038	9700	22
14. Mysore, etc.	-	-	-	11703	-	317289	914	-	-	516	4789	-
15. All-India	29621	6739	623	14486	14931	15708	5670	3672	1372	2392	8817	353
Agricultural families	15820	16034	120	23414	24594	26920	5747	718	1796	2260	12964	308
Non-Agricultural families	6241	-	127	2453	4501	174	650	9536	130	3026	6078	447

TABLE 56. (Concld.) Commodities sales (Rs. per 1000 families)

	STATE	Mutton and other meat	Farm-yard manure	Raw wool	Hides, skins, etc.	Fish & fishery prod-ucts	other live-stock produ-cts	Rice husked	Butter, ghee and cheese	Gur	Proce-ssed food-stuffs	Mine-rals & produ-cts of manu-facture	Total
1.	Punjab, etc.	1433	-	-	-	-	-	1331	9697	60531	-	5319	542521
2.	Rajasthan, Ajmer	341	-	102230	3727	-	249	216	33686	-	-	23353	435970
3.	Uttar Pradesh	3798	208	-	375	260	86	353	9159	50089	1904	11250	366265
4.	Bihar	-	-	-	-	2592	-	1885	3716	3619	560	5560	152676
5.	Orissa	-	-	-	-	-	-	2505	-	958	754	1993	48566
6.	West Bengal	-	271	-	-	12127	-	45892	1253	8194	-	20306	362509
7.	Assam, etc.	-	-	-	-	5466	-	19020	-	16877	120	46830	711144
8.	Madhya Bharat, etc.	585	-	-	-	-	-	-	14506	90	585	12438	205886
9.	Madhya Pradesh	-	260	-	422	860	33	3172	4400	366	1324	33394	390016
10.	Hyderabad	-	-	-	-	-	-	10262	97	-	-	11384	333751
11.	N. Bombay, etc.	-	605	6145	-	-	-	8260	12425	-	47	20287	557400
12.	Bombay Deecan	-	-	249	342	1536	-	-	2010	6464	-	1644	157989
13.	Madras	-	-	-	125	-	-	1016	790	2374	14	16976	275971
14.	Mysore, etc.	-	-	-	-	1406	-	1305	422	1594	344	6272	650258
15.	All-India	685	119	6237	333	1380	29	5265	6834	13405	533	15385	361131
Agricultural families		3	135	4173	89	1498	38	8381	8583	19241	186	5727	543483
Non-Agricultural families		1441	146	6757	1266	2966	79	1167	4974	3794	1317	18329	122472

TABLE 57. Particulars of annual receipts and disposals of commodities (Rs. per 1000 families) (C-IV, V)

		Produc-tion	Other receipts (C-IV)			Total receipts =100	Sales	Other disposals (C-V)				Total Dis-posals =100	Dis-posals Receipts (%)
			owner share	remu-neration and wages in kind	mate-rial contri-butions,etc.			owner share	remu-neration and wages in kind	raw mate-rial in produ-ction	mate-rial contri-butions,etc.		
A, 0	Paddy	89.28	4.21	4.68	1.83	486031	48.17	19.16	18.11	1.27	13.29	132196	27.20
1	Wheat	76.65	0.41	7.06	15.88	39763	27.41	-	18.39	46.18	8.02	18812	47.31
2	Jowar	81.92	5.33	10.26	2.49	87955	43.38	7.15	28.29	2.99	18.18	22733	25.85
3	Bajri	91.25	3.06	4.55	1.14	64240	37.04	23.02	24.87	3.71	11.36	10296	16.03
4	Minor millets	88.36	2.22	6.68	2.74	51808	38.98	7.53	35.22	2.13	16.14	9143	17.65
5-7	Other cereals	76.99	4.16	12.67	6.18	36421	22.63	8.37	34.80	21.14	13.06	14193	38.97
8	Gram	87.98	0.72	6.63	4.67	19895	34.50	0.07	9.83	49.23	6.37	13446	67.58
9, A	Other pulses	89.55	3.40	4.44	2.61	57223	60.32	3.78	19.33	10.88	5.69	13256	23.17
A	*Sub-Total*	*87.47*	*3.85*	*5.90*	*2.78*	*843336*	*43.07*	*13.97*	*21.24*	*8.78*	*12.94*	*234075*	*27.76*
1, 0	Groundnut	96.26	3.33	0.24	0.17	94405	93.02	1.56	1.01	2.44	1.97	56092	59.42
1-4	Other oilseeds	92.94	2.87	3.31	0.88	28978	84.73	1.95	3.36	4.11	5.85	16532	57.02
5	Sugarcane	95.35	1.10	0.13	3.42	24625	82.24	1.04	0.13	15.66	0.93	18750	76.14
6	Cotton	90.63	1.62	6.89	0.86	60178	94.32	2.91	1.81	-	0.96	25582	42.51
7	Jute	99.30	-	0.70	-	10356	87.15	4.67	-	-	8.18	33988	328.20
8	Tobacco	99.38	0.53	0.06	0.03	9675	98.32	0.40	-	0.61	0.67	6855	70.85
9, A	Tea, coffee, etc.	87.00	7.96	0.38	4.66	329	94.16	1.13	-	3.21	1.50	662	201.22
1	*Sub-total*	*94.51*	*3.29*	*1.56*	*0.64*	*228546*	*90.06*	*2.57*	*1.66*	*3.69*	*2.02*	*158461*	*69.33*
2, 0-5	Vegetables and fruits	94.17	1.53	1.77	2.53	24998	92.08	0.68	1.44	1.96	3.84	15732	62.93
6	Chillies	94.77	1.77	1.87	1.59	26522	91.02	0.99	3.92	0.39	3.68	16404	61.85
7	Other spices	98.58	0.46	0.03	0.93	17104	97.97	0.38	-	1.28	0.37	16034	93.74
8-A	Fodder, etc.	90.69	1.88	0.91	6.52	51894	35.00	3.40	1.28	55.29	5.03	16199	31.22
2-	*Sub-total*	*93.43*	*1.58*	*1.13*	*3.86*	*120518*	*78.91*	*1.31*	*1.53*	*15.20*	*3.05*	*64369*	*53.41*

* Inchides physical destruction and exchange in barter.

TABLE 57. (contd.) Particulars of annual receipts and disposals of commodities (Rs. per 1000 families) (C-IV, V)

		Produc-tion	Other receipts (C-IV)			Total receipts =100	Sales	Other disposals (C-V)				Total Dis-posals =100	Dis-posals Receipts (%)
			owner share	remu-neration and wages in kind	mate-rial contri-butions,etc.			owner share	remu-neration and wages in kind	raw mate-rial in produ-ction	mate-rial contri-butions,etc.		
3,0	Green grass	86.64	3.01	0.28	10.07	31359	42.47	0.39	1.35	54.82	0.97	8646	27.57
1,2	Hay	94.39	1.85	0.50	3.26	38653	30.25	14.63	1.48	39.83	13.71	4537	11.74
3-A	Other forest products	60.30	0.14	1.71	37.85	23390	82.98	-	-	6.38	10.64	2882	12.32
3-	*Sub-total*	*83.25*	*1.86*	*0.73*	*14.16*	*93402*	*46.29*	*3.86*	*1.20*	*44.13*	*4.52*	*16065*	*17.20*
5,0	Milk	97.26	1.49	0.15	1.10	62930	85.63	0.44	0.84	8.67	4.42	10297	16.36
1	Eggs	99.22	-	-	0.78	1597	99.59	-	-	0.41	-	354	22.17
2,3	Mutton & other meat	90.86	-	2.78	6.36	2268	64.60	-	-	-	35.40	1060	46.74
4	Faryard manure	95.51	1.60	0.28	2.61	11526	16.63	1.55	-	61.40	20.42	718	6.23
5	Raw wool	100.00	-	-	-	3464	100.00	-	-	-	-	6237	180.05
6,7	Hides, Skin, Furs, etc	34.44	-	7.28	58.28	88	61.65	-	10.09	-	28.26	539	612.50
8,9	Fish & fishery products	34.68	-	1.21	64.11	3126	96.06	-	-	-	3.94	1436	45.94
A	Other livestock products	84.99	2.07	-	12.94	5276	33.47	-	1.15	42.44	22.94	86	1.63
5-	Sub-total	94.07	1.72	0.24	3.97	90275	86.61	0.28	0.68	7.86	4.57	20727	22.96
6-	Mineral products	94.60	-	4.23	1.17	2398	68.20	-	0.97	1.69	29.14	1786	74.48
7,0	Rice (husked)	87.67	5.41	3.80	3.12	46915	23.35	21.74	3.07	12.43	39.41	22545	48.05
4	Butter, ghee & cheese	96.46	1.46	0.18	1.90	13635	94.10	-	0.93	2.11	2.86	7262	53.26
6	Gur	93.91	2.32	2.83	0.94	26246	89.18	2.75	3.62	0.10	4.35	15031	57.27
1-3,5, 7-A	Other processed food stuffs	51.98	1.08	18.05	28.89	2279	39.87	-	25.49	2.32	32.32	1332	58.45
7-	*Sub-total*	*89.94*	*3.71*	*3.39*	*2.96*	*89075*	*56.39*	*11.15*	*4.56*	*6.00*	*21.90*	*46170*	*51.83*
8-	Other processed material	89.73	-	0.55	9.72	920	88.68	5.94	0.38	0.17	4.83	4285	465.76
9,0	Products of manufacture	89.65	-	2.66	7.69	25470	70.62	-	1.79	2.98	24.61	14680	57.64
	All commodities	89.36	2.74	4.41	3.49	1493940	64.42	6.07	12.63	8.80	8.08	560618	37.53

* Inchides physical destruction and exchange in barter.

TABLE 58. Particulars of annual receipts and disposals of commodities, in agricultural families (C-IV, V)

	Production	Other receipts (C-IV)			Total receipts =100	Sales	Other disposals (C-V)				Total Disposals =100	Disposals Receipts (%)
		owner share	remuneration and wages in kind	material contributions,etc.			owner share	remuneration and wages in kind	raw material in production	material contributions,etc.		
A, 0 Paddy	93.52	3.82	1.24	1.42	724589	46.89	19.98	19.38	1.27	12.48	221981	30.64
1 Wheat	84.73	0.22	2.36	12.69	58071	24.41	-	20.18	47.45	7.96	28420	48.94
2 Jowar	89.42	5.07	3.79	1.72	155519	39.77	8.12	32.02	3.13	16.96	44778	28.79
3 Bajri	93.40	3.26	2.43	0.91	90437	30.57	24.74	28.06	4.10	12.53	16261	17.98
4 Minor millets	93.36	2.47	1.66	2.51	72666	19.13	10.77	48.89	2.86	18.35	12037	16.56
5-7 Other cereals	87.51	3.91	4.46	4.12	46431	18.87	6.89	39.34	22.80	12.10	18403	39.64
8 Gram	93.85	0.44	1.89	3.82	30555	42.89	0.08	8.24	43.29	5.50	20648	67.58
9, A Other pulses	93.96	2.55	1.54	1.95	118574	63.59	3.58	18.91	9.96	3.96	28863	24.34
A Sub-Total	*92.45*	*3.50*	*1.86*	*2.19*	*1296842*	*42.61*	*14.21*	*22.47*	*8.88*	*11.83*	*391391*	*30.18*
1, 0 Groundnut	91.68	7.91	0.20	0.21	170205	95.71	1.14	0.70	1.13	1.32	88261	51.86
1-4 Other oilseeds	95.35	1.75	2.38	0.52	46742	87.51	1.65	2.86	3.18	4.80	30076	64.35
5 Sugarcane	94.60	1.14	-	4.26	35823	75.70	1.49	0.18	22.28	0.35	29668	82.82
6 Cotton	93.18	1.10	5.67	0.05	98462	88.54	5.89	3.66	-	1.91	73078	74.22
7 Jute	99.51	-	0.49	-	13094	95.74	1.55	-	-	2.71	16523	126.19
8 Tobacco	99.39	0.56	0.05	-	22597	99.34	0.16	-	0.32	0.18	16141	71.43
9, A Tea, coffee, etc.	86.20	13.71	-	-	632	31.13	17.88	-	50.99	-	385	60.92
1 Sub-total	*93.48*	*4.12*	*1.83*	*0.57*	*387555*	*90.48*	*2.60*	*1.65*	*3.47*	*1.80*	*254132*	*65.57*
2, 0-5 Vegetables and fruits	96.47	1.42	0.67	1.44	37421	92.66	0.62	1.26	2.05	3.41	25269	67.53
6 Chillies	97.10	0.71	0.65	1.54	40373	92.29	0.40	3.53	0.40	3.38	26647	66.00
7 Other spices	99.26	0.64	-	0.10	29039	98.92	0.28	-	0.78	0.02	27213	93.71
8-A Fodder, etc.	92.15	1.25	0.48	6.12	83370	23.74	4.42	1.58	63.66	6.60	24212	29.04
2- Sub-total	*95.13*	*1.08*	*0.48*	*3.31*	*190203*	*78.07*	*1.37*	*1.59*	*15.72*	*3.25*	*103341*	*54.33*

* Inchides physical destruction and exchange in barter.

TABLE 58. (contd.) Particulars of annual receipts and disposals of commodities in agricultural families (C-IV, V)

		Produc-tion	Other receipts (C-IV)			Total receipts =100	Sales	Other disposals (C-V)				Total Dis-posals =100	Dis-posals Receipts (%)
			owner share	remu-neration and wages in kind	mate-rial contri-butions,etc.			owner share	remu-neration and wages in kind	raw mate-rial in produ-ction	mate-rial contri-butions,etc.		
3,0	Green grass	88.50	3.29	0.02	8.19	474412	6.41	0.68	2.37	89.29	1.25	11199	23.62
1,2	Hay	94.65	1.71	0.06	3.58	49432	26.57	16.92	0.57	40.75	15.19	6759	13.67
3-A	Other forest products	69.46	0.11	0.61	29.82	30986	95.89	-	-	2.16	1.95	2356	7.61
3-	*Sub-total*	*86.26*	*1.91*	*0.18*	*11.65*	*127830*	*23.50*	*6.01*	*1.49*	*63.03*	*5.97*	*20314*	*16.15*
5,0	Milk	97.85	1.26	0.01	0.88	82769	94.59	-	0.80	1.08	3.53	13706	16.56
1	Eggs	99.49	-	-	0.51	1513	96.03	-	-	3.97	-	321	21.21
2,3	Mutton & other meat	99.20	-	0.20	-	1271	100.00	-	-	-	-	3	0.20
4	Faryard manure	95.97	1.59	0.01	2.43	18734	9.64	-	-	67.46	22.90	1401	7.48
5	Raw wool	100.00	-	-	-	446	100.00	-	-	-	-	4170	936.00
6,7	Hides, Skin, Furs, etc	100.00	-	-	-	69	100.00	-	-	-	-	89	128.99
8,9	Fish & fishery products	67.38	-	0.29	32.33	2624	97.03	-	-	-	2.97	1544	58.83
A	Other livestock products	91.73	0.34	-	7.93	5974	26.32	-	1.75	50.88	21.05	145	2.43
5-	*Sub-total*	*96.56*	*1.20*	*0.02*	*2.22*	*113400*	*89.85*	-	*0.52*	*5.52*	*4.11*	*21379*	*18.85*
6-	Mineral products	100.00	-	-	-	1113	31.37	-	-	18.63	50.00	260	23.36
7,0	Rice (husked)	90.25	6.02	1.01	2.72	61484	31.42	18.97	2.49	11.43	35.69	26673	43.38
4	Butter, ghee & cheese	96.11	1.88	-	2.01	17529	96.81	-	0.57	1.09	1.53	8865	50.57
6	Gur	95.84	2.58	0.72	0.86	45264	88.73	2.58	3.63	0.13	4.93	21685	47.91
1-3,5, 7-A	Other processed food stuffs	63.92	0.82	10.93	24.33	1236	14.72	-	58.27	5.24	21.77	1263	102.27
7-	*Sub-total*	*92.90*	*4.15*	*0.86*	*2.09*	*125513*	*62.20*	*9.60*	*3.84*	*5.54*	*18.82*	*58486*	*46.60*
8-	Other processed material	100.00	-	-	-	726	98.56	-	0.32	-	1.12	5472	753.68
9,0	Products of manufacture	55.26	-	2.63	42.11	194	79.84	-	-	-	20.16	316	162.89
	All commodities	92.74	3.23	1.49	2.54	2243376	63.56	8.24	11.28	9.01	7.91	855091	38.12

* Inchides physical destruction and exchange in barter.

TABLE 59. Particulars of annual receipts and disposals of commodities, in non-agricultural families. (C-IV, V)

		Produc-tion	Other receipts (C-IV)			Total receipts =100	Sales	Other disposals (C-V)				Total Dis-posals =100	Dis-posals Receipts (%)
			owner share	remu-neration and wages in kind	mate-rial contri-butions,etc.			owner share	remu-neration and wages in kind	raw mate-rial in produ-ction	mate-rial contri-butions,etc.		
A, 0	Paddy	63.05	5.56	27.29	4.10	168270	40.28	18.23	11.63	1.73	28.13	32199	19.14
1	Wheat	29.09	1.68	41.70	27.53	10545	24.36	-	1.86	58.70	15.08	2735	25.93
2	Jowar	34.47	3.43	55.24	6.86	1288	46.24	0.76	4.54	3.38	45.08	6290	20.11
3	Bajri	54.60	7.36	32.57	5.47	16635	53.46	24.12	11.47	2.61	8.34	2433	14.63
4	Minor millets	50.25	2.10	41.71	5.94	19449	6.62	0.88	23.40	2.87	66.23	1437	7.39
5-7	Other cereals	40.59	4.35	42.13	12.93	19552	30.64	20.33	11.81	14.67	22.55	4432	22.67
8	Gram	38.96	2.95	49.15	8.94	4828	15.73	-	17.17	58.06	9.04	2420	50.13
9, A	Other pulses	61.13	7.58	25.35	5.94	22466	79.15	1.29	3.35	5.88	10.33	8140	36.23
A	*Sub-Total*	*55.40*	*5.10*	*33.25*	*6.25*	*293033*	*43.47*	*12.52*	*9.83*	*8.35*	*25.83*	*60086*	*20.50*
1, 0	Groundnut	85.91	5.66	5.51	2.92	20192	92.58	-	0.40	5.97	1.05	15995	79.21
1-4	Other oilseeds	66.67	16.12	11.94	5.27	4330	91.38	0.69	1.03	10.17	6.73	1840	42.49
5	Sugarcane	91.03	4.97	3.14	0.86	2934	81.99	-	-	-	18.01	2588	88.22
6	Cotton	70.05	7.49	2.71	19.75	5380	96.96	-	0.66	-	2.38	2398	44.58
7	Jute	98.61	-	1.39	-	5694	100.00	-	-	-		6240	109.58
8	Tobacco	81.82	-	9.09	9.09	105	-	-	-	-	75.00	51	48.57
9, A	Tea, coffee, etc.	71.43	-	2.04	26.53	311	45.45	-	-	-	54.55	279	89.71
1	*Sub-total*	*88.70*	*6.13*	*5.04*	*5.13*	*38946*	*92.27*	*0.09*	*0.33*	*3.89*	*3.42*	*29391*	*75.47*
2, 0-5	Vegetables and fruits	83.20	0.49	8030	8.01	7763	82.94	1.39	4.29	0.86	10.52	2958	38.09
6	Chillies	77.92	9.43	10.71	1.94	9152	88.30	4.98	3.80	-	2.92	5098	55.70
7	Other spices	28.96	-	1.93	69.11	822	50.46	-	-	18.35	31.19	346	42.08
8-A	Fodder, etc.	82.68	5.98	3.81	7.53	18129	17.87	0.58	0.87	83.39	0.29	4375	24.13
2-	*Sub-total*	*80.35*	*5.54*	*6.50*	*7.61*	*35866*	*60.89*	*2.51*	*2.81*	*29.25*	*4.54*	*12775*	*35.62*

* Inchides physical destruction and exchange in barter.

TABLE 59. (Contd.) Particulars of annual receipts and disposals of commodities, in non-agricultural families (C-IV, V)

		Produc-tion	Other receipts (C-IV)			Total receipts =100	Sales	Other disposals (C-V)				Total Dis-posals =100	Dis-posals Receipts (%)
			owner share	remu-neration and wages in kind	mate-rial contri-butions,etc.			owner share	remu-neration and wages in kind	raw mate-rial in produ-ction	mate-rial contri-butions,etc.		
3,0	Green grass	81.17	0.19	1.65	16.99	13276	88.51	-	-	10.75	0.74	10773	81.15
1,2	Hay	89.01	3.89	3.17	3.93	15586	13.99	-	13.65	64.51	7.85	929	5.96
3-A	Other forest products	58.51	.014	3.47	37.88	21593	91.55	-	-	2.50	5.95	3306	15.31
3-	*Sub-total*	*73.89*	*1.32*	*2.90*	*21.89*	*50455*	*84.57*	-	*0.85*	*12.26*	*2.32*	*15008*	*29.75*
5,0	Milk	95.75	1.85	0.78	1.62	26806	75.40	1.18	0.12	20.94	2.36	8061	30.07
1	Eggs	99.61	-	-	0.39	1643	100.00	-	-	-	-	447	27.21
2,3	Mutton & other meat	95.87	-	0.62	3.51	1535	94.00	-	-	-	6.00	1532	99.79
4	Faryard manure	84.76	4.37	2.49	8.38	4581	31.29	9.52	-	46.26	12.93	466	10.18
5	Raw wool	100.00	-	-	-	6535	100.00	-	-	-	-	6757	103.40
6,7	Hides, Skin, Furs, etc	4.35	-	10.87	84.78	146	61.10	-	10.57	-	28.33	2071	141.85
8,9	Fish & fishery prod-ucts	53.14	-	1.26	45.60	3283	98.42	-	-	-	1.58	3014	91.79
A	Other livestock products	75.51	5.92	-	18.57	3109	75.76	-	-	6.06	18.18	105	3.37
5-	*Sub-total*	*90.88*	*1.84*	*0.82*	*6.46*	*47638*	*85.43*	*0.62*	*1.02*	*8.51*	*4.42*	*22453*	*47.13*
6-	Mineral products	92.25	-	6.10	1.65	3274	66.42	-	1.22	0.23	31.93	4153	126.84
7,0	Rice (husked)	34.71	8.12	43.71	13.46	8556	55.42	22.59	6.93	0.90	14.16	2106	24.62
4	Butter, ghee & cheese	96.76	-	1.15	2.09	6075	98.93	-	-	0.50	0.57	5028	82.77
6	Gur	62.38	2.46	31.93	3.23	6189	86.35	5.78	5.63	-	2.24	4394	70.99
1-3,5, 7-A	Other processed food stuffs	36.69	1.41	24.58	37.32	4479	55.04	-	-	-	44.96	2392	53.40
7-	*Sub-total*	*56.73*	*3.60*	*27.22*	*12.45*	*25299*	*80.83*	*5.24*	*2.83*	*0.32*	*10.78*	*13920*	*55.02*
8-	Other processed material	75.80	-	1.40	22.80	1586	82.57	10.71	-	0.29	6.43	4441	280.00
9,0	Products of man-ufacture	96.00	-	1.46	2.54	6506	96.72	-	0.26	0.41	2.61	12299	189.03
	All commodities	65.49	4.33	22.04	8.14	502603	70.17	5.28	4.12	7.89	12.54	174526	34.72

* Inchides physical destruction and exchange in barter.

12. OPERATING ACCOUNT

12.1 In Table 60 we have brought together different items of current receipts and expenditure on business account. It should be noted that these include only the cash receipts and expenditure. It will be seen that in the all-India averages the total receipts amount to Rs. 438 per family and the total expenditure to about Rs. 335 per family. Thus the receipts show an excess of about Rs. 103 per family. This varies greatly in different states and in fact the receipts are short of the expenditure in Bihar, Madhya Bharat, Madras and the Bombay Deccan. In the Bombay Deccan, the total expenditure exceeds the receipts by about Rs. 129 per family. Partly this is on account of the very high payment of wages reported in this region. In the other states, the excess of expenditure over receipts is not large. In Rajasthan, Orissa and Hyderabad, though the receipts are more than the expenditure, the excess is not large. Only in the remaining states the excess of receipts over expenditure is considerable. It should perhaps be reminded that the data, though they are presented on an annual basis, do not in fact refer to the conditions of a whole year. This might partly explain the large variation seen between different states.

12.2 In subsequent tables are given further details of the receipts and expenditure of the operating account. In Table 61 are shown particulars of receipts and payment of rent on assets, namely, land, non-residential buildings, livestock, implements, machinery and other assets. In Table 62 are shown the income from and expenditure on professions and services. In Table 63 and 64 are shown particulars of raw material purchases for farm and non-farm production, respectively. It will be noted that the use of chemical fertilisers has been reported on a considerable scale only in the Bombay Deccan and Madras and to a smaller extent from Mysore and Madhya Pradesh. Considerable use of farm yard manure has been reported in Madras, Mysore and Rajasthan. In Table 65 the raw material purchases for farm and non-farm production have been distinguished according as the purchases were made from a producer or a trader. In Tables 66 and 67 similar classification of the purchases is made on an all-India basis but separately for the agricultural and the non-agricultural families and also for different groups of commodities. Thus it will appear from Table 66 that about 50 percent of the total purchases of food-grains and pulses; presumably for seed and cattle-feed, are from a trader. In respect of oilseeds, etc., this proportion is nearly 80 percent. Similarly about 30 percent of the fodder including green grass and hay and about 44 percent of farm yard manure is purchased from a trader. That this large proportion of the farm yard manure is traded through professional traders surprising.

TABLE 60.
Operating Account (Rs. per 1000 families)

STATE	Receipts					Expenditure						Total expen-diture
	By Sale of pro-duce (XI, 4,5)	By rent on assets (VII, 1-6, 12-2)	By income of profe-ssions & services (XI, 6-10)	Other (XI, 3, 15)	Total re-ceipts	Purchase of raw material (XII, 4,5)	Rent on assets VIII, 1-6, 12-2)	Purchase of ser-vices (XII, 6-10)	Wages paid (XII, 11, 12, 13)	Interest payments (VIII, 7-11)	Other (XII, 3, 15)	
1. Punjab, etc.	542521	1758	64856	17244	626379	354844	12802	15475	70736	12674	36386	502917
2. Rajasthan, Ajmer	435970	2293	69824	5321	512908	252346	23032	11499	141637	5242	48632	482388
3. Uttar Pradesh	366265	4618	45355	30800	447038	131421	18779	20229	87449	14536	32573	304987
4. Bihar	152676	3547	43939	21712	221874	45854	3325	63879	118144	835	41554	273591
5. Orissa	48566	358	43730	3434	96088	4653	-	12545	25071	14432	15505	72206
6. West Bengal	362509	2038	71141	45249	480937	55873	16460	24903	114724	1036	35411	248407
7. Assam, etc.	711144	1717	109762	44355	866978	27967	4552	114572	46257	-	51991	245339
8. Madhya Bharat, etc.	205886	-	12092	33187	251165	129051	3220	12415	116571	15491	20844	297592
9. Madhya Pradesh	390016	7203	57708	39841	494768	78703	24490	23640	84760	12594	31306	255493
10. Hyderabad	333751	16401	50472	5714	406338	86160	20109	23006	183554	5096	26751	344676
11. N. Bombay, etc.	557400	6064	57938	14816	641237	179081	15785	35221	188328	9563	29309	457287
12. Bombay Deccan	157989	4730	30006	10965	206590	107325	4401	4016	202958	6190	11072	335962
13. Madras	275971	3951	30777	21609	332308	103701	13734	27986	179872	6809	36751	368853
14. Mysore, etc.	650258	586	47422	22297	720563	99211	4445	22328	233318	11046	22555	392898
15. All-India	361131	4066	49532	23779	438508	123127	13003	28868	129079	8716	32502	335295
Agricultural families	543483	5528	32473	30962	612446	166082	17415	33976	207458	9971	46260	481162
Non-agricultural families	122472	2757	84618	19107	228954	58380	3924	19335	29426	4869	19313	135247

TABLE 61.
Rent on assets (Rs. per 1000 families) (C-VII, VIII)

STATE	Receipts						Expenditure					
	Land	Non-residen-tial build-ings	Live-stock	Implement s & machinery	Other assets	Total receipts	Land	Non-residen-tial build-ings	Live-stock	Implement s & machinery	Other assets	Total expen-diture
1. Punjab, etc.	1662	96	-	-	-	1758	12759	-	43	-	-	12802
2. Rajasthan, Ajmer	1946	347	-	-	-	2293	23032	-	-	-		23032
3. Uttar Pradesh	3115	-	138	870	495	4618	17261	78	664	776	-	18779
4. Bihar	3269	-	-	-	278	3547	1798	286	-	1241	-	3325
5. Orissa	-	-	-	-	358	358	-	-	-			-
6. West Bengal	2038	-	-	-	-	2038	13129	1564	-	1767	-	16460
7. Assam, etc.	1348	-	369	-	-	1717	111	-	4441	-	-	4552
8. Madhya Bharat, etc.	-	-	-	-	-	-	3220	-	-	-		3220
9. Madhya Pradesh	3839	333	-	3031	-	7203	10534	98	366	49	13443	24490
10. Hyderabad	14060	592	1749	-	-	16401	20109	-	-	-		20109
11. N. Bombay, etc.	3834	732	800	698	-	6064	8066	889	4604	2103	123	15785
12. Bombay Deccan	143	-	-	4519	68	4730	3150	-	1158	93	-	4401
13. Madras	3951	-	-	-	-	3951	1803	-	11931	-	-	13734
14. Mysore, etc.	156	430	-	-	-	586	1398	-	-	-	3047	4445
15. All-India	2929	163	175	686	113	4066	8593	208	2326	515	1361	13003
Agricultural families	4276	234	160	698	160	5528	14597	135	790	576	1317	17415
Non-agricultural families	2030	174	222	292	39	2757	2690	282	679	273	-	3924

TABLE 62.
Income from and expenditure on professions and services (Rs. per 1000 families) (C-XI, XII)

STATE	Income from professions and services						Purchases of services					
	Mainte-nance and repairs	Transport	Storage and inci-dental services	Sales commi-ssion	Other profe-ssions and services	Total Rs.	Mainte-nance and repairs	Transport	Storage and incidental services	Sales commi-ssion	Other profe-ssions and services	Total Rs.
1. Punjab, etc.	465	15753	48	380	48210	64856	11915	690	118	556	2196	15475
2. Rajasthan, Ajmer	4882	2149	-	4809	57484	69324	8013	498	806	1107	1075	11499
3. Uttar Pradesh	2018	7734	1128	2719	31756	45355	11432	2779	1409	693	3916	20229
4. Bihar	1557	4243	553	1791	35795	43939	5898	41	94	214	57632	63879
5. Orissa	1818	12478	-	465	28969	43730	5803	-	929	-	5813	12545
6. West Bengal	8328	7874	6297	5098	43544	71141	11145	1442	169	-	12147	24903
7. Assam, etc.	7506	17764	2484	1154	80854	109762	10433	5097	3629	-	95413	114572
8. Madhya Bharat, etc.	842	747	-	645	9858	12092	2736	-	830	741	8108	12415
9. Madhya Pradesh	2637	5992	1771	11952	35356	57708	6484	4725	5801	1499	5131	23640
10. Hyderabad	2508	4566	565	14095	28738	50472	21496	-	892	618	-	23006
11. N. Bombay, etc.	3369	2624	241	9830	41874	57938	32809	1308	-	13	1091	35221
12. Bombay Deccan	167	1212	22	360	28245	30006	1511	1800	299	-	406	4016
13. Madras	687	3979	42	4697	21372	30777	10930	1439	7793	1183	6641	27986
14. Mysore, etc.	2188	1648	-	7719	35867	47422	10273	7805	657	609	2984	22328
15. All-India	2436	5949	862	4726	35559	49532	11126	1930	2124	608	13080	28868
Agricultural families	448	6662	802	2803	21758	32473	16327	2390	802	706	13751	33976
Non-agricultural families	6126	5583	654	7426	64829	84618	5199	1063	2481	907	9685	19335

TABLE 63.

Purchases of raw materials for farm, forest and livestock production (Rs. per 1000 families) (C-IX)

State	Food-grains and pulses A	Oil-Seeds fibres, etc. 1	Fodder 28,29	Fruits and vegetables Other 2	Green grass and hay 30,31	Other forest products	Farm-yard manure	Other live-stock products Other 5	Salt 68	Chemical ferti-lisers 00	Other commo-dities	Total
1. Punjab, etc.	131529	62584	64594	22146	45436	1101	577	-	1636	-	5355	335558
2. Rajasthan, Ajmer	130478	23530	6756	18235	14763	1009	15188	288	681	-	19808	230736
3. Uttar Pradesh	52954	4867	16326	24068	10378	263	6281	219	2094	-	2002	119452
4. Bihar	16788	184	1704	13339	214	173	8701	-	854	-	86	42043
5. Orissa	532	-	232	-	1876	-	717	-	-	-	106	3463
6. West Bengal	5864	1307	1456	22499	7678	501	948	61	115	-	2586	43015
7. Assam, etc.	11486	3269	332	2696	-	-	-	-	-	-	849	18632
8. Madhya Bharat, etc.	11536	55011	5018	13407	30218	1219	-	-	4194	-	3800	124403
9. Madhya Pradesh	15332	19350	15194	3478	8072	-	4785	-	755	293	853	68112
10. Hyderabad	23121	5140	22529	6173	2120	-	795	-	786	-	361	61025
11. N. Bombay, etc.	9649	38615	43240	25797	33021	-	6576	-	127	-	6335	163360
12. Bombay Deccan	18264	3435	6439	58030	4180	-	1329	217	-	6365	1707	99966
13. Madras	20045	3222	12905	21695	7332	-	22527	551	1158	6169	1491	97095
14. Mysore, etc.	22141	101	17578	18109	4727	1922	20914	-	5250	563	3000	94305
15. All-India	34560	15730	16517	18791	12789	376	7718	133	1297	1188	3269	112368
Agricultural families	47274	22408	21527	29457	16765	723	10751	176	1371	1842	4336	156630
Non-agricultural families	7515	5479	6556	3626	7566	406	1450	-	178	72	472	33220

TABLE 64.
Raw material purchases for non-farm production (Re. per 1000 families) (C-X)

State	Food-grains and pulses	Oil-Seeds fibres, etc.	Fruits vegetables etc.	Forest products	Live-stock products	Non metalic minerals	Processed food-stuffs	Processed fibres, wood, etc.	Textiles, leather products etc.	Chemicals basic met-als, etc.	Total
	A	1	2	3	5	6	7	8	9	0	Rs.
1. Punjab, etc.	412	10488	684	1074	2085	-	540	2886	-	1117	19286
2. Rajasthan, Ajmer	26	-	-	2523	12810	1389	85	3669	72	1036	21610
3. Uttar Pradesh	896	2732	52	1013	3412	508	1776	464	-	1116	11969
4. Bihar	75	715	-	745	-	2159	-	23	-	94	3811
5. Orissa	871	-	-	242	-	-	-	-	-	77	1190
6. West Bengal	6405	1740	1598	576	379	467	1192	298	-	203	12858
7. Assam, etc.	-	37	-	5540	-	-	-	3019	-	739	9335
8. Madhya Bharat, etc.	155	-	-	143	1721	-	30	556	1971	72	4648
9. Madhya Pradesh	479	1215	288	566	3400	24	-	4497	-	122	10591
10. Hyderabad	97	-	-	18	3038	97	-	4239	16603	1043	25135
11. N. Bombay, etc.	1041	423	2200	597	6191	1088	2311	1248	279	343	15721
12. Bombay Deccan	7	135	-	620	428	96	253	1772	-	4048	7359
13. Madras	125	874	-	231	904	251	598	1208	-	2415	6606
14. Mysore, etc.	312	258	133	1289	-	531	-	1117	938	328	4906
15. All-India	718	1543	362	901	2565	546	647	1628	879	970	10759
Agricultural families	487	425	283	336	423	110	533	239	165	833	3834
Non-agricultural families	1006	3372	333	1463	8631	1237	914	4045	57	1954	23012

TABLE 65.

Raw material purchases (Rs. per 1000 families), classified according to whether they were made from a trader (C-IX, X)

	State	Raw materials for farm, forest and livestock production						Raw materials for non-farm production					
		Proportion of purchases from		Total	Proportion of purchases from		Total =100 Rs.	Proportion of purchases from		Total	Proportion of purchases from		Total =100 Rs.
		Producer	Trader		Producer	Trader		Producer	Trader		Producer	Trader	
1.	Punjab, etc.	29.36	70.64	100.00	39.06	60.94	335558	7.83	92.17	100.00	57.71	42.29	19286
2.	Rajasthan, Ajmer	40.80	59.20	100.00	44.65	55.35	230736	42.42	57.58	100.00	51.61	48.39	21610
3.	Uttar Pradesh	46.37	53.63	100.00	53.22	46.78	119452	39.51	60.49	100.00	47.53	52.47	11969
4.	Bihar	25.19	74.81	100.00	17.53	82.47	42043	43.10	56.90	100.00	23.68	76.32	3811
5.	Orissa	85.71	14.29	100.00	92.74	7.26	3463	36.36	63.64	100.00	63.41	36.59	1190
6.	West Bengal	42.66	57.34	100.00	39.34	60.66	43015	18.60	81.40	100.00	11.01	88.99	12858
7.	Assam, etc.	86.34	13.66	100.00	83.60	16.40	18632	12.50	87.50	100.00	10.19	89.81	9335
8.	Madhya Bharat, etc.	39.66	60.34	100.00	48.05	51.95	124403	16.67	83.33	100.00	4.37	95.63	4648
9.	Madhya Pradesh	34.37	65.63	100.00	43.52	56.48	68112	16.28	83.72	100.00	13.99	86.01	10591
10.	Hyderabad	31.62	68.38	100.00	47.16	52.84	61025	19.61	80.39	100.00	4.13	95.87	25135
11.	N. Bombay, etc.	21.13	78.87	100.00	19.35	80.65	163360	19.28	80.72	100.00	9.08	90.92	15721
12.	Bombay Deccan	44.54	55.46	100.00	26.31	73.69	99966	25.38	74.62	100.00	9.50	90.50	7359
13.	Madras	30.47	69.53	100.00	23.38	76.62	97095	8.40	91.60	100.00	14.56	85.44	6606
14.	Mysore, etc.	39.73	60.27	100.00	48.77	51.23	94305	15.58	84.42	100.00	16.56	83.44	4906
15.	All-India	28.51	71.49	100.00	37.55	62.45	112368	21.69	78.31	100.00	24.62	75.38	10759
	Agricultural families	34.45	65.55	100.00	36.25	63.75	156630	31.08	68.92	100.00	20.47	79.53	3834
	Non-agricultural families	39.61	60.39	100.00	42.48	57.52	33220	18.65	81.35	100.00	33.88	66.12	23012

TABLE 66.

Raw material purchases for farm, forest and livestock production (Rs. per 1000 families) (C-IX)

Commodity		Agricultural families						Non-Agricultural families					
		Proportion of purchases from		Total	Proportion value of purchases from		Total =100 Rs.	Proportion of purchases from		Total	Proportion value of purchases from		Total =100 Rs.
		Producer	Trader		Producer	Trader		Producer	Trader		Producer	Trader	
A	Food-grains & pulses	43.02	56.98	100.00	39.41	60.59	47274	44.19	55.81	100.00	49.39	50.61	7515
1	Oilseeds, fibres etc.	21.45	78.55	100.00	19.21	80.79	22408	19.10	80.90	100.00	12.33	87.67	5479
28,29	Fodder	58.55	41.45	100.00	64.47	35.53	21527	48.21	51.79	100.00	37.84	62.16	6456
Other 2	Fruits & Vegetables	18.03	81.97	100.00	11.24	88.76	29457	17.69	82.31	100.00	6.82	93.18	3626
30,31	Green grass & hay	65.03	34.97	100.00	61.84	38.14	16765	72.80	27.20	100.00	83.31	16.69	7566
Other 3	Other forest products	37.50	62.50	100.00	16.20	83.80	723	8.34	91.66	100.00	11.72	88.28	406
54	Farmyard manure	27.64	72.36	100.00	43.70	56.30	10751	40.00	60.00	100.00	24.95	76.05	1450
Other 5	Other livestock products	33.33	66.67	100.00	15.94	84.06	176	-	-	100.00	-	-	-
68	Salt	2.71	97.29	100.00	3.53	96.47	1371	10.00	90.00	100.00	8.93	91.07	178
00	Chemical fertilisers	3.70	96.30	100.00	4.56	95.44	1842	-	100.00	100.00	-	100.00	72
Others 6,7,8,9,0	Other commodities	39.39	60.61	100.00	30.08	69.92	4336	56.00	44.00	100.00	64.43	35.57	472
	All commodities	34.45	65.55	100.00	36.25	55.15	156630	39.61	60.39	100.00	42.47	57.53	33220

TABLE 67.

Raw material purchases for non-farm production (Rs. per 1000 families) (C-X)

	Commodity	Agricultural families						Non-Agricultural families					
		Proportion of purchases from		Total	Proportion of purchases from		Total =100 Rs.	Proportion of purchases from		Total	Proportion value of purchases from		Total =100 Rs.
		Producer	Trader		Producer	Trader		Producer	Trader		Producer	Trader	
A	Food-grains & pulses	58.82	41.18	100.00	30.89	69.11	487	40.00	60.00	100.00	22.08	77.92	1006
1	Oilseeds, fibres etc.	40.00	60.00	100.00	61.68	38.32	425	36.00	64.00	100.00	84.10	15.90	3372
2	Fruits & Vegetables	-	100.00	100.00	-	100.00	283	-	100.00	100.00	-	100.00	333
3	Forest products	75.00	25.00	100.00	72.73	27.27	336	32.43	67.57	100.00	31.45	68.55	1463
5	Livestock products	83.33	16.67	100.00	39.76	60.24	423	38.47	61.53	100.00	44.29	55.71	8631
6	Non-metalic minerals	33.33	66.67	100.00	37.21	62.79	110	19.24	80.76	100.00	6.67	93.33	1237
7	Processed foodstuffs	-	100.00	100.00	-	100.00	533	-	100.00	100.00	-	100.00	914
8	Processed fibres, wood, etc.	28.57	71.43	100.00	30.85	69.15	239	1.82	98.18	100.00	7.84	92.16	4045
9	Textiles, leather products, etc.	-	100.00	100.00	-	100.00	165	100.00	-	100.00	100.00	-	57
0	Chemicals, basic metals, etc.	7.14	92.86	100.00	1.53	98.47	833	87.80	12.20	100.00	89.77	10.23	1954
	All commodities	31.08	68.92	100.00	20.47	79.53	3834	18.65	81.35	100.00	33.88	66.12	23012

13. REVENUE ACCOUNT

13.1 In Table 68 we have brought together all cash items of personal income and expenditure in the form of a Revenue Account. On the receipts side are, firstly, salaries and wages earned by members of the households; these include net earnings brought home by members working outside the residential village. Remittances received from outside as also receipts of pensions, etc., have been shown separately. Other items of receipt are interest and house rent. It is usual to credit these items to revenue account and not to the operating account. Finally, the operating surplus, that is the surplus on the Operating Account is regarded as net receipt to households from their business enterprises and is accordingly credited to the revenue account. It will be remembered that in a number of states, the operating surplus is negative; this is shown on the receipts side with a negative sign. It will be noted that in the all-India average the total revenue receipts amount to Rs. 300 per family.

13.2 The principal item on the expenditure side is the family expenditure. This is split into two parts. In one column is shown the weekly expenditure on a number of routine items of family expenditure noted in C-XIII, here brounght to an annual basis. In another column is shown the four-weekly expenditure on the remaining items of family expenditure noted in C-XIV, here brought to an annual basis. House rent and remittances made out have been shown separately. It will be noted that in the all-India average the total revenue expenditure amounts to Rs. 789 per family.

13.3 It will thus be seen that the reported receipts form less than 40 percent of the reported expenditure. The gap between the expenditure and receipts of agricultural families is larger still; in their case the receipts are less than 25 percent of the expenditure. Part of this gap might be explained by the fact that at best the data relate to average conditions between October and March and that possibly substantial cash receipts, of sales proceeds accrue only after March. Nevertheless it seems unlikely that this circumstance could explain the whole of the rather large gap between reported, cash expenditure and cash receipts.

13.4 Further particulars of family expenditure noted in C-XIII and C-XIV, are given in Tables 69 and 70, respectively. It should be noted that the reported expenditure includes only the purchases of goods and services and does not coves the consumption of home-produced or otherwise acquired commodities.

13.5 As will be seen, there are large variations in the reported expenditure on individual items. The State averages are all affected by large sampling variations so that at least part of the differences between different states are attributable to sampling errors. Nevertheless, there are some remarkable differences which might be noted. The reported expenditure on mutton is very high in the south, namely, in Hyderabad, Madras and Mysore-Travancore. The, expenditure on fish is naturally large in West Bengal and Assam; but it is also considerable in Mysore and to a smaller extent also in Bihar. Dry fish is consumed on a considerable scale only in the Bombay Deccan though it is also common in Assam, Madras and Mysore. The per family expenditure on milk is nearly Rs. 10 in all-India averages. It is very large in Punjab and to a smaller extent also in West Bengal, Saurashtra and North Bombay. Expenditure on milk products is also very high in Punjab, Rajasthan and to a smaller extent in Madhya Bharat, Saurashtra and North Bombay. The expenditure on sugar and gur is very high in Saurashtra and Bombay. It is also considerable in Punjab and Rajasthan. Tea is common in Saurashtra and North Bombay and also in Punjab, Assam and the Bombay Deccan. Coffee is common in Madras and to a much greater extent in Mysore and Travancore. Chewing of tobacco is wide spread in Assam and Mysore-Travancore while smoking is more common in Rajasthan, Saurashtra and North Bombay. Very large expenditure is reported on clothing and footwear in Rajasthan. It would be worth-while obtaining independent verification of these large differences in different states.

13.6 The sum of the expenditure reported on the two groups of items noted in C-XIII and C-XIV, respectively, gives the total family expenditure. In Table 71, we show the distribution of this total over different groups of items. As will be seen from the last column of this table, the total per family expenditure in rural India is about Rs. 778. There is however large variation between different states. The level of expenditure is very high in Punjab, Rajasthan, West Bengal and Hyderabad where the total expenditure is more than Rs. 900. It is very low in Orissa, Madhya Pradesh and the Bombay Deccan. In the two latter, the total expenditure is nearly Rs. 620. In Orissa, it is only Rs. 473. This is too low and would need independent verification.

13.7 As in the level of total expenditure, so in the distribution of this total, there are apparent considerable differences between different states. Thus it will be seen that in the all-India average, nearly 25 percent of the total expenditure is on cereals, 5 percent on pulses, 6 percent on edible oil, 10 percent on meat, milk and vegetables, 5 percent on spices, 5 percent on sugars, 7.5 percent on tea, coffee, pan, tobacco, liquors and other intoxicants, 3 percent on fuel and light, 17.5 percent on clothing and footwear and about 15 percent on education, medicine, entertainments, travelling and other miscellaneous items. There is large variation in these respects in different states. For instance, in Saurashtra and Bombay, the proportionate expenditure on cereals is very low while the expenditure on edible oils and sugars is quite large. Again, proportionate expenditure on clothing and footwear is very high in Rajasthan and Punjab

13.8 In Tables 69, 70 and 71, in two bottom lines, similar data are given separately for the agricultural and the non-agricultural families. As will be seen, the average per family annual expenditure of the agricultural families is Rs. 921 against a mere Rs. 590 of the non-agricultural families. This large difference between the levels at which the two groups of families live persists in almost every single item of expenditure. It is remarkable that even in respect of such essentials as foodgrains and pulses, where the agricultural families have presumably considerable amounts of home produced commodities available for consumption, the purchases by the non-agricultural families do not exceed those by the agricultural families. On all items which might be called non-essentials, such as the edible oils, meat, sugar, gur, tea, tobacco, liquors, the expenditure by the non-agricultural families is only about one half of the expenditure by the agricultural families. In respect of clothing, footwear, books, periodicals, medicine, domestic service, entertainments and travel, it is much less than half the expenditure by the agricultural families. It is thus obvious that the non-agricultural families live at a very low level than do the agricultural families. An examination of the distribution of their respective expenditure shows that the non-agricultural families spend proportionately more on food and other essentials and less on clothing and other comforts.

13.9. The group of families termed ‘non-agricultural’ is naturally very heterogeneous. It might be worthwhile therefore classifying them into different occupational classes and compare their levels of living. This is done in Table 72. It will be seen that a large group living at a very low level is that of the cultivating labourers. Their total family expenditure averages at Rs. 362. This is to be compared with the general average of the non-agricultural families of Rs. 590 and the average expenditure of the agricultural families amounting to Rs. 921. About 20 percent of the total expenditure by the agricultural families is spent on foodgrains; this is nearly Ps. 130. Thus, the expenditure of the cultivating labourers even on food-grains is very much below that of the agricultural families. In interpreting these figures, it should however be borne in mind that the averages are on a per family basis and that it is possible that the average size of the cultivating labourers' families might be somewhat below that of the agricultural families.

13.10 The purchases reported in C-XIII and C-XIV, could be distinguished according as they were, made from a trader or a non-trader. This is done in Table 73. It will be seen that considering all-India average, nearly 76 percent of the purchases in C-XIII and nearly 93 percent of the purchases in C-XIV were made from a trader. There is of course considerable variation in this respect between different states. For instance, of the purchases in C-XIII, only about 40 percent in Madhya Pradesh and 52 percent in Uttar Pradesh were made from a trader. In respect of the purchases in C-XIV, the variation is not so large.

13.11 In Tables 74 and 75, we give similar particulars regarding purchases in C-XIII and C-XIV, respectively, on an all-India basis but for each commodity and for the agricultural and the non-agricultural families separately. Thus it will be noted that the trader element is somewhat smaller in the purchases of foodgrains that in those of pulses. It is also very low in respect of milk and milk-products where only about one-third of the purchases are from a trader. In respect of most other items the trader element is naturally large.

13.12 As was noted in Section 1.14, we have generally omitted from the present Report all data relating to 'entries', that is the number of families reporting particular items of information. This was because the data on number of families reporting an item during a week or a four-week period could not obviously be inflated to be brought to an annual basis. Nevertheless, it might have been noted that wherever the data could be presented without such inflation to annual basis, they have been presented. Such was the case of purchases and sales, for instance, where we gave a classification of the reported purchases or sales according to whether a trader was involved. With reference to the items of family expenditure during one week or four weeks noted in C-XIII and C-XIV, respectively, it appears that the number of families reporting various items of expenditure during the, specified periods, might be of some interest. We have therefore presented the relevant data in Tables 76 and 77.

13.13 It will be seen that considering all-India average, nearly 28 percent of all families report expenditure on rice during a week. In West Bengal, Assam, Madras and Mysore, this proportion is upwards 40 percent. Similarly, the proportion of families reporting expenditure on wheat, millets and other, cereals in all-India averages is nearly 13, 15 and 10 percent, respectively. Among the reporting families there would be of course some who had incurred expenditure on more than one foodgrains, say both on wheat and rice. The total of the percentages reporting expenditure on rice, wheat, millet and other cereals severally, amounting to nearly 66 percent, would not therefore give the percentage of families reporting expenditure on at least some foodgrain. Nevertheless, as a rough guess, it seems that this proportion would not be much less than 50 percent which would mean that every week about half of the families incur expenditure on foodgrains. This of course relates to average conditions from October to March. It is possible that the frequency of foodgrain purchases is somewhat higher in the period from say April to June or July. On the other hand, it might be noted that during the period of investigation most of the foodgrains were rationed, though the degree of rationing in rural areas varied considerably in different parts of the country. Nevertheless, it is possible that, the frequency of foodgrain purchases would be somewhat smaller under decontrol.

13.14 The high frequency of purchases of edible oils is noteworthy. Mustard, groundnut, coconut, linseed and other edible oils have been separately noted. One, might also presume that they are approximately mutually exclusive in the sense that a family would be usually using, or at any rate would be purchasing within a week, only one type of edible oil. It would then appear that every week nearly 70 per cent of the families purchase edible oils. It might be noted that though the coconut oil has been classified here is an edible oil and that a separate item for hair oils has been specified in C-XIV, nevertheless, it is possible that some of the purchases of coconut oils in C-XIII were really for toilet purposes.

13.15 Similarly, if mutton, fresh fish and dry fish are regarded as mutually exclusive items for family expenditure within a week, it appears that every week nearly 33 percent of the families incur expenditure on these items. The proportion of families reporting expenditure on vegetables is also somewhat unexpectedly large, being over 50 percent. At the same time, every week, nearly 75 percent of the families report expenditure on salt.

13.16 The very high frequency with which these necessities of life are purchased gives, an indication of the hand to mouth living of the rural population. For the same reason, the proportion of families reporting expenditure on tea, tobacco, and liquor might be regarded broadly as an index of their incidence in rural area. Thus it will be seen that nearly 25 percent of the families drink tea. The proportion is very high in Punjab and Bombay, being 50 and 60 percent, respectively. Nearly one-third of the families chew pan and tobacco. The two probably go hand in hand in most of the states, though there are exceptions, as in Bihar, where a high incidence of tobacco chewing is reported without any corresponding incidence of pan. This would need independent verification for it is possible that the investigators in that state did not note the two expenditures separately. Incidence of tobacco smoking is higher, nearly 47 percent. It is very high in West Bengal and also in Hyderabad and North Bombay. Nearly 5 percent of the families report expenditure on liquors and another 3 percent on other intoxicants. These proportions are negligible in Bombay and Madras, of course on account of the prohibition in force in these states. The incidence of liquor is exceptionally high in Hyderabad and also considerable in Rajasthan and Assam.

13.17 In Tables 78 and 79, we give further particulars of the reported expenditure on different items of family expenditure. In Table 78 we give the frequency distribution of the reported weekly expenditure on different items in C-XIII. The distributions are given separately for the reported purchases by the agricultural and the non-agricultural families. For facility of reading they are given on a cumulative basis. The number of reported purchases and their value are distinguished and the two are shown in parallel columns. It will be noted that altogether 44 different items of family expenditure were noted in C-XIII. For convenience of presentation, here some of the items have been suitably combined, as for instance, are millets and other cereals which are two separate items in C-XIII. As a consequence, it should be noted that the distributions given in such cases are of purchases of these items severally and not jointly. Thus if a family reported during a week, purchase of millets as also of other cereals, it would constitute two purchases and not one. As weekly expenditure on enumerated items would in most cases comprise single purchases, the distributions given will be found useful in assessing quanta of single purchases of various items in rural area.

13.18 Thus, considering the agricultural families, nearly 48 percent of the weekly purchases of rice reported by them are of value under Rs. 3. In terms of value, they account for nearly 11.8 percent of the total purchases. On the other hand, nearly 56 percent of the purchases reported by the non-agricultural families were of value under Rs. 3 and in terms of value they accounted for nearly 19.7 percent of the total purchases. The weekly rice purchases of the non-agricultural families are thus considerably smaller, than those of the agricultural families. This seems to hold good in respect of the purchases of all most all items.

13.19 In fact the differences between the agricultural and the non-agricultural families become more obvious as we pass from foodgrains to other commodities. Thus, even in respect of pulses, while only about 12 percent of the purchases by the agricultural families were of value under four annas, nearly 20 percent of the purchases of pulses by the non-agricultural families were so small. Similarly, while 25 percent of the purchases of edible oil by the agricultural families were of value below four annas, more than 38 percent of purchases of edible oil by the non-agricultural families were so small. Similar differences are observable in respect of the purchases of other items.

13.20 Similar frequency distributions of the four-weekly expenditure on different items in C-XIV are given in Table 79. Here it is possible that the four weekly expenditures on some of the items comprise more than one purchases during the period. This might be the case for instance in respect of expenditure on firewood, kerosene, charcoal and other fuel and light. In such cases as these, the distributions shown are primarily distributions of four weekly expenditure and not of single purchases. In most other cases, such as of expenditure on clothing, footwear, domestic service, entertainment and travel, four-weekly expenditure would usually constitute single purchases or single occassions of expenditure. Therefore, the distributions given in these cases, apart from their being distributions of four-weekly expenditures, will have special significance.

TABLE 68.
Revenue Account per 1000 families

STATE	Receipts (Rs.)							Expenditure (Rs.)				
	Salaries & wages (XI, 11, 12)	Interest receipts (VII, 7-11)	House-rent (VII, 2)	Pensions, etc. (XI, 13)	Remi-ttances (XI, 14)	Opera ting sur-plus	Total	Family expendi-ture (C-XIII)	Family expendi-ture (C-XIV)	House-rent (VIII, 2)	Remi-ttances (XII, 14)	Total
1. Punjab, etc.	179739	3586	144	1668	13770	123462	322369	606130	388320	16	4228	998694
2. Rajasthan, Ajmer	72221	22127	688	2044	1206	30520	128806	591600	341080	393	2968	936041
3. Uttar Pradesh	115501	10547	68	2966	9693	142051	280826	490180	295500	299	11261	797240
4. Bihar	202762	33061	-	813	5605	-51717	190524	487020	279890	1531	7550	775991
5. Orissa	122252	5552	-	493	21570	23882	173749	232200	240890	-	7361	480451
6. West Bengal	206035	22452	-	-	21870	232530	482887	575200	338090	6094	9046	928430
7. Assam, etc.	300931	923	739	2216	194	621639	926642	435440	276890	-	6500	718830
8. Madhya Bharat, etc.	91072	2784	-	1715	1320	-46427	50464	468050	269820	-	7653	745523
9. Madhya Pradesh	159339	9149	-	122	24054	239275	431939	397900	224570	329	10225	633024
10. Hyderabad	160168	12320	3541	-	954	61662	238645	649090	283610	283	16241	949224
11. N. Bombay, etc.	148481	3715	1130	749	20723	183950	358748	520680	281340	664	4689	807373
12. Bombay Deccan	163865	7113	11	1005	31509	-129372	74131	431890	187030	25	6407	625352
13. Madras	185799	15626	5465	253	58794	-36545	229392	490390	258190	33	9135	757748
14. Mysore, etc.	186148	51945	2172	12680	14117	327665	594727	523860	331970	-	56039	911869
15. All-India	160543	14283	1150	1686	18965	103213	299840	494220	283930	646	10394	789190
Agricultural families	92174	16047	364	1004	12134	87730	209453	552820	368430	711	13196	935157
Non-agricultural families	263019	7417	1922	638	28976	84480	386452	414800	175460	574	8105	598939

TABLE 69.
Annual family expenditure (Rs. per family) (C-XIII)

STATE	Rice	Wheat	Millets	Other cereals	Unspeci-fied rationed foodgrains	Arhar	Gram	Other pulses	Coconut & kopra	Groundnut	Other nuts & oil seeds
	1	2	3		-	5	6	7	8		10
1. Punjab, etc.	22.11	120.18	67.86	29.16	-	1.90	8.72	23.58	0.68	0.92	3.96
2. Rajasthan, Ajmer	17.69	49.43	74.93	63.14	-	2.67	13.50	13.29	2.04	2.73	0.29
3. Uttar Pradesh	47.35	56.50	59.15	54.14	-	19.78	9.11	14.11	0.96	0.67	1.16
4. Bihar	122.13	24.26	58.86	29.35	-	20.14	7.22	12.61	0.17	-	6.74
5. Orissa	83.30	0.27	1.01	0.35	-	4.18	1.55	8.51	0.66	1.39	0.50
6. West Bengal	209.44	4.66	-	1.08	-	1.68	1.65	23.80	0.46	0.16	5.80
7. Assam, etc.	124.49	4.51	-	0.81	-	19.39	0.81	11.15	0.30	0.07	0.22
8. Madhya Bharat, etc.	80.95	39.63	21.84	57.72	-	11.38	11.04	12.74	2.63	0.36	0.45
9. Madhya Pradesh	75.84	37.44	31.93	7.02	-	14.66	6.52	11.18	2.70	1.15	0.18
10. Hyderabad	96.77	11.16	86.38	117.26	-	11.34	24.87	3.82	4.20	0.71	0.39
11. N. Bombay, etc.	14.97	22.09	48.35	18.81	3.10	7.58	11.04	7.80	3.56	1.79	1.07
12. Bombay Deccan	13.04	16.17	66.52	6.83	5.97	11.88	13.95	5.07	16.52	2.75	0.20
13. Madras	118.20	3.32	76.69	29.02	-	10.32	11.33	4.94	5.99	0.59	4.08
14. Mysore, etc.	111.50	7.13	18.78	3.94	-	14.47	14.25	3.31	19.22	1.16	0.03
15. All-India	78.74	31.42	49.13	31.01	0.60	11.79	9.61	11.27	3.78	0.95	2.14
Agricultural families	77.16	32.38	47.44	30.68	0.61	13.33	10.36	12.73	5.34	1.17	1.89
Non-agricultural families	76.03	27.35	49.42	26.49	1.36	10.09	8.99	8.25	2.99	1.08	0.37

TABLE 69. (contd.)

Annual family expenditure (Rs. per family) (C-XIII)

	Mustard oil	Groundnut oil	Coconut oil	Linseed oil	Other edible oils	Vanaspati	Mutton	Poultry & birds	Fresh fish	Dry fish	Eggs	Other meats
	11	12	13	14	15	16	17	18	19	20	21	22
1. Punjab, etc.	22.92	0.19	0.13	0.24	1.37	17.02	8.25	2.27	0.21	-	2.31	0.38
2. Rajasthan, Ajmer	6.60	4.69	-	13.60	32.66	-	10.80	-	-	-	1.02	1.49
3. Uttar Pradesh	35.09	0.44	0.30	1.31	1.40	4.67	9.56	0.34	3.46	-	0.93	1.92
4. Bihar	33.46	0.32	4.97	2.56	1.16	0.36	9.29	0.77	10.50	0.08	0.47	0.32
5. Orissa	11.72	1.55	4.76	8.12	2.94	0.54	1.97	-	2.55	3.56	-	0.15
6. West Bengal	46.98	0.05	14.19	0.03	0.24	1.06	15.06	0.60	29.08	1.00	2.06	3.41
7. Assam, etc.	31.13	0.59	6.50	-	2.73	2.59	4.03	5.43	25.59	8.24	1.00	1.37
8. Madhya Bharat, etc.	4.23	11.90	0.53	4.23	8.58	-	3.54	0.02	0.67	0.17	0.31	0.29
9. Madhya Pradesh	3.45	26.37	3.12	8.60	3.28	1.98	5.53	0.52	1.50	0.54	0.42	1.84
10. Hyderabad	7.81	24.27	6.96	0.99	9.65	-	21.90	1.10	2.44	1.84	0.92	1.52
11. N. Bombay, etc.	0.56	53.58	3.12	2.03	4.08	2.29	3.57	0.59	0.46	2.66	0.19	0.05
12. Bombay Deccan	2.15	27.52	18.92	0.27	8.68	1.03	8.89	0.19	1.34	12.23	0.64	-
13. Madras	1.64	22.29	11.94	0.86	9.46	0.42	18.74	1.58	4.17	5.16	0.86	1.61
14. Mysore, etc.	0.59	13.69	24.44	1.50	11.53	0.63	22.16	-	16.97	6.41	0.16	3.03
15. All-India	15.59	14.14	6.28	2.96	6.25	2.54	10.33	0.89	5.92	2.49	0.80	1.26
Agricultural families	20.24	18.58	8.57	3.70	8.23	2.90	12.39	1.09	7.39	3.48	1.13	1.21
Non-agricultural families	10.37	10.68	5.12	1.42	3.99	1.62	7.33	0.64	4.27	5.84	0.52	0.90

TABLE 69. (contd.)
Annual family expenditure (Rs. per family) (C-XIII)

STATE	Milk	Ghee, butter	Other milk products	Vegetables	Fruits	Salt	Chillies	Other spices	Sugar	Gur (cane)	Other sugars
	23	24	25	26	27	28	29	30	31	32	33
1. Punjab, etc.	28.59	38.63	2.50	20.01	4.40	10.80	13.96	9.69	28.84	46.89	3.51
2. Rajasthan, Ajmer	8.83	46.58	1.05	12.74	4.06	12.21	32.53	12.08	25.45	50.40	4.01
3. Uttar Pradesh	10.33	17.60	0.55	21.30	2.24	9.74	10.93	10.72	11.72	24.05	2.20
4. Bihar	13.15	7.87	1.93	27.15	3.30	14.00	10.01	13.44	6.59	11.42	0.84
5. Orissa	3.40	4.99	0.70	16.79	1.32	6.77	6.50	8.86	3.99	10.52	0.58
6. West Bengal	15.08	6.63	2.22	47.28	4.17	6.74	15.46	15.90	7.69	17.09	4.58
7. Assam, etc.	7.05	2.51	2.29	25.04	3.29	16.69	5.61	8.16	13.37	18.43	0.11
8. Madhya Bharat, etc.	7.05	30.85	0.67	11.97	0.50	23.04	15.49	8.70	10.99	32.00	3.06
9. Madhya Pradesh	8.55	11.68	0.60	26.63	3.43	8.60	16.75	3.87	9.93	16.20	0.68
10. Hyderabad	6.96	10.60	1.27	17.91	3.04	10.95	55.22	5.23	4.73	20.53	2.08
11. N. Bombay, etc.	15.42	33.76	0.52	24.14	2.51	7.92	29.76	11.63	40.51	55.23	1.39
12. Bombay Deccan	10.63	7.13	1.38	12.91	1.91	8.99	25.66	10.22	30.01	39.17	0.31
13. Madras	4.34	4.13	1.22	12.15	3.11	7.74	27.94	14.83	3.27	14.00	4.11
14. Mysore, etc.	6.13	5.63	0.81	16.25	4.88	9.53	27.03	28.22	4.16	31.06	3.75
15. All-India	10.60	16.56	1.19	20.83	2.98	10.66	20.11	11.54	14.18	26.85	2.31
Agricultural families	12.52	16.73	1.34	23.99	3.70	13.08	24.12	14.06	18.20	34.49	2.69
Non-agricultural families	9.83	16.07	0.94	17.26	2.20	7.01	15.95	7.99	10.95	17.64	1.02

TABLE 69. (contd.)
Annual family expenditure (Rs. per family) (C-XIII)

STATE	Tea	Coffee	Other bev-erages	Prepared foods	Other food materials	Pan, supari, etc.	Tobacco (chewing)	Tobacco (smoking)	Liquors	Other intoxi-cants	Total
	34	35	36	37	38	39	40	41	42	43	44
1. Punjab, etc.	15.89	0.02	0.04	0.02	1.22	0.11	0.41	17.42	22.28	6.54	606.13
2. Rajasthan, Ajmer	5.58	-	0.79	4.61	2.02	0.37	1.13	33.47	19.29	3.83	591.60
3. Uttar Pradesh	1.34	-	0.13	1.10	10.21	5.59	5.97	17.67	3.19	1.25	490.18
4. Bihar	2.21	-	-	0.66	0.24	4.97	8.65	11.78	2.54	0.53	487.02
5. Orissa	1.04	-	0.08	1.32	0.27	14.97	4.10	2.55	0.66	3.21	232.20
6. West Bengal	3.93	-	0.03	4.71	0.49	18.85	6.85	22.58	10.64	1.79	575.20
7. Assam, etc.	13.07	-	-	0.37	0.74	15.10	16.18	22.34	13.11	1.03	435.44
8. Madhya Bharat, etc.	2.08	-	0.14	3.01	0.29	12.02	8.46	14.17	8.77	1.58	468.05
9. Madhya Pradesh	4.62	0.05	0.46	3.80	2.63	13.96	4.32	12.51	2.75	0.11	397.90
10. Hyderabad	3.25	0.64	0.64	0.07	0.57	6.18	5.05	25.79	21.98	10.10	649.09
11. N. Bombay, etc.	27.12	0.03	0.39	2.71	0.17	9.01	6.35	33.12	0.10	8.65	520.68
12. Bombay Deccan	15.02	0.41	0.21	0.34	2.25	13.47	8.42	8.59	0.07	-	431.89
13. Madras	3.32	5.43	0.18	6.69	0.61	14.17	8.84	10.56	0.06	0.48	490.39
14. Mysore, etc.	4.19	13.09	0.53	12.91	0.41	28.25	14.97	14.47	1.75	0.94	523.86
15. All-India	6.98	1.38	0.24	3.06	2.22	10.36	6.88	17.28	6.20	2.52	494.22
Agricultural families	9.29	1.73	0.31	2.98	2.05	12.68	8.35	19.64	7.03	2.45	552.82
Non-agricultural families	5.63	0.92	0.15	2.70	2.53	8.44	4.89	13.22	4.52	1.18	414.80

TABLE 70.
Annual family expenditure (Rs. per family) (C-XIV)

STATE	Firewood	Charcoal	Kerosene	Other fuel & light	Men's clothing	Women's clothing	Children's clothing	Foot-wear	Soap	Hair oils	Other toilets
	1	2	3		5	6		8	9	10	11
1. Punjab, etc.	14.49	0.24	12.39	1.51	69.03	72.06	31.58	33.83	9.51	4.07	1.46
2. Rajasthan, Ajmer	4.60	0.20	9.84	4.08	94.81	70.77	17.54	51.61	4.05	1.46	0.88
3. Uttar Pradesh	5.00	0.25	9.76	2.42	63.03	48.54	20.28	13.19	2.49	2.42	0.44
4. Bihar	5.26	0.58	12.15	2.00	54.44	50.75	16.99	5.09	3.02	2.05	0.31
5. Orissa	10.03	-	6.40	0.17	27.56	26.29	12.74	0.93	1.23	0.35	0.79
6. West Bengal	8.86	4.45	16.14	0.85	45.18	41.06	11.93	6.75	5.65	2.71	0.93
7. Assam, etc.	4.57	-	20.22	0.69	41.87	35.01	33.24	8.38	9.94	5.01	1.80
8. Madhya Bharat, etc.	7.01	0.58	11.17	0.20	63.79	53.46	15.20	26.77	1.60	0.36	0.09
9. Madhya Pradesh	10.50	0.35	12.12	3.10	37.53	50.60	12.44	8.28	4.26	2.14	0.44
10. Hyderabad	9.07	0.11	16.05	0.49	46.03	65.40	30.46	5.77	1.92	2.69	0.64
11. N. Bombay, etc.	8.25	0.37	17.25	4.02	54.30	54.31	21.41	19.12	6.51	4.85	0.50
12. Bombay Deccan	5.93	0.56	13.68	0.31	38.43	38.73	16.51	6.61	3.65	0.57	0.13
13. Madras	7.25	0.19	9.94	1.98	38.01	53.73	18.72	2.52	3.29	2.54	0.32
14. Mysore, etc.	8.04	0.45	15.91	2.48	46.33	38.35	21.14	2.46	11.30	0.64	0.40
15. All-India	7.58	0.54	12.52	1.99	52.21	51.20	19.50	13.31	4.53	2.39	0.57
Agricultural families	7.69	0.39	15.23	1.63	67.59	67.95	25.27	17.41	5.39	2.76	0.68
Non-agricultural families	7.92	0.76	10.60	1.01	28.71	29.68	10.96	6.98	3.67	2.02	0.51

TABLE 70. (Contd.)
Annual family expenditure (Rs. per family) (C-XIV)

STATE	Books, periodicals, etc.	Medicines	Domestic service	Enter-tainment	Travelling	Utensils & furni-ture	Gifts, etc.	Payments in ceremonies	Other capital expenditure	Other expenditure	Total
	12	13	14	15	16	17	18	19	20	21	22
1. Punjab, etc.	10.23	22.10	16.14	7.92	28.08	8.85	6.91	14.20	6.90	16.82	388.32
2. Rajasthan, Ajmer	2.40	8.28	3.10	0.69	22.99	11.86	10.18	10.37	5.57	5.80	341.08
3. Uttar Pradesh	3.72	22.16	10.06	3.36	15.16	5.76	5.57	21.32	25.89	14.68	295.50
4. Bihar	6.20	30.79	26.52	0.81	12.95	6.17	3.93	17.64	10.30	11.94	279.89
5. Orissa	5.17	14.10	5.77	1.53	10.25	13.33	2.52	15.35	2.12	84.26	240.89
6. West Bengal	10.15	50.85	49.25	7.47	15.43	9.86	5.45	32.73	8.77	3.62	338.09
7. Assam, etc.	8.49	24.32	34.70	13.11	15.28	10.26	1.60	3.26	0.22	4.92	276.89
8. Madhya Bharat, etc.	0.51	8.81	8.50	14.17	6.91	5.14	2.22	13.73	2.58	27.02	269.82
9. Madhya Pradesh	3.26	19.41	6.93	7.75	14.56	9.68	1.18	10.73	5.96	3.35	224.57
10. Hyderabad	5.17	17.40	14.94	3.72	11.63	5.52	12.70	8.44	5.19	20.27	283.61
11. N. Bombay, etc.	1.92	21.92	3.96	1.90	24.10	12.37	6.87	6.97	1.84	9.20	281.34
12. Bombay Deccan	1.49	16.44	3.71	1.51	14.45	2.43	3.86	4.24	11.10	2.69	187.03
13. Madras	1.80	16.37	8.17	3.32	17.88	7.33	2.21	9.07	16.73	36.82	258.19
14. Mysore, etc.	14.38	25.58	11.53	2.89	25.45	8.98	10.14	12.54	5.04	67.94	331.97
15. All-India	4.72	21.37	13.35	4.64	16.97	8.10	4.97	13.46	10.03	19.98	283.93
Agricultural families	6.14	29.82	19.88	8.47	21.67	9.52	7.51	20.22	11.87	21.34	368.43
Non-agricultural families	2.07	12.03	6.64	2.42	12.75	4.97	2.20	5.89	7.25	16.42	175.46

TABLE 71.
Distribution of family expenditure (C-XIII, XIV)

STATE	Food-grains C-XIII 1-4	Pulses 5-7	Coconut & other nuts 8-10	Edible oils 11-16	Meat 17-22	Milk & milk products 23-25	Vegetables & fruits 26,27	Spices 28-30	Sugars 31-33	Tea, coffee, etc. 34-38	Pan, tobacco, etc. 39-43
1. Punjab, etc.	24.06	3.44	0.56	4.21	1.35	7.02	2.45	3.46	7.97	1.73	4.70
2. Rajasthan, Ajmer	22.00	3.16	0.54	6.17	1.43	6.05	1.80	6.09	8.56	1.39	6.23
3. Uttar Pradesh	27.64	5.47	0.35	5.50	2.06	3.62	3.00	4.00	4.83	1.63	4.29
4. Bihar	30.60	5.21	0.90	5.58	2.79	2.99	3.97	4.88	2.46	0.40	3.71
5. Orissa	17.95	3.01	0.54	6.26	1.74	1.92	3.83	4.68	3.19	0.57	5.39
6. West Bengal	23.56	2.97	0.70	6.85	5.61	2.62	5.63	4.17	3.21	1.00	6.65
7. Assam, etc.	18.22	4.40	0.08	6.11	6.41	1.66	3.98	4.28	4.48	1.99	9.51
8. Madhya Bharat, etc.	27.12	4.77	0.47	3.99	0.68	5.23	1.69	6.40	6.24	0.75	6.10
9. Madhya Pradesh	24.45	5.20	0.65	7.52	1.66	3.34	4.83	4.69	4.31	1.85	5.41
10. Hyderabad	33.41	4.29	0.57	5.33	3.19	2.02	2.25	7.66	2.93	0.55	7.41
11. N. Bombay, etc.	12.99	3.29	0.80	8.19	0.94	6.20	3.32	6.15	12.11	3.79	7.14
12. Bombay Deccan	16.57	4.99	3.15	9.46	3.76	3.10	2.39	7.25	11.23	2.95	4.94
13. Madras	30.35	3.55	1.42	6.23	4.29	1.29	2.04	6.75	2.86	2.17	4.56
14. Mysore, etc.	16.52	3.74	2.38	6.12	5.69	1.47	2.47	7.57	4.55	3.64	7.06
15. All-India	24.46	4.20	0.88	6.14	2.79	3.64	3.06	5.44	5.57	1.78	5.56
Agricultural families	20.37	3.95	0.91	6.75	2.90	3.32	3.01	5.56	6.01	1.78	5.44
Non-agricultural families	30.37	4.63	0.75	5.62	3.30	4.54	3.30	5.24	5.03	2.02	5.46

TABLE 71. (Contd.)
Distribution of family expenditure (C-XIII, XIV)

STATE	Fuel & light	Clothing, Footwear	Toilets	Books, periodicals, etc.	Medicine, etc.	Domestic service	Enter-tainment	Travelling	Consumer capital expenditure	Other expenditure	Total = 100
	C-XIV 1-4	5-8	9-11	12	13	14	15	16	17, 20	18,19,21	Rs.
1. Punjab, etc.	2.88	20.77	1.51	1.03	2.22	1.62	0.80	2.82	1.58	3.82	994.45
2. Rajasthan, Ajmer	2.01	25.17	0.68	0.26	0.89	0.34	0.08	2.46	1.87	2.82	932.68
3. Uttar Pradesh	2.22	18.46	0.68	0.47	2.82	1.28	0.43	1.93	4.03	5.29	785.68
4. Bihar	2.61	16.61	0.70	0.81	4.01	3.46	0.11	1.69	2.14	4.37	766.91
5. Orissa	3.51	14.27	0.50	1.09	2.98	1.22	0.32	2.17	3.27	21.59	473.09
6. West Bengal	3.32	11.49	1.02	1.11	5.57	5.39	0.82	1.69	2.04	4.58	913.29
7. Assam, etc.	3.58	16.64	2.35	1.19	3.42	4.87	1.84	2.15	1.47	1.37	712.33
8. Madhya Bharat, etc.	2.57	21.57	0.28	0.07	1.19	1.15	1.92	0.94	1.05	5.82	737.87
9. Madhya Pradesh	4.19	17.48	1.10	0.52	3.12	1.12	1.25	2.34	2.52	2.45	622.47
10. Hyderabad	2.76	15.82	0.56	0.55	1.87	1.60	0.40	1.25	1.14	4.44	932.70
11. N. Bombay, etc.	3.73	18.60	1.47	0.24	2.73	0.42	0.24	3.01	1.77	2.87	802.02
12. Bombay Deccan	3.31	16.20	0.70	0.24	2.66	0.60	0.24	2.33	2.19	1.74	618.92
13. Madras	2.59	15.09	0.82	0.24	2.19	1.09	0.44	2.39	3.21	6.43	748.58
14. Mysore, etc.	3.14	12.65	1.44	1.68	2.99	1.35	0.34	2.97	1.64	10.59	855.83
15. All-India	2.91	17.50	0.96	0.61	2.75	1.71	0.60	2.18	2.33	4.93	778.15
Agricultural families	2.71	19.35	0.96	0.67	3.24	2.16	0.91	2.35	2.32	5.33	921.25
Non-agricultural families	3.45	12.93	1.05	0.35	2.04	1.12	0.42	2.16	2.07	4.15	590.26

TABLE 72.
Annual family expenditure of non-agricultural families (Rs. per family) (C-XIII, C-XIV)

	Occupation group	No. of families	Food-grains C-XIII 1-4	Pulses 5-7	Coconut, etc. 8-10	Edible oils 11-16	Meat 17-22
A.1	Cultivators of land, wholly or mainly owned	47	18.07	2.43	0.17	7.68	1.47
2.	Cultivators of land, wholly or mainly unowned	2	35.83	-	-	5.37	8.36
3.	Cultivating labourers	1454	36.38	4.46	0.46	5.52	2.72
4.	Non-cultivating owners of land	46	17.94	4.52	0.11	6.91	3.13
A-	All agricultural classes	1549	34.37	4.29	0.42	5.73	2.65
0.1,2	Stock raising & rearing of small animals & insects	104	38.74	11.86	0.63	4.85	1.34
3.	Plantation industries	101	29.98	4.80	0.47	2.18	8.21
4.	Forestry & woodcutting	49	51.09	7.79	0.14	5.54	2.81
6.	Fishing	16	31.17	4.82	0.27	7.01	4.05
0-	Primary industries not elsewhere specified	270	37.85	8.15	0.45	4.25	4.17
1.0	Non-metallic mining & quarrying not elsewhere classified	28	33.61	3.91	-	5.75	4.56
5.	Stone-quarrying, clay & sand pits	18	33.33	8.19	-	4.85	3.84
1-	Mining and quarrying	46	33.50	5.67	-	5.38	4.26
2.0	Food industries otherwise unclassified	10	31.56	4.64	0.17	5.53	4.17
1	Grains and pulses	38	26.98	5.02	0.53	8.29	3.30
2	Vegetable oil & dairy products	22	46.03	4.71	0.19	4.13	3.67
3	Sugar industries	10	22.35	3.53	0.16	3.14	8.99
4	Beverages	9	32.93	7.14	1.90	5.76	4.26
5	Tobacco	8	24.99	5.39	1.37	4.46	3.52
6	Cotton textiles	85	39.68	4.49	0.89	5.69	1.92
7	Wearing apparel (except footwear) & made-up of textile goods	50	20.71	10.49	1.29	4.53	4.65
8	Textile industries, otherwise unclassified	46	42.44	2.35	0.75	4.90	1.75
9	Leather, leather products & footwear	100	32.16	3.64	0.61	3.98	3.60
2-	Processing & manufacture of foodstuffs, textiles, leather & products thereof	378	33.15	5.19	0.80	4.90	3.39
3-	Processing & manufacture of metals, chemicals & products thereof	69	28.85	6.36	1.20	6.15	2.87
4.0,9	Manufacturing industries otherwise unclassified	42	31.12	5.45	0.40	3.50	1.53
2,3	Bricks, tiles, cement pipes & other structural clay products	17	27.30	3.11	1.21	4.26	0.58
4	Non-metalic mineral products	65	34.37	4.49	0.51	6.90	2.10
6,7	Wood, wood-products, furniture & fixtures	155	27.46	3.73	1.15	5.51	1.95
4-	Processing & manufacture not elsewhere specified	279	29.51	4.18	0.88	5.34	1.83

TABLE 72. (contd.)

Annual family expenditure of non-agricultural families (Rs. per family) (C-XIII, C-XIV)

	Milk, vegetables, etc. 23-27	Spices 28-30	Sugars 31-33	Tea, coffee, etc. 34-38	Pan, tobacco, etc. 39-43	Fuel, light C-XIV, 1-4	Clothing, footwear 5-8	Toilets 9-11	Other 12-21	Total =100 Rs.
A.1	13.34	4.30	6.05	4.23	11.90	2.58	14.16	1.57	12.05	953.04
2.	4.78	9.25	9.55	-	5.37	2.39	11.94	1.19	5.97	544.38
3.	4.97	6.07	4.04	0.78	6.24	2.89	12.79	0.48	12.20	361.59
4.	14.63	6.44	6.41	1.77	5.78	2.82	18.15	1.37	10.02	431.33
A-	5.93	5.96	4.28	1.08	6.65	2.86	13.08	0.59	12.11	381.79
0.1,2	5.09	5.49	5.18	1.78	4.99	2.30	11.62	0.91	5.22	521.66
3.	8.12	6.10	2.05	0.10	17.08	2.85	12.88	2.63	2.55	474.57
4.	2.40	3.93	3.57	2.17	3.77	1.26	11.38	0.86	3.29	587.67
6.	7.91	4.49	2.03	2.86	6.28	8.37	13.03	1.20	6.51	611.20
0-	5.78	5.32	3.57	1.36	8.74	2.70	12.13	1.51	4.02	520.13
1.0	2.19	5.67	5.53	1.29	11.17	6.56	13.44	1.70	4.62	537.28
5.	1.08	5.17	2.09	2.21	11.02	1.16	17.44	0.10	9.52	621.10
1-	1.71	5.47	4.12	1.67	11.11	4.34	15.08	1.05	6.64	591.99
2.0	4.04	6.13	4.85	0.43	13.31	2.89	6.12	0.34	15.82	764.09
1	6.57	3.72	6.26	0.48	6.09	3.34	22.62	0.71	6.09	337.33
2	7.87	5.18	5.69	0.81	4.71	3.07	10.50	0.46	2.98	636.11
3	-	5.30	-	0.68	1.86	1.64	11.69	-	40.66	1189.51
4	5.64	4.84	2.99	0.46	6.45	1.15	13.36	1.38	11.74	627.27
5	6.22	3.80	5.67	2.70	5.12	9.47	11.00	2.64	13.65	738.17
6	7.26	4.59	7.43	1.50	4.06	4.00	8.97	0.75	8.77	859.75
7	9.36	7.38	5.86	1.76	4.92	5.44	8.37	1.46	13.78	947.07
8	3.12	4.81	2.41	3.51	5.11	2.42	5.58	0.28	20.57	618.13
9	6.30	5.34	4.67	1.24	5.67	3.64	14.40	1.00	13.75	642.68
2-	6.50	5.33	5.30	1.55	5.07	3.85	10.70	0.87	13.40	717.01
3-	7.82	4.53	5.41	3.85	4.12	6.00	12.83	1.26	8.75	794.48
4.0,9	7.59	2.67	4.26	2.34	3.82	4.97	15.99	0.83	15.53	1002.61
2,3	4.64	5.60	7.04	3.83	6.34	4.15	27.09	1.04	3.81	663.40
4	6.09	5.59	6.71	1.33	5.16	6.37	14.43	0.48	5.47	662.30
6,7	10.11	4.87	6.46	2.76	4.50	2.75	15.01	1.09	12.65	790.41
4-	8.55	4.63	6.11	2.45	4.60	3.96	15.71	0.92	11.33	784.75

TABLE 72. (Contd.)

Annual family expenditure of non-agricultural families (Rs. per family) (C-XIII, C-XIV)

	Occupation group	No. of families	Food-grains C-XIII 1-4	Pulses 5-7	Coconut, etc. 8-10	Edible oils 11-16	Meat 17-22
5.1	Construction and maintenance-buildings	64	30.36	4.48	0.58	5.59	3.13
2	Construction and maintenance-roads, bridges, etc.	9	57.90	0.76	0.51	4.55	5.06
4	Construction and maintenance-irrigation works	10	1.07	-	-	2.14	-
5,6,0	Works and services-electric power, gas and water supply, etc.	3	22.21	9.82	4.01	6.62	5.41
7	Sanitary works and services (including scavengers)	23	23.58	5.58	0.53	5.71	3.96
5-	Construction and utilities	109	29.69	4.55	0.65	5.53	3.33
6-1	Retail trade in foodstuffs	197	27.55	3.81	0.73	5.82	1.12
2,3,0	Retail trade in fuel, textile and leather goods, etc.	61	30.74	7.46	1.28	6.30	1.73
4,8	Wholesale trade in foodstuffs, money-lending and other financial business	42	24.16	5.62	1.15	9.37	1.59
6-	Commerce	300	27.68	4.82	0.91	6.46	1.31
7.1	Transport by road	24	43.87	5.19	0.46	6.03	2.32
2	Transport by water	10	5.20	0.46	2.00	4.19	5.95
4,6	Railway and postal services	42	30.87	3.76	0.42	4.82	2.12
7-	Transport storage and communication	76	30.90	3.70	0.64	5.05	2.68
8.1	Medical and other health services	14	19.96	4.35	1.77	10.90	2.81
2	Educational services and research	45	20.23	6.82	1.64	4.56	2.35
3,4	Defence and police services	17	13.04	2.23	0.82	3.70	2.28
5	Village officers and servants	67	18.39	4.82	0.61	5.97	1.00
6,7	Employees of local bodies and State Governments	21	23.54	4.12	0.28	7.16	2.84
8-	Health, education and public administration	164	19.08	5.01	1.08	5.87	2.04
9.0,6	Services otherwise unclassified	502	33.57	2.99	1.02	6.06	2.52
1	Domestic services	40	23.58	7.34	0.68	7.36	2.86
2	Barbers and beauty shops	93	30.89	5.17	0.67	5.88	3.80
3	Laundries and laundry services	67	17.89	3.55	0.76	6.34	5.80
4	Hotels, restaurants, eating houses, etc.	14	22.69	4.74	2.56	5.76	1.84
5	Recreation services	6	19.36	5.14	0.76	4.69	1.81
8	Religions, charitable and welfare services	89	22.94	4.00	0.30	6.72	1.86
9	Other non-productive occupations	47	14.95	4.51	2.18	5.37	2.38
9-	Services not elsewhere specified	858	29.06	3.71	0.99	6.10	2.78
	All occupations	40.98	30.60	4.66	0.76	5.67	2.60

TABLE 72. (contd.)

Annual family expenditure of non-agricultural families (Rs. per family) (C-XIII, C-XIV)

	Milk, vegetables, etc. 23-27	Spices 28-30	Sugars 31-33	Tea, coffee, etc. 34-38	Pan, tobacco, etc. 39-43	Fuel, light C-XIV, 1-4	Clothing, footwear 5-8	Toilets 9-11	Other 12-21	Total =100 Rs.
5.1	5.49	6.32	5.14	1.79	5.39	4.54	9.83	1.36	16.00	764.61
2	0.38	11.25	2.40	0.13	4.42	2.02	10.12	0.50	-	285.63
4	7.49	7.76	11.76	-	3.48	1.07	20.32	-	44.91	121.56
5,6,0	9.82	4.21	9.02	8.62	7.42	1.60	4.01	2.41	4.82	540.33
7	6.77	5.15	6.64	1.55	13.97	3.17	13.74	0.40	9.25	427.88
5-	5.62	6.31	5.48	1.82	6.68	4.10	10.50	1.17	14.57	589.22
6-1	10.58	4.72	5.79	2.71	3.87	3.97	13.50	1.36	14.47	996.97
2,3,0	11.43	4.08	5.29	4.83	3.34	3.89	7.82	1.29	10.52	1005.00
4,8	9.05	4.20	6.48	1.32	3.69	2.62	14.29	0.99	15.47	1098.11
6-	10.51	4.51	5.79	2.93	3.74	3.75	12.48	1.29	13.82	1012.76
7.1	6.17	3.89	8.33	1.14	5.94	3.30	7.38	0.79	5.19	887.38
2	3.31	3.55	4.62	1.50	4.22	1.94	17.50	0.24	45.32	1069.92
4,6	8.88	3.57	5.01	5.78	5.55	3.58	15.55	1.63	8.46	1174.65
7-	7.44	3.65	5.83	4.00	5.47	3.29	13.67	1.23	12.45	1070.17
8.1	11.89	4.86	4.47	5.31	3.35	3.28	9.17	1.20	16.68	1386.58
2	13.09	3.02	3.53	2.39	2.40	2.99	11.95	1.81	23.22	1325.01
3,4	24.47	4.63	7.13	2.17	1.77	2.96	17.32	1.20	16.28	1395.21
5	8.31	5.85	5.66	1.62	6.07	2.95	21.72	0.83	16.20	795.25
6,7	9.23	2.90	4.87	5.23	2.71	4.37	16.22	2.87	13.66	992.21
8-	12.59	4.28	4.91	2.78	3.56	3.17	15.81	1.49	18.33	1078.49
9.0,6	7.95	5.65	4.76	2.07	5.10	3.58	11.22	0.98	12.53	525.57
1	8.10	5.79	5.79	2.94	4.53	4.93	12.89	1.89	11.32	310.07
2	4.24	6.65	6.68	1.64	4.92	2.19	16.42	1.17	9.68	669.85
3	5.83	10.76	5.16	2.49	8.05	4.04	13.03	1.10	15.20	403.42
4	6.63	5.50	8.96	1.36	2.97	4.92	10.76	8.30	13.01	906.51
5	5.30	5.30	5.14	1.51	4.39	1.82	23.60	4.84	16.34	358.05
8	11.39	4.53	5.03	2.60	6.62	4.03	16.83	1.18	11.97	630.80
9	23.23	3.50	4.95	3.04	3.72	3.42	11.64	1.31	15.80	736.85
9-	8.83	5.78	5.23	2.17	5.25	3.53	12.80	1.29	12.48	549.14
	7.90	5.28	5.05	2.03	5.50	3.46	13.03	1.06	12.40	590.26

TABLE 73.

Distribution of annual family expenditure according to the agency from which purchases made (C-XIII, C-XIV)

	State	Expenditure reported in C-XIII						Expenditure reported in C-XIV					
		Proportion of purchases from		Total	Proportion of expenditure on purchases from		Total per family (Rs.) =100	Proportion of purchases from		Total	Proportion of expenditure on purchases from		Total per family (Rs.) =100
		Producer	Trader		Producer	Trader		Producer	Trader		Producer	Trader	
1.	Punjab, etc.	20.27	79.73	100.00	43.64	56.36	606.13	8.55	91.45	100.00	7.93	92.07	388.32
2.	Rajasthan, Ajmer	12.06	87.94	100.00	20.87	79.13	591.60	15.26	84.74	100.00	12.03	87.97	341.08
3.	Uttar Pradesh	48.13	51.87	100.00	31.21	68.79	490.18	7.70	92.30	100.00	5.63	94.37	295.50
4.	Bihar	3.41	96.59	100.00	21.98	78.02	437.02	5.39	94.61	100.00	4.36	95.64	279.86
5.	Orissa	10.03	89.97	100.00	16.86	83.14	232.20	3.69	96.31	100.00	13.33	86.67	240.89
6.	West Bengal	33.16	66.84	100.00	34.31	65.69	575.20	5.19	94.81	100.00	13.23	86.77	338.09
7.	Assam, etc.	10.41	89.59	100.00	15.66	84.34	435.44	2.82	97.18	100.00	3.03	96.97	276.89
8.	Madhya Bharat, etc.	21.87	78.13	100.00	41.36	58.64	468.05	12.34	87.66	100.00	10.05	89.95	269.82
9.	Madhya Pradesh	60.61	39.39	100.00	17.03	82.97	397.90	2.72	97.28	100.00	4.23	95.77	224.57
10.	Hyderabad	13.83	86.17	100.00	30.50	69.50	649.09	5.72	94.28	100.00	5.51	94.49	283.61
11.	N. Bombay, etc.	8.16	91.84	100.00	9.98	90.02	520.68	6.19	93.81	100.00	11.06	88.94	281.34
12.	Bombay Deccan	20.23	79.77	100.00	15.83	84.17	431.89	7.29	92.71	100.00	8.60	91.40	187.03
13.	Madras	24.02	75.98	100.00	17.23	82.77	490.39	58.05	41.95	100.00	5.98	94.02	258.19
14.	Mysore, etc.	9.21	90.79	100.00	9.96	90.04	523.86	1.79	98.21	100.00	1.96	98.04	331.97
15.	All-India	24.04	75.96	100.00	23.81	76.19	494.22	7.40	92.60	100.00	7.37	92.63	283.93
	Agricultural families	11.37	88.63	100.00	22.62	77.38	552.82	6.25	93.75	100.00	5.21	94.79	368.43
	Non-agricultural families	2.54	87.46	100.00	25.52	74.48	414.80	6.64	93.36	100.00	5.84	94.16	175.46

TABLE 74.

Distribution of annual family expenditure on different items according to the agency from which purchases made (C-XIII)

Item	Agricultural families						Non-Agricultural families					
	Proportion of purchases from		Total	Proportion of expenditure on purchases from		Total per family (Rs.) =100	Proportion of purchases from		Total	Proportion of expenditure on purchases from		Total per family (Rs.) =100
	Producer	Trader		Producer	Trader		Producer	Trader		Producer	Trader	
Rice	24.27	75.73	100.00	28.05	71.95	77.16	26.06	78.94	100.00	35.01	64.99	74.96
Wheat	28.75	71.25	100.00	47.42	52.58	32.38	27.14	72.86	100.00	36.46	63.54	28.14
Millets	33.44	66.56	100.00	40.26	59.74	47.44	29.10	70.90	100.00	36.77	63.23	49.89
Cereals & rationed food-grains	22.25	77.75	100.00	33.29	66.71	30.68	26.54	73.46	100.00	32.93	67.07	27.85
Arhar seed & pulse	10.75	89.25	100.00	14.65	85.35	13.33	13.41	86.59	100.00	19.90	80.10	9.86
Gram-seed, pulse & flour	12.63	87.37	100.00	15.73	84.27	10.36	14.15	85.85	100.00	31.21	68.79	9.43
Other pulse & pulse seed	13.60	86.40	100.00	16.26	88.74	12.73	11.48	88.52	100.00	15.50	84.50	8.18
Coconut & kopra	1.74	98.26	100.00	2.03	97.97	5.34	2.79	97.21	100.00	3.24	96.76	2.98
Groundnut & seed	5.15	94.85	100.00	9.11	90.89	1.17	6.15	93.85	100.00	6.02	93.98	1.07
Other nuts & oil seeds	6.85	93.15	100.00	63.79	36.21	1.89	1.69	98.31	100.00	0.64	99.86	0.37
Mustard oil	15.47	84.53	100.00	15.92	84.08	20.24	12.35	87.65	100.00	13.44	86.56	11.47
Groundnut oil	3.97	96.03	100.00	6.72	93.28	18.58	4.17	95.83	100.00	5.48	94.52	11.69
Coconut oil	0.44	99.56	100.00	0.53	99.47	8.57	1.00	99.00	100.00	1.27	98.73	5.04
Linseed oil	14.24	85.76	100.00	16.49	83.51	3.70	20.86	79.14	100.00	18.29	81.71	1.42
Other edible oils	8.94	91.06	100.00	16.13	83.87	8.23	7.19	92.81	100.00	9.40	90.60	4.05

TABLE 74.(Contd.)

Distribution of annual family expenditure on different items according to the agency from which purchases made (C-XIII)

Item	Agricultural families						Non-Agricultural families					
	Proportion of purchases from		Total	Proportion of expenditure on purchases from		Total per family (Rs.) =100	Proportion of purchases from		Total	Proportion of expenditure on purchases from		Total per family (Rs.) =100
	Producer	Trader		Producer	Trader		Producer	Trader		Producer	Trader	
Vanaspati	2.78	97.27	100.00	2.28	97.72	2.90	1.18	98.82	100.00	0.80	99.20	1.60
Mutton (sheep & goat)	20.80	79.20	100.00	28.15	71.85	12.39	20.20	79.80	100.00	19.31	80.69	7.07
Poultry & birds	35.71	64.29	100.00	30.33	69.67	1.09	40.00	60.00	100.00	38.78	61.22	0.60
Fresh fish	29.17	70.88	100.00	33.13	66.87	7.39	24.83	75.17	100.00	22.38	77.62	3.96
Dry fish	2.29	97.71	100.00	2.27	97.73	3.48	0.68	99.32	100.00	0.50	99.50	1.58
Eggs	47.89	52.11	100.00	49.89	50.11	1.13	47.76	52.24	100.00	47.73	52.27	0.49
Other meats	14.12	85.88	100.00	10.76	89.24	1.21	27.15	72.85	100.00	29.85	70.15	0.89
Milk	67.98	32.07	100.00	72.99	27.01	12.52	67.79	32.21	100.00	70.83	29.17	9.81
Butter, ghee	62.96	37.04	100.00	63.32	36.68	16.73	57.65	42.35	100.00	61.64	38.36	15.96
Other milk products	62.43	37.57	100.00	65.26	34.74	1.34	62.42	37.58	100.00	59.56	40.44	0.94
Vegetables	33.42	66.58	100.00	32.45	67.55	23.99	34.46	65.54	100.00	34.93	65.07	17.61
Fruits	12.01	87.99	100.00	8.60	91.40	3.70	11.60	88.40	100.00	7.00	93.00	2.10
Salt	1.34	98.66	100.00	1.16	98.84	13.08	1.05	98.95	100.00	0.99	99.01	6.89
Chilies-dry & powder	6.14	98.86	100.00	6.43	93.57	24.12	6.51	93.49	100.00	8.56	91.44	16.82
Other spices	0.90	99.10	100.00	1.12	98.88	14.06	1.48	98.52	100.00	1.87	98.13	7.80
Sugar	1.60	98.40	100.00	1.04	98.96	18.20	1.76	98.24	100.00	1.66	98.34	10.93

TABLE 74.(Contd.)

Distribution of annual family expenditure on different items according to the agency from which purchases made (C-XIII)

Item	Agricultural families						Non-Agricultural families					
	Proportion of purchases from		Total	Proportion of expenditure on purchases from		Total per family (Rs.) =100	Proportion of purchases from		Total	Proportion of expenditure on purchases from		Total per family (Rs.) =100
	Producer	Trader		Producer	Trader		Producer	Trader		Producer	Trader	
Gur (cane)	6.49	93.51	100.00	10.46	88.55	34.49	6.94	93.06	100.00	8.36	91.64	18.54
Other Sugars	5.94	94.06	100.00	3.38	96.62	2.69	5.55	94.45	100.00	8.79	91.21	1.02
Tea	0.80	99.20	100.00	0.45	99.55	9.29	0.66	99.34	100.00	0.24	99.76	5.62
Coffee	0.52	99.48	100.00	0.07	99.93	1.73	1.42	98.58	100.00	0.34	99.66	0.92
Other beverages	5.88	94.12	100.00	0.41	99.59	0.31	11.76	88.24	100.00	27.37	72.63	0.15
Prepared foods & drinks	14.34	85.66	100.00	11.85	88.15	2.98	14.46	85.54	100.00	7.89	92.61	2.64
Other food materials	1.75	98.25	100.00	1.15	98.85	2.05	3.57	96.43	100.00	1.42	98.58	2.52
Pan, supari, etc.	2.32	97.68	100.00	1.45	98.55	12.68	1.28	98.72	100.00	1.21	98.79	8.05
Tobacco (chewing)	2.43	97.57	100.00	1.94	98.06	8.35	1.13	98.87	100.00	1.37	98.63	4.89
Tobacco (smoking)	3.98	96.02	100.00	6.02	93.98	19.64	3.28	96.72	100.00	4.43	95.57	13.67
Liquors & wines	17.69	82.31	100.00	18.84	77.16	7.03	17.13	82.87	100.00	12.04	87.96	4.15
Other intoxicants	11.81	88.19	100.00	16.17	83.83	2.45	16.81	83.19	100.00	15.91	84.09	1.18
All items (C-XIII)	11.37	88.63	100.00	22.62	77.38	552.82	12.54	87.46	100.00	25.52	74.48	414.80

TABLE 75.

Distribution of annual family expenditure on different items according to the agency from which purchases made (C-XIV)

Item	Agricultural families						Non-Agricultural families					
	Proportion of purchases from		Total	Proportion of expenditure on purchases from		Total per family (Rs.) =100	Proportion of purchases from		Total	Proportion of expenditure on purchases from		Total per family (Rs.) =100
	Producer	Trader		Producer	Trader		Producer	Trader		Producer	Trader	
Firewood	33.84	66.16	100.00	32.68	67.32	7.69	34.08	65.92	100.00	35.13	64.87	7.85
Charcoal	9.52	90.48	100.00	8.50	91.50	0.39	7.54	92.46	100.00	1.32	98.68	1.21
Kerosene	0.89	99.11	100.00	1.17	98.83	15.23	2.66	97.34	100.00	1.05	98.95	10.28
Other fuel & light	20.80	79.20	100.00	21.25	78.75	1.60	20.39	79.61	100.00	16.31	83.69	1.03
Men’s clothing	3.14	96.86	100.00	1.40	98.60	67.59	2.30	97.70	100.00	1.86	98.14	28.27
Women’s clothing	4.38	95.62	100.00	1.76	98.24	67.96	2.38	97.62	100.00	2.02	97.98	29.09
Children’s clothing	5.08	94.92	100.00	0.83	99.17	25.27	1.48	98.52	100.00	1.25	98.75	10.69
Footwear	26.40	73.60	100.00	29.13	70.87	17.41	25.40	74.80	100.00	25.87	74.13	6.90
Soap	0.85	99.15	100.00	0.90	99.10	5.35	0.56	99.44	100.00	0.36	99.64	3.57
Hair oil	1.28	98.72	100.00	0.76	99.24	2.68	1.43	98.57	100.00	1.45	98.55	1.96
Other Toilets	7.00	93.00	100.00	4.52	95.48	0.68	8.70	91.30	100.00	11.19	88.81	0.48
Books, periodicals & education	1.10	98.90	100.00	0.46	99.54	6.15	2.42	97.58	100.00	1.22	98.78	2.08
Medicines & medical services	9.02	90.98	100.00	9.85	90.15	29.82	7.89	92.11	100.00	11.29	88.71	11.91
Domestic & personal services	7.23	92.77	100.00	2.96	97.04	19.88	3.98	96.02	100.00	0.69	99.31	6.46
Entertainment	4.33	95.67	100.00	2.08	97.92	7.46	5.16	94.84	100.00	4.38	95.62	2.32
Travelling	3.16	96.84	100.00	2.76	97.24	21.67	4.77	95.23	100.00	4.24	95.76	12.56
Household utensils & furniture	17.28	82.72	100.00	14.11	85.89	9.52	15.30	84.70	100.00	23.11	76.89	4.94
Gifts, donations & subscriptions	86.00	14.00	100.00	71.75	28.25	7.51	85.10	14.90	100.00	78.71	21.29	2.16
Cash payments made to in ceremonies	79.91	20.09	100.00	76.97	23.03	20.27	77.05	22.95	100.00	71.02	28.98	5.88
Other domestic capital expenditure	5.56	94.44	100.00	2.89	96.11	11.87	4.55	95.45	1001)0	1.72	98.28	7.23
Other household expenditure	1.23	98.77	100.00	1.27	98.73	22.40	1.95	98.05	100.00	1.64	98.36	18.59
All items (C-XIV)	11.07	88.93	100.00	10.34	89.66	368.43	10.16	89.84	100.00	9.04	90.96	175.46

TABLE 76.

Proportion of families reporting expenditure on different items of family expenditure in one week (C-XIII)

	STATE	Rice	Wheat	Millets	Other	Unspecified rationed foodgrains	Arhar	Gram	Other pulses	Coconut & kopra	Groundnut	Other nuts & oil seeds
		1	2	3	4	-	5	6	7	8	9	10
1.	Punjab, etc.	16.16	29.11	16.86	7.69	-	3.99	8.06	25.62	3.29	4.56	4.61
2.	Rajasthan, Ajmer	13.41	15.93	12.10	12.30	-	3.33	4.99	10.74	4.49	5.85	1.41
3.	Uttar Pradesh	24.02	19.19	19.55	16.53	-	25.08	7.31	17.87	1.34	5.81	1.90
4.	Bihar	30.27	8.88	7.20	12.27	-	22.19	6.94	17.77	0.69	-	8.94
5.	Orissa	27.46	0.37	1.04	0.37	-	7.29	2.53	12.72	3.35	3.72	3.79
6.	West Bengal	41.93	3.80	-	0.94	-	3.91	2.55	47.86	0.73	0.36	14.11
7.	Assam, etc.	43.11	6.53	-	1.21	-	34.94	1.78	27.27	1.42	0.28	0.07
8.	Madhya Bharat, etc.	28.81	13.83	4.69	18.52	-	13.05	8.82	11.86	7.35	1.52	1.10
9.	Madhya Pradesh	31.69	17.59	14.78	3.03	-	20.28	9.40	16.59	9.31	2.84	1.00
10.	Hyderabad	33.15	12.23	24.86	24.52	-	11.14	27.11	7.95	12.70	2.79	1.49
11.	N. Bombay, etc.	12.21	11.39	15.07	10.15	2.02	9.24	7.62	7.26	7.75	2.90	1.86
12.	Bombay Deccan	12.83	17.52	26.40	1.26	2.91	28.95	27.60	10.75	46.77	8.61	0.79
13.	Madras	39.34	5.39	30.52	10.89	-	15.43	23.69	10.27	17.96	1.93	2.50
14.	Mysore, etc.	44.95	11.36	15.56	3.19	-	23.98	12.68	8.59	39.66	2.76	0.42
15.	All-India	27.99	12.95	15.33	9.54	0.33	16.50	11.11	16.18	10.03	3.16	3.20
	Agricultural families	23.65	12.27	12.84	7.92	0.27	16.40	11.48	15.42	13.50	3.80	1.43
	Non-agricultural families	32.67	14.84	20.96	11.08	0.78	18.74	13.45	16.79	9.61	3.17	1.44

TABLE 76. (Contd.)

Proportion of families reporting expenditure on different items of family expenditure in one week (C-XIII)

	STATE	Mustard oil	Groundnut oil	Coconut oil	Linseed oil	Other edible oils	Vanaspati	Mutton	Poultry & birds	Fresh fish	Dry fish	Eggs	Other meats
		11	12	13	14	15	16	17	18	19	20	21	22
1.	Punjab, etc.	48.56	0.49	0.12	1.03	2.10	14.31	8.80	1.15	0.45	-	4.69	0.37
2.	Rajasthan, Ajmer	7.66	4.99	-	8.22	25.00	-	8.11	0.05	-	-	0.96	1.31
3.	Uttar Pradesh	53.85	1.60	1.76	3.49	2.46	2.80	13.52	0.38	7.35	-	2.14	3.23
4.	Bihar	69.94	2.23	18.43	6.34	4.98	1.19	10.45	1.27	21.44	0.12	1.48	0.67
5.	Orissa	42.56	5.88	31.32	23.29	20.09	0.74	4.09	-	9.45	18.60	0.22	0.30
6.	West Bengal	84.90	0.36	70.57	0.10	0.36	1.51	9.79	0.62	47.55	3.12	4.90	5.89
7.	Assam, etc.	78.27	1.35	29.19	-	3.12	2.20	4.40	3.55	48.37	19.39	2.70	2.84
8.	Madhya Bharat, etc.	9.93	11.08	2.76	9.83	12.64	-	4.04	0.14	1.75	0.18	0.74	0.28
9.	Madhya Pradesh	8.09	42.81	23.03	22.53	9.88	1.66	10.09	0.34	5.66	2.84	1.56	0.81
10.	Hyderabad	12.84	56.39	28.87	1.15	12.70	-	34.10	1.02	9.65	8.56	3.67	5.30
11.	N. Bombay, etc.	1.14	67.64	17.74	2.31	3.87	2.86	5.05	0.49	1.86	8.89	1.07	0.36
12.	Bombay Deccan	3.15	63.60	81.00	0.71	18.34	1.34	8.58	0.19	3.29	17.19	1.15	-
13.	Madras	3.10	53.53	44.31	3.64	21.87	0.96	28.72	1.33	11.30	24.10	3.34	3.42
14.	Mysore, etc.	1.32	22.84	69.05	3.31	17.49	0.54	21.39	-	29.15	23.08	1.20	3.61
15.	All-India	29.94	25.08	26.33	6.06	10.41	2.30	13.03	0.74	12.16	8.15	2.18	2.01
	Agricultural families	31.16	27.12	30.77	6.47	11.84	2.16	13.19	0.82	12.70	8.54	2.78	1.67
	Non-agricultural families	29.04	26.94	26.89	4.56	10.18	2.07	11.96	0.73	10.71	7.17	1.63	1.71

TABLE 76. (Contd.)

Proportion of families reporting expenditure on different items of family expenditure in one week (C-XIII)

STATE	Milk	Ghee, butter	Other milk products	Vegetables	Fruits	Salt	Chillies	Other spices	Sugar	Gur (cane)	Other sugars
	23	24	25	26	27	28	29	30	31	32	33
1. Punjab, etc.	16.20	16.94	3.21	47.86	12.29	62.54	46.96	46.05	26.36	44.16	4.03
2. Rajasthan, Ajmer	6.35	17.04	1.76	31.65	11.59	57.61	52.22	31.10	20.06	40.52	7.41
3. Uttar Pradesh	9.74	11.60	2.54	58.55	9.19	76.36	51.24	52.02	12.30	39.90	4.21
4. Bihar	12.88	5.35	3.79	23.38	5.21	92.13	60.36	64.32	9.87	30.21	0.32
5. Orissa	8.41	6.99	2.31	46.13	5.21	80.28	62.95	45.98	9.23	25.30	2.38
6. West Bengal	19.69	4.06	5.78	81.98	9.79	90.47	94.06	86.15	16.46	43.80	6.15
7. Assam, etc.	10.23	3.34	2.34	51.56	15.13	80.33	40.06	47.94	20.10	56.89	0.57
8. Madhya Bharat, etc.	11.35	18.06	5.65	35.75	1.42	68.38	32.72	20.45	21.55	33.73	1.56
9. Madhya Pradesh	23.75	12.53	2.72	77.97	17.44	67.28	62.53	32.91	22.19	35.06	2.56
10. Hyderabad	12.43	14.74	3.80	50.48	9.51	79.01	71.47	33.29	8.63	37.36	7.13
11. N. Bombay, etc.	25.98	16.63	2.02	50.88	8.79	62.63	54.36	40.98	41.41	57.42	2.08
12. Bombay Deccan	21.46	8.14	6.17	39.69	9.51	81.94	52.14	48.49	33.58	66.37	0.52
13. Madras	9.35	5.50	5.76	44.03	14.32	87.41	73.29	50.41	9.37	25.60	7.88
14. Mysore, etc.	11.42	7.39	4.21	40.69	13.88	82.57	70.91	64.06	9.44	33.59	6.85
15. All-India	14.30	10.62	3.72	51.89	10.42	76.61	59.04	47.89	18.26	39.40	3.93
Agricultural families	14.48	10.58	8.39	52.18	11.91	77.56	58.12	50.26	22.10	48.50	4.29
Non-agricultural families	16.59	10.37	4.03	51.42	8.83	76.43	59.61	44.39	15.28	36.55	2.54

TABLE 76. (Contd.)

Proportion of families reporting expenditure on different items of family expenditure in one week (C-XIII)

STATE	Tea	Coffee	Other beverages	Prepared foods	Other food materials	Pan, supari, etc.	Tobacco (chewing)	Tobacco (smoking)	Liquors	Total
	34	35	36	37	38	39	40	41	42	43
1. Punjab, etc.	50.95	0.16	0.16	0.33	1.03	0.58	1.81	38.20	50.20	3.29
2. Rajasthan, Ajmer	17.19	-	0.81	4.99	4.79	2.52	4.99	50.96	9.88	1.81
3. Uttar Pradesh	8.75	-	0.48	1.38	3.33	19.41	33.69	55.07	2.64	3.45
4. Bihar	10.53	-	-	1.16	0.49	1.94	44.97	44.50	5.50	3.24
5. Orissa	9.37	-	0.45	1.41	2.01	41.15	37.87	18.68	2.75	5.13
6. West Bengal	18.28	-	0.36	7.86	2.24	68.70	37.03	71.25	6.72	3.49
7. Assam, etc.	39.70	-	-	0.28	2.98	52.06	45.24	50.57	12.86	6.04
8. Madhya Bharat, etc.	9.24	-	0.23	3.40	0.55	25.60	28.95	37.32	5.06	1.88
9. Madhya Pradesh	24.19	0.53	0.56	7.63	3.88	50.41	37.53	52.47	5.13	0.88
10. Hyderabad	17.05	0.88	0.20	1.29	0.82	33.56	25.34	59.31	27.78	11.21
11. N. Bombay, etc.	64.65	0.49	0.23	6.35	0.62	13.25	14.45	58.76	0.16	2.96
12. Bombay Deccan	60.01	2.11	0.66	0.88	8.83	45.07	51.01	31.96	0.16	-
13. Madras	13.91	14.51	0.47	15.00	3.83	59.85	55.61	33.07	0.11	1.11
14. Mysore, etc.	15.26	32.63	0.54	11.96	1.32	71.39	69.17	49.16	3.79	1.86
15. All-India	24.22	3.67	0.37	5.16	2.65	32.52	35.27	46.81	4.90	2.89
Agricultural families	29.49	3.80	0.33	5.47	3.35	37.21	37.90	47.76	4.76	2.82
Non-agricultural families	22.28	3.44	0.41	4.05	2.73	32.45	21.52	44.63	4.42	2.76

TABLE 77.
Proportion to families reporting expenditure on different items of family expenditure in four weeks (C-XIV)

STATE	Firewood	Charcoal	Kerosene	Other fuel & light	Men's clothing	Women's clothing	Children's clothing	Foot-wear	Soap	Hair oils	Other toilets
	1	2	3		5	6		8	9	10	11
1. Punjab, etc.	14.88	0.53	58.35	5.84	42.68	35.20	28.25	36.88	42.35	15.01	6.91
2. Rajasthan, Ajmer	10.58	0.35	43.65	5.90	43.65	33.11	23.84	38.46	12.80	6.10	4.54
3. Uttar Pradesh	7.21	0.68	49.02	6.59	37.50	27.58	22.66	14.52	12.98	7.21	1.46
4. Bihar	6.57	0.46	73.50	3.56	36.02	33.36	22.40	3.76	15.13	8.74	1.16
5. Orissa	9.45	-	40.92	1.34	29.24	16.37	18.90	0.74	5.80	1.26	1.79
6. West Bengal	14.53	7.86	72.60	4.69	35.26	30.89	16.87	8.28	29.06	7.97	5.10
7. Assam, etc.	6.53	-	75.99	4.33	37.36	33.59	34.30	9.87	49.57	24.64	6.61
8. Madhya Bharat, etc.	20.27	0.78	39.61	1.19	30.42	22.70	17.83	19.90	11.12	2.30	0.69
9. Madhya Pradesh	20.22	0.88	64.81	5.81	33.38	29.09	21.06	13.13	23.88	13.09	2.22
10. Hyderabad	13.25	0.68	57.27	2.17	22.49	25.00	22.89	10.33	9.85	8.97	2.79
11. N. Bombay, etc.	12.99	0.52	56.90	13.61	31.67	24.19	23.86	15.95	30.40	24.28	3.22
12. Bombay Deccan	6.20	1.04	66.67	0.47	25.41	19.33	19.19	8.20	15.87	2.30	0.71
13. Madras	14.17	0.83	53.53	4.94	30.29	27.29	22.32	4.94	16.37	8.09	1.93
14. Mysore, etc.	12.92	0.84	71.88	10.16	37.20	24.76	23.92	4.27	50.30	3.37	2.58
15. All-India	12.15	1.02	58.19	5.48	34.11	27.81	22.60	13.39	21.80	9.79	2.69
Agricultural families	10.43	0.82	63.63	4.90	20.58	12.95	7.33	16.11	25.26	10.72	3.08
Non-agricultural families	14.10	1.29	25.65	3.71	24.35	20.50	16.45	9.20	17.50	8.54	2.24

TABLE 77. (contd.)

Proportion to families reporting expenditure on different items of family expenditure in four weeks (C-XIV)

STATE	Books, periodicals, etc.	Medicines	Domestic service	Enter-tainment	Travelling	Utensils & furniture	Gifts, etc.	Payments in ceremonies	Other capital expenditure	Other expenditure
	12	13	14	15	16	17	18	19	20	21
1. Punjab, etc.	6.70	22.53	3.58	9.25	34.00	9.13	7.85	10.73	4.11	17.23
2. Rajasthan, Ajmer	6.80	9.48	3.43	3.43	17.79	12.30	14.42	5.09	2.17	4.84
3. Uttar Pradesh	5.89	12.76	7.07	6.37	16.05	5.97	6.37	5.31	4.93	13.32
4. Bihar	4.37	15.51	9.20	1.45	11.05	10.79	5.61	8.39	3.30	12.21
5. Orissa	6.55	11.68	3.65	2.98	11.31	3.94	5.28	14.58	1.86	49.63
6. West Bengal	9.79	28.91	13.80	7.29	16.25	11.77	10.10	9.06	7.55	9.22
7. Assam, etc.	9.02	17.76	4.76	9.23	13.00	12.86	7.53	4.83	1.70	12.43
8. Madhya Bharat, etc.	0.64	6.80	4.27	3.58	7.49	4.23	2.62	7.77	1.19	13.92
9. Madhya Pradesh	4.47	15.16	9.31	15.16	23.06	9.41	3.56	6.88	4.44	8.41
10. Hyderabad	3.53	8.90	3.80	10.46	14.54	10.46	3.13	9.04	3.33	27.11
11. N. Bombay, etc.	3.55	13.31	3.58	6.64	24.90	12.83	8.40	7.94	0.94	13.70
12. Bombay Deccan	4.44	9.46	6.27	4.74	18.01	3.34	7.87	5.26	1.23	6.52
13. Madras	4.77	10.77	7.92	11.00	25.41	11.92	4.35	10.00	4.97	23.72
14. Mysore, etc.	16.53	22.12	8.23	10.76	33.53	10.04	14.54	11.06	7.09	26.44
15. All-India	5.74	14.21	6.70	7.50	19.55	9.33	6.81	8.05	3.69	15.95
Agricultural families	7.15	16.74	8.13	8.15	22.34	10.66	8.68	8.98	4.23	15.91
Non-agricultural families	4.03	10.52	5.51	6.15	17.40	6.54	4.59	5.95	3.22	14.98

TABLE 78.

Cumulative frequency distribution of weekly expenditure on different items of family expenditure, by agricultural and non-agricultural families (C-XIII)

Weekly expenditure Rs.	Rice				Wheat (grain and flour)				Millets, cereals and rationed foodgrains			
	Agricultural families		Non-agricultural families		Agricultural families		Non-agricultural families		Agricultural families		Non-agricultural families	
	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value
- 0.25	1.91	0.07	2.24	0.11	3.04	0.13	3.95	0.22	2.33	0.06	1.93	0.09
- 0.50	7.37	0.46	9.19	0.84	9.27	0.65	10.53	1.05	5.03	0.24	5.80	0.47
- 0.75	10.85	0.84	13.14	1.46	13.74	1.22	17.60	2.40	7.64	0.48	8.55	0.89
- 1.00	20.13	2.29	24.50	4.02	26.84	3.66	34.21	7.01	13.97	1.35	19.41	3.30
- 1.50	24.77	3.26	29.57	5.59	33.55	5.36	44.08	10.81	18.72	2.24	25.65	5.18
- 2.00	37.86	7.35	43.02	11.59	48.24	10.84	57.89	18.44	31.10	5.66	39.70	11.42
- 1.00	48.14	11.84	55.94	19.69	58.79	16.36	66.12	24.98	41.71	9.83	53.38	19.99
- 4.00	57.66	17.68	66.77	29.18	68.05	23.02	74.67	34.26	50.84	14.78	65.06	30.04
- 5.00	64.54	23.04	74.61	37.94	74.12	28.53	81.58	43.88	60.34	21.24	72.64	38.31
- 6.OQ	68.19	26.39	79.16	44.01	78.59	33.45	84.21	48.15	65.74	25.67	78.66	46.23
- 7.00	73.99	32.71	83.50	50.81	82.27	38.17	86.51	52.60	70.58	30.34	83.50	53.67
- 8.00	77.80	37.48	86.63	56.49	84.35	41.23	88.65	57.28	74.49	34.66	87.14	60.18
- 9.00	79.95	40.50	88.65	60.53	87.06	45.79	89.97	60.58	76.54	37.21	89.15	64.18
-10.00	84.42	47.62	92.91	70.23	91.53	54.22	94.08	72.10	83.90	47.54	93.31	73.43
above Rs. 10	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Total=100	1207	7572	1339	5828	626	3303	608	2139	1074	7667	1345	5969

TABLE 78. (contd.)

Cumulative frequency distribution of weekly expenditure on different items of family expenditure, by agricultural and non-agricultural families (C-XIII)

Weekly expenditure Rs.	Arhar (seed and pulse)				Gram (seed, pulse and flour)				Other pulse and pulse seed			
	Agricultural families		Non-agricultural families		Agricultural families		Non-agricultural families		Agricultural families		Non-agricultural families	
	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value
- 0.25	13.53	1.80	17.84	3.55	11.26	1.34	20.69	3.12	11.56	1.42	24.71	4.93
- 0.50	33.77	7.38	45.96	16.02	32.59	6.98	43.56	10.72	29.61	6.45	52.47	17.63
- 0.75	46.71	12.93	58.46	24.39	46.25	12.22	54.27	16.05	45.11	12.98	62.21	24.63
- 1.00	65.03	24.37	76.56	41.83	64.16	22.34	73.32	29.89	61.63	23.16	77.47	40.53
- 1.50	72.34	30.61	83.99	51.67	71.84	27.99	79.86	36.50	71.66	31.57	84.01	49.60
- 2.00	84.07	45.23	92.58	68.42	82.77	40.40	89.47	50.47	84.50	47.13	92.44	67.24
- 1.00	90.30	55.86	96.09	78.30	89.42	50.92	94.19	60.02	90.34	57.08	96.08	77.40
- 4.00	93.63	63.65	98.70	88.00	92.83	58.51	96.19	65.72	94.16	66.09	97.82	84.36
- 5.00	96.41	72.50	99.22	90.58	95.22	65.32	97.46	70.25	96.19	72.30	98.98	90.43
- 6.OQ	97.13	75.21	99.48	92.02	95.56	66.43	97.82	71.86	96.95	75.14	99.13	91.24
- 7.00	97.84	78.33	99.61	92.92	96.25	69.10	98.19	73.61	97.46	77.31	99.42	93.41
- 8.00	97.84	78.33	99.61	92.92	96.93	72.10	98.37	74.69	98.09	80.47	99.42	93.41
- 9.00	98.08	79.66	99.61	92.92	97.10	72.91	98.37	74.69	98.09	80.47	99.42	93.41
-10.00	98.80	84.25	99.74	94.21	98.29	79.73	98.73	77.30	98.35	82.07	99.71	96.51
above Rs. 10	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Total=100	835	1308	768	777	586	1017	551	743	787	1250	688	645

TABLE 78. (contd.)

Cumulative frequency distribution of weekly expenditure on different items of family expenditure, by agricultural and non-agricultural families (C-XIII)

Weekly expenditure Rs.	Oil seeds				Edible oils (including vanaspati)				Mutton and other meats			
	Agricultural families		Non-agricultural families		Agricultural families		Non-agricultural families		Agricultural families		Non-agricultural families	
	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value
- 0.25	33.79	7.57	40.68	12.70	25.34	4.50	38.42	10.93	15.51	2.47	26.20	6.32
- 0.50	60.77	20.69	69.23	32.73	49.08	13.88	65.97	29.30	36.07	9.69	52.76	20.91
- 0.75	74.58	31.46	81.03	46.08	63.01	22.74	78.18	42.35	46.20	15.14	61.88	28.60
- 1.00	83.47	41.37	88.03	57.64	75.95	34.18	87.74	56.69	67.19	31.10	81.41	51.91
- 1.50	89.23	50.03	92.99	68.08	84.46	44.62	93.03	67.63	75.89	40.33	86.79	60.73
- 2.00	94.04	60.54	96.75	79.90	90.74	55.57	96.34	77.48	87.99	58.59	95.26	80.69
- 1.00	97.28	70.27	98.80	89.16	95.26	66.53	98.44	85.97	93.23	69.80	98.21	90.48
- 4.00	98.01	73.30	99.15	91.21	96.72	71.54	99.05	89.52	96.25	78.71	99.43	96.14
- 5.00	98.75	77.30	99.49	94.08	97.82	76.25	99.54	93.24	97.83	84.75	99.71	97.82
- 6.OQ	98.85	78.03	99.83	97.42	98.37	79.18	99.73	94.98	98.72	88.77	99.93	99.33
- 7.00	99.27	81.15	99.83	97.42	98.62	80.72	99.78	95.50	99.01	90.37	99.93	99.33
- 8.00	99.37	82.12	99.83	97.42	98.96	83.12	99.81	95.80	99.46	93.10	100.00	100.00
- 9.00	99.37	82.12	100.00	100.00	99.14	84.57	99.83	96.13	99.51	93.45	-	-
-10.00	99.69	85.69	-	-	99.34	86.38	99.90	97.23	99.56	93.83	-	-
above Rs. 10	100.00	100.00	-	-	100.00	100.00	100.00	100.00	100.00	100.00	-	
Total=100	956	825	585	348	5585	6104	4102	2635	2024	2620	1393	1149

TABLE 78. (contd.)

Cumulative frequency distribution of weekly expenditure on different items of family expenditure, by agricultural and non-agricultural families (C-XIII)

Weekly expenditure Rs.	Milk				Ghee and butter				Other milk products			
	Agricultural families		Non-agricultural families		Agricultural families		Non-agricultural families		Agricultural families		Non-agricultural families	
	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value
- 0.25	18.40	2.20	21.47	3.93	4.82	0.30	5.41	0.37	37.57	9.22	54.55	22.59
- 0.50	38.57	7.77	47.50	14.27	13.73	1.60	16.71	2.09	67.63	27.04	85.45	52.71
- 0.75	44.38	10.22	56.32	19.64	19.30	2.84	27.06	4.48	74.57	33.27	88.48	57.11
- 1.00	63.33	21.05	71.62	32.34	33.95	7.59	44.24	10.26	84.97	46.34	92.12	64.89
- 1.50	70.09	26.41	80.00	42.20	44.34	12.17	55.53	15.18	88.44	52.47	95.15	74.62
- 2.00	82.14	39.98	89.56	57.81	59.18	21.71	69.88	24.76	93.64	65.59	98.79	89.17
- 1.00	86.47	47.04	93.82	67.42	69.20	30.73	81.41	35.13	96.53	75.76	98.79	89.17
- 4.00	92.02	59.17	96.47	75.70	77.37	41.00	86.36	41.65	98.27	84.51	99.39	93.91
- 5.00	92.96	61.84	97.65	80.58	87.01	56.60	90.59	48.67	98.84	87.83	100.00	100.00
- 6.OQ	94.32	66.27	98.38	84.16	89.61	61.58	92.00	51.47	99.42	92.40	-	-
- 7.00	96.89	76.92	98.82	86.87	91.65	66.03	92.71	53.12	99.42	92.40	-	-
- 8.00	97.70	80.80	99.12	88.94	93.14	69.86	94.59	58.12	99.42	92.40	-	-
- 9.00	97.83	81.54	99.12	88.94	94.43	73.68	95.06	59.51	99.42	92.40	-	-
-10.00	98.24	83.98	99.12	88.94	96.10	79.16	96.00	62.69	100.00	100.00	-	-
above Rs. 10	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	-	-	-	-
Total=100	739	1228	680	773	539	1641	425	1258	173	132	165	74

TABLE 78. (contd.)

Cumulative frequency distribution of weekly expenditure on different items of family expenditure, by agricultural and non-agricultural families (C-XIII)

Weekly expenditure Rs.	Vegetables and fruits				Salt				Chillies and other spices			
	Agricultural families		Non-agricultural families		Agricultural families		Non-agricultural families		Agricultural families		Non-agricultural families	
	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value
- 0.25	30.97	7.25	41.72	12.88	76.45	35.28	90.45	65.57	45.26	11.48	58.47	21.23
- 0.50	57.14	21.31	69.42	33.40	89.77	53.03	97.13	81.98	67.99	26.26	79.75	42.51
- 0.75	66.49	29.67	76.95	41.99	92.37	58.41	98.15	85.98	76.65	35.11	87.66	54.83
- 1.00	81.02	46.01	89.96	63.19	97.32	73.32	99.68	94.64	86.98	50.02	94.02	69.01
- 1.50	86.70	55.30	93.44	71.13	97.95	75.89	99.81	95.58	91.77	59.65	96.69	77.31
- 2.00	94.34	73.16	97.73	84.92	99.04	82.50	99.87	96.32	95.86	71.28	98.73	86.44
- 1.00	97.37	83.22	98.78	89.62	99.37	85.29	99.90	96.87	97.99	79.78	99.44	90.96
- 4.00	98.93	90.33	99.27	92.66	99.49	86.85	99.94	97.61	98.64	83.43	99.62	92.59
- 5.00	99.33	92.64	99.76	96.73	99.75	90.64	99.97	98.53	99.28	88.01	99.74	93.90
- 6.OQ	99.51	93.93	99.80	97.14	99.80	91.54	99.97	98.53	99.42	89.27	99.81	94.84
- 7.00	99.63	94.96	99.88	98.09	99.87	93.11	99.97	98.53	99.51	90.16	99.88	96.13
- 8.00	99.69	95.51	99.88	98.09	99.90	93.73	100.00	100.00	99.66	91.85	99.88	96.13
- 9.00	99.69	95.51	99.92	98.64	99.90	93.73	-	-	99.66	91.85	99.88	96.13
-10.00	99.85	97.33	100.00	100.00	99.92	94.51	-	-	99.82	94.25	99.93	97.21
above Rs. 10	100.00	100.00	-	-	100.00	100.00	-	-	100.00	100.00	100.00	100.00
Total=100	3271	2718	2469	1474	3958	1284	3132	543	5530	3745	4262	1861

TABLE 78. (contd.)

Cumulative frequency distribution of weekly expenditure on different items of family expenditure, by agricultural and non-agricultural families (C-XIII)

Weekly expenditure Rs.	Sugar				Gur (cane)				Other sugars			
	Agricultural families		Non-agricultural families		Agricultural families		Non-agricultural families		Agricultural families		Non-agricultural families	
	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value
- 0.25	10.11	1.34	12.30	1.81	15.77	2.02	27.92	5.62	22.83	3.90	35.19	8.72
- 0.50	25.71	5.61	30.83	7.64	34.68	7.50	49.50	15.75	45.21	12.03	62.04	25.29
- 0.75	34.04	9.24	42.17	13.17	47.93	13.34	62.59	25.08	55.71	17.94	67.59	30.27
- 1.00	54.26	20.97	60.38	25.71	63.69	23.41	78.62	42.05	71.69	30.56	85.19	52.84
- 1.50	66.58	31.01	69.97	34.90	74.64	32.66	86.17	52.66	79.00	38.29	87.96	57.67
- 2.00	81.47	48.64	82.59	51.93	84.41	45.09	92.99	66.89	89.04	54.22	96.30	79.77
- 1.00	91.13	63.94	91.37	67.96	90.95	56.25	96.06	75.60	93.15	63.55	97.22	83.04
- 4.00	95.04	72.94	95.53	78.47	94.10	64.00	97.66	82.01	94.52	68.09	98.15	88.02
- 5.00	96.99	78.76	98.08	87.01	96.53	71.74	98.80	87.87	97.72	81.33	100.00	100.00
- 6.OQ	98.05	82.61	98.56	89.01	97.12	74.00	98.86	88.31	98.17	83.46	-	-
- 7.00	98.76	85.58	99.04	91.27	97.48	75.64	99.13	90.34	98.63	85.82	-	-
- 8.00	99.11	87.32	99.36	93.04	97.75	77.04	99.47	93.23	98.63	85.82	-	-
- 9.00	99.38	88.75	99.36	93.04	97.88	77.80	99.53	93.89	98.63	85.82	-	-
-10.00	99.65	90.43	99.52	94.20	98.65	82.81	99.57	95.29	98.63	85.82	-	-
above Rs. 10	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	-	-
Total=100	1128	1782	626	862	2220	3384	1497	1380	219	264	108	80

TABLE 78. (contd.)

Cumulative frequency distribution of weekly expenditure on different items of family expenditure, by agricultural and non-agricultural families (C-XIII)

Weekly expenditure Rs.	Tea				Coffee and other beverages				Prepared foods, drinks, etc			
	Agricultural families		Non-agricultural families		Agricultural families		Non-agricultural families		Agricultural families		Non-agricultural families	
	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value
- 0.25	28.90	8.16	36.25	12.14	28.44	4.80	46.20	14.28	37.64	6.27	41.98	5.20
- 0.50	70.83	32.46	76.34	40.84	49.29	14.20	68.99	31.66	57.68	14.21	58.70	10.35
- 0.75	82.92	42.57	86.75	54.47	64.45	24.95	82.28	47.93	63.92	18.03	64.85	13.44
- 1.00	86.98	51.69	91.68	64.15	76.30	37.15	89.24	60.50	76.61	29.45	75.43	20.83
- 1.50	92.29	63.00	95.18	73.26	88.15	53.19	93.67	71.30	80.18	33.85	79.52	24.94
- 2.00	94.35	69.40	97.37	81.58	90.05	56.99	96.20	80.47	89.09	49.38	84.64	31.95
- 1.00	98.74	87.38	99.67	93.47	95.26	71.01	99.37	95.86	93.32	59.77	88.74	39.94
- 4.00	99.07	89.41	99.78	94.31	97.16	78.54	100.00	100.00	95.77	68.20	91.13	46.06
- 5.00	99.60	93.60	99.78	94.31	98.10	83.53	-	-	96.88	73.27	93.86	55.57
- 6.OQ	99.67	94.20	99.89	95.48	99.05	88.88	-	-	97.77	77.77	95.22	61.05
- 7.00	99.80	95.72	99.89	95.48	99.53	92.37	-	-	98.00	79.04	95.90	64.28
- 8.00	99.80	95.72	99.89	95.48	99.53	92.37	-	-	98.44	82.08	96.59	68.00
- 9.00	99.87	96.71	99.89	95.48	99.53	92.37	-	-	98.44	82.08	96.59	68.00
-10.00	99.87	96.71	99.89	95.48	99.53	92.37	-	-	99.33	90.10	97.61	75.32
above Rs. 10	100.00	100.00	100.00	100.00	100.00	100.00	-	-	100.00	100.00	100.00	100.00
Total=100	1505	911	913	443	211	201	158	85	449	493	293	410

TABLE 78. (contd.)

Cumulative frequency distribution of weekly expenditure on different items of family expenditure, by agricultural and non-agricultural families (C-XIII)

Weekly expenditure	Pan, supari, etc.				Tobacco (chewing and smoking)				Liquors, wines & other intoxicants			
	Agricultural families		Non-agricultural families		Agricultural families		Non-agricultural families		Agricultural families		Non-agricultural families	
Rs.	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value
- 0.25	41.28	11.42	51.58	19.42	44.66	12.70	53.60	19.28	16.02	1.24	20.82	2.92
- 0.50	67.30	28.73	78.35	43.93	70.99	31.16	78.02	42.29	31.78	4.21	42.66	9.86
- 0.75	76.83	38.51	86.47	55.24	77.15	37.87	83.66	50.45	36.43	5.56	50.85	13.69
- 1.00	87.20	53.70	94.59	71.45	88.27	55.02	93.14	69.68	50.65	11.28	67.24	24.80
- 1.50	92.36	64.21	96.92	78.00	92.32	63.59	96.24	78.38	56.59	14.55	74.06	31.14
- 2.00	96.21	75.42	98.95	86.13	96.30	75.74	98.34	86.90	67.96	23.73	84.64	45.87
- 1.00	98.05	83.00	99.55	89.46	98.11	83.51	99.19	91.29	78.81	35.79	90.44	57.08
- 4.00	99.05	88.94	99.77	91.13	98.93	88.57	99.52	94.00	84.50	44.43	92.83	63.76
- 5.00	99.37	91.32	99.77	91.13	99.36	91.98	99.82	97.05	88.89	53.36	96.25	75.69
- 6.OQ	99.58	93.12	99.77	91.13	99.62	94.21	99.85	97.52	91.99	60.98	97.27	79.72
- 7.00	99.84	95.71	99.85	92.16	99.71	95.20	99.93	98.62	93.54	65.44	97.95	83.06
- 8.00	99.84	95.71	99.85	92.16	99.80	96.35	99.96	99.21	94.83	69.68	98.64	86.88
- 9.00	99.89	96.38	99.85	92.16	99.82	96.38	99.96	99.21	95.87	73.55	98.64	86.88
-10.00	99.95	97.19	99.92	93.69	99.89	97.78	100.00	100.00	97.42	80.00	99.32	91.65
above Rs. 10	100.00	100.00	100.00	100.00	100.00	100.00	-	-	100.00	100.00	100.00	100.00
Total=100	1899	1245	1330	634	4371	2742	2711	1272	387	930	293	419

TABLE 79.

Cumulative frequency distribution of monthly expenditure on different items of family expenditure, by agricultural and non-agricultural families (C-XIV)

Weekly expenditure Rs.	Firewood				Charcoal, other fuel and light				Kerosene			
	Agricultural families		Non-agricultural families		Agricultural families		Non-agricultural families		Agricultural families		Non-agricultural families	
	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value
- 1	14.91	2.63	20.24	4.75	51.03	18.97	58.54	21.43	75.73	41.14	82.23	52.01
- 2	31.13	8.34	43.80	15.81	71.03	33.85	76.59	34.64	87.80	54.26	91.39	63.59
- 3	39.62	12.83	54.10	23.06	77.59	41.15	80.98	39.46	90.36	58.42	93.54	67.68
- 4	52.45	21.87	65.27	33.55	84.74	50.90	84.88	45.18	91.96	61.90	95.20	71.89
- 5	66.60	34.33	75.04	45.02	89.31	60.51	87.80	50.54	92.52	63.41	96.04	74.52
- 6	71.51	39.51	82.55	55.59	91.38	65.13	89.76	54.82	95.57	73.35	97.41	79.72
- 7	74.91	43.70	84.47	58.75	93.45	70.51	91.22	58.57	97.14	79.32	97.94	82.11
- 8	80.76	51.94	90.23	69.56	94.48	73.59	94.15	67.14	98.34	84.54	98.63	85.57
- 9	81.89	53.74	90.75	70.67	95.86	78.21	94.15	67.14	98.65	86.05	98.78	86.41
- 10	90.56	69.03	95.64	82.14	97.59	84.62	96.10	74.29	98.80	86.88	99.02	87.96
- 11	91.32	70.49	95.99	83.04	97.59	94.62	96.10	74.29	98.86	87.25	99.02	87.96
- 12	93.77	75.67	96.86	85.50	97.93	86.15	97.07	78.57	99.14	89.06	99.22	89.44
13-17	96.79	83.48	98.25	90.58	98.97	92.18	99.02	89.82	99.57	92.66	99.71	94.09
18-22	98.87	90.76	99.30	95.37	100.00	100.00	99.02	89.82	99.72	94.29	99.76	94.64
23 & above	100.00	100.00	100.00	100.00	-	-	100.00	100.00	100.00	100.00	100.00	100.00
Total=100	530	3009	573	2441	290	780	205	560	3247	5977	2043	3230

TABLE 79. (Contd.)

Cumulative frequency distribution of monthly expenditure on different items of family expenditure, by agricultural and non-agricultural families (C-XIV)

Weekly expenditure Rs.	Men's clothing				Women's clothing				Children's clothing			
	Agricultural families		Non-agricultural families		Agricultural families		Non-agricultural families		Agricultural families		Non-agricultural families	
	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value
-	1.56	0.12	3.21	0.36	1.99	0.12	4.05	0.37	10.33	1.43	15.73	3.10
-	7.27	1.00	11.62	2.24	5.72	0.59	9.76	1.42	24.24	5.28	37.72	10.58
-	15.13	2.82	23.15	6.12	10.54	1.49	15.60	3.02	38.36	11.15	49.85	19.53
-	22.89	5.22	33.77	10.88	14.81	2.55	20.12	4.68	48.62	16.84	60.98	28.30
-	33.58	9.35	48.80	19.29	22.82	5.05	30.24	9.31	61.43	25.71	73.89	41.02
-	40.51	12.56	54.31	28.00	30.16	7.79	37.74	13.44	66.89	30.25	79.82	48.04
-	45.00	14.99	59.72	27.24	35.16	9.97	44.41	17.71	70.74	33.99	83.23	52.75
8-12	68.28	32.83	82.67	52.05	58.82	24.85	74.88	45.93	87.77	56.60	93.62	72.78
13-17	78.97	44.94	90.18	64.84	72.25	37.33	85.72	60.43	93.01	67.44	96.88	82.31
18-22	86.68	56.75	95.59	74.29	80.98	48.21	92.14	72.22	95.85	75.21	97.92	86.29
23-27	90.39	63.93	96.19	78.72	86.27	56.45	94.17	76.79	97.53	80.96	98.52	89.12
28-32	93.37	70.86	97.50	82.69	90.85	64.96	96.31	82.68	98.33	84.33	99.26	93.36
33-37	94.34	73.48	97.80	83.87	92.47	68.50	97.26	85.68	98.40	84.68	99.70	96.49
38-42	95.95	78.25	98.60	87.50	94.94	74.55	97.98	88.28	98.69	86.30	99.85	97.66
43 & above	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Total=100	2049	26530	998	8910	1661	26675	840	9170	1374	9918	674	3420

TABLE 79. (Contd.)

Cumulative frequency distribution of monthly expenditure on different items of family expenditure, by agricultural and non-agricultural families (C-XIV)

Weekly expenditure Rs.	Footwear (including repairs)				Soap				Hair oils and other toilets			
	Agricultural families		Non-agricultural families		Agricultural families		Non-agricultural families		Agricultural families		Non-agricultural families	
	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value
-	5.60	0.67	10.08	1.70	72.52	44.48	73.08	46.58	65.63	35.08	72.40	41.50
-	12.55	2.34	16.35	3.81	89.36	65.14	88.01	65.60	84.23	54.97	85.29	56.29
-	21.56	5.60	31.61	11.53	93.71	73.14	93.58	76.27	91.62	66.82	92.76	69.13
-	32.16	10.70	45.50	20.91	95.89	78.48	96.23	83.02	94.89	73.80	95.48	75.36
-	47.50	19.64	63.49	36.08	97.05	82.05	97.77	87.91	97.02	79.50	96.83	79.25
-	55.54	25.44	71.66	44.35	97.90	85.19	98.05	88.98	97.73	81.78	98.64	85.47
-	60.90	29.95	76.29	49.82	97.98	85.53	98.19	89.60	98.15	83.37	98.64	85.47
-	66.14	34.99	82.02	57.54	98.84	89.72	99.44	96.00	98.86	86.41	99.77	90.66
-	69.67	38.82	83.11	59.19	98.84	89.72	99.58	96.80	98.86	86.41	99.77	90.66
- 1	76.49	47.03	88.01	67.46	98.99	90.67	99.86	98.58	99.29	88.69	99.77	90.66
- 1	78.82	49.44	89.37	69.99	98.99	90.67	99.86	98.58	99.29	88.69	99.77	90.66
- 1	81.97	54.72	91.83	74.95	99.46	94.10	99.86	98.58	99.29	88.69	99.77	90.66
13-17	90.26	68.89	96.19	85.52	99.85	97.86	100.00	100.00	99.29	88.69	99.77	90.66
18-22	95.37	80.89	98.91	94.44	99.92	98.86	-	-	99.57	91.42	99.77	90.66
23 & above	100.00	100.00	100.00	100.00	100.00	100.00	-	-	100.00	100.00	100.00	100.00
Total=100	821	6824	367	2176	1288	2100	717	1125	704	1317	442	771

TABLE 79. (Contd.)

Cumulative frequency distribution of monthly expenditure on different items of family expenditure, by agricultural and non-agricultural families (C-XIV)

Weekly expenditure Rs.	Books, periodicals, education, etc.				Medicines and medical service				Domestic and personal services			
	Agricultural families		Non-agricultural families		Agricultural families		Non-agricultural families		Agricultural families		Non-agricultural families	
	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value
-	29.40	4.44	42.07	10.57	15.94	1.18	20.42	2.34	23.61	1.26	37.89	4.23
-	46.43	9.58	64.63	21.90	29.43	3.17	34.11	5.49	35.66	2.54	53.30	7.67
-	56.32	14.06	71.34	26.95	36.69	4.78	41.53	8.04	42.65	3.65	59.91	9.88
-	64.01	18.71	78.05	33.69	43.02	6.65	51.04	12.41	48.67	4.93	65.64	12.43
-	70.05	23.27	82.93	39.82	54.98	11.06	63.81	19.73	54.70	6.53	72.69	16.36
-	71.43	24.51	83.54	40.74	58.03	12.42	67.05	21.97	59.04	7.92	74.89	17.84
-	75.55	28.87	85.37	43.95	59.32	13.08	69.37	23.83	61.20	8.73	75.77	18.53
8-12	87.64	46.25	93.29	63.71	71.86	22.18	82.60	38.93	69.16	12.72	82.38	25.50
13-17	93.13	58.44	95.12	70.75	78.19	29.11	87.24	46.84	76.87	18.90	87.67	34.15
18-22	95.33	65.04	97.56	83.00	83.12	36.52	92.58	58.99	81.69	23.91	89.43	38.03
23-27	95.60	66.07	98.78	90.51	87.81	45.15	94.66	64.95	84.58	27.66	91.63	43.93
28-32	97.53	74.87	99.39	95.10	90.50	51.15	96.29	70.71	87.23	31.83	93.39	49.83
33-37	97.80	76.36	100.00	100.00	91.44	53.54	96.29	70.71	88.92	35.04	94.27	53.32
38-42	98.08	78.10	-	-	92.97	58.01	96.75	72.84	90.84	39.19	96.04	61.28
43 & above	100.00	100.00	-	-	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Total=100	364	2411	164	653	853	11550	431	3755	415	7805	227	2035

TABLE 79. (Contd.)

Cumulative frequency distribution of monthly expenditure on different items of family expenditure, by agricultural and non-agricultural families (C-XIV)

Weekly expenditure Rs.	Entertainment				Travelling				Other household expenditure			
	Agricultural families		Non-agricultural families		Agricultural families		Non-agricultural families		Agricultural families		Non-agricultural families	
	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value
-	38.46	6.88	54.76	18.90	17.89	2.40	21.32	3.84	27.25	2.43	31.60	3.99
-	56.97	13.50	74.60	32.60	37.46	7.64	44.32	12.12	43.55	5.34	49.79	8.59
-	63.22	16.85	81.35	39.59	48.86	12.23	54.28	17.50	50.47	7.19	56.78	11.23
-	70.91	22.36	86.91	47.26	56.14	16.13	62.55	23.47	57.18	9.59	61.76	13.75
-	83.17	33.32	90.48	53.43	68.60	24.48	73.07	32.94	66.52	13.75	70.19	19.08
-	85.34	35.64	92.46	57.54	71.23	26.59	77.98	38.24	69.19	15.18	73.31	21.44
-	85.34	35.64	92.86	58.49	73.42	28.65	80.08	40.89	70.56	16.04	75.80	23.64
8-12	92.31	48.02	98.41	76.99	85.70	44.93	91.30	60.37	81.72	25.89	85.82	35.78
13-17	94.71	54.51	98.81	78.77	90.09	53.81	94.25	68.25	86.37	32.09	89.14	41.95
18-22	95.67	57.87	98.81	78.77	93.77	63.68	97.05	78.33	89.81	38.19	91.70	48.42
23-27	96.63	62.25	99.21	82.19	95.44	68.19	98.32	83.99	91.39	41.69	93.36	53.61
28-32	97.60	67.41	99.21	82.19	96.93	75.17	98.60	85.45	93.33	46.91	95.30	60.96
33-37	97.60	67.41	99.21	82.19	97.11	76.02	98.74	86.34	94.34	50.08	96.33	65.50
38-42	98.08	70.85	99.21	82.19	97.98	80.72	99.16	89.37	95.75	55.10	97.79	72.84
43 & above	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Total=100	416	2326	252	730	1140	8506	713	3959	2473	27720	1446	11447

14. SAMPLING ERRORS.

14.1 The statistics or estimates presented in this Report have been based on a sample of about 10,000 families drawn from a sample of about 600 villages distributed all over India, a sample of about 16 families having been investigated from each selected village. The estimates for each individual state or group of states are based on very much smaller samples. It is therefore to be expected that the estimates will be liable to considerable sampling errors. In this Chapter, we shall present sampling errors of a few items.

14.2 Particulars of the sampling design of the sample and of the method of estimation are given in sections 12 to 21 of Chapter V of the earlier Report. It will be seen that the basis of the state and all-India estimates is the village averages in which the agricultural and the, non-agricultural families have been appropriately weighted. The state and the all-India estimates are simple averages of the village averages. The sampling errors of the state and the all-India estimates have, therefore, been derived directly from the village averages.

14.3 The sampling design was considerably complicated and involved stratifying the country into 250 ultimate strata and the use of five different sampling schemes. The calculation of sampling errors involves considerable computational labour. In order to minimise this labour, we have taken into account only 25 strata. They are mostly individual states, though in a few states we have distinguished two or more strata according to the different sampling schemes employed. In the following are the strata recognized while calculating the sampling errors together with the number of villages in each stratum.

14.4 In view of the fact that we have not taken, into account the whole of the scheme of stratification into 250 ultimate strata, the sampling errors calculated by us and presented in the following tables will be somewhat larger than the actual errors to which the estimates are liable. It seems unlikely however that the difference will be considerable.

14.5 The calculation and presentation of sampling errors of all the several items for which we have presented estimates in the preceding Chapters will be formidable. We have therefore, chosen only a few important items to calculate their sampling errors. It is hoped that they will be sufficient to illustrate the magnitudes of errors which estimates of different types of items are liable. In all cases the sampling errors are shown as percentages of the respective estimates so as to indicate the relative magnitudes of sampling errors.

14.6 It should be understood that the sampling errors indicate the margins within which to expect similar estimates derived from a second sample of similar design and size and investigated under similar conditions. For this purpose, it is appropriate to take this margin to be, approximately three times the sampling errors shown in the following tables. It should be noted that in view of the fact that there might be other sources of error affecting the estimates and not taken account of in the calculation of sampling errors, the sampling errors do not, indicate, margins within which the 'true values', of which the statistics presented are 'estimates', might lie.

	Stratum	Number of villages
1.	Punjab	26
2.	PEPSU, Delhi, Himachal Pradesh	12
3.	Rajasthan, (Sampling scheme No. 2)	19
4.	Rajasthan, (Sampling scheme No. 3)	10
5.	Ajmer	2
6.	Uttar Pradesh (Sampling scheme Nos; 1, 2 and 4)	29
7.	Uttar Pradesh (Sampling scheme No. 5)	49
8.	Bihar	54
9.	Orissa (Sampling scheme No. 1)	11
10.	Orissa. (Sampling scheme Nos. 2 and 3)	10
11.	West Bengal	30
12.	Assam, Manipur, Tripura	20
13.	Andaman Nicobar	2
14.	Madhya Bharat, Bhopal	18
15.	Vindhya Pradesh	16
16.	Madhya Pradesh (Sampling scheme No. 1)	3
17.	Madhya Pradesh (Sampling scheme No. 4)	24
18.	Madhya Pradeth (Sampling scheme No. 5)	23
19.	Hyderabad (Sampling scheme No. 1)	12
20.	Hyderabad (Sampling scheme No. 3)	11
21.	North Bombay	32
22.	Saurashtra, Kutch	16
23.	Bombay Deccan	57
24.	Madras	73
25.	Mysore, Travancore-Cochin, Coorg	26

TABLE 80.

Standard errors of means expressed as their percentages (Sch. B)

	STATE	Expenditure on				Residential house		Loans received	No. of animals owned.					
		No. of villages	land improvement Rs.	New construction Rs.	Total real estate improvement Rs.	No. of rooms	Area under roof (sq.ft.)	Rs.	Bullocks	Cows	He-Buffaloes	She-Buffaloes	Sheep	Goat
1.	Punjab, etc.	38	33.05	23.20	18.73	5.17	7.62	14.72	11.05	10.78	28.91	11.34	50.75	35.95
2.	Rajasthan, Ajmer	31	38.37	28.79	23.94	5.41	3.18	15.43	9.80	13.43	32.87	10.87	50.83	26.97
3.	Uttar Pradesh	78	10.09	20.36	19.33	3.73	5.19	10.29	5.33	11.67	22.20	8.24	57.93	18.68
4.	Bihar	54	20.75	30.44	21.37	8.57	4.80	11.43	6.83	18.28	24.43	17.47	45.95	14.96
5.	Orissa	21	33.03	53.93	42.66	7.31	8.58	25.87	11.03	16.86	45.45	37.58	40.36	33.46
6.	West Bengal	30	30.47	43.60	39.63	7.77	9.89	17.91	11.16	13.63	36.93	59.82	100.00	18.43
7.	Assam, etc.	22	37.97	53.75	44.55	9.26	11.52	25.72	23.31	12.51	38.47	51.42	100.01	25.45
8.	Madhya Bharat, etc.	34	29.01	33.83	30.80	5.86	8.80	17.09	8.94	12.54	53.46	18.49	39.65	28.52
9.	Madhya Pradesh	50	15.74	25.79	15.20	3.93	6.94	13.88	9.45	9.40	20.71	17.19	44.69	24.84
10.	Hyderabad	23	37.20	63.01	34.12	4.41	11.80	26.18	9.37	17.65	26.21	18.24	53.09	52.75
11.	N. Bombay, etc.	48	18.28	31.92	19.41	4.87	7.82	16.76	7.62	12.06	68.81	10.18	53.05	24.29
12.	Bombay Deccan	57	18.21	23.50	15.71	6.14	5.34	10.19	6.48	8.26	24.26	10.40	50.89	16.97
13.	Madras	73	27.53	25.52	21.80	4.43	7.98	11.20	9.52	11.11	21.73	14.49	25.23	23.24
14.	Mysore, etc.	26	38.11	39.54	27.98	6.79	10.46	18.77	18.31	17.13	60.87	24.89	40.31	32.59
15.	All-India	585	9.02	8.62	6.74	1.69	2.17	4.37	2.49	3.62	8.26	4.22	22.29	7.90

TABLE 81.

Standard errors of means, expressed as their percentages (C-IV, V)

	STATE	No. of villages	Production of			Sales of		
			Milk	Milk products	Eggs	Milk	Milk products	Eggs
1.	Punjab, etc.	38	20.35	34.61	60.44	48.46	73.80	82.77
2.	Rajasthan, Ajmer	31	20.15	19.31	68.38	71.14	26.80	-
3.	Uttar Pradesh	78	13.39	32.77	57.02	40.47	35.59	75.78
4.	Bihar	54	50.84	79.49	96.03	94.05	97.16	-
5.	Orissa	21	47.33	-	-	60.66	-	-
6.	West Bengal	30	35.53	69.62	80.93	52.50	74.36	90.67
7.	Assam, etc.	22	46.74	-	23.76	55.96	-	49.41
8.	Madhya Bharat, etc.	34	22.94	33.92	71.56	73.68	38.45	-
9.	Madhya Pradesh	50	39.11	69.90	48.91	43.11	57.27	102.50
10.	Hyderabad	23	40.63	99.82	60.26	84.12	96.90	99.93
11.	N. Bombay, etc.	48	22.78	33.42	60.36	37.14	39.04	74.06
12.	Bombay Deccan	57	11.30	59.34	27.54	30.33	58.16	38.75
13.	Madras	73	28.18	34.25	50.00	56.92	54.15	74.33
14.	Mysore, etc.	26	35.22	99.33	39.93	44.25	100.45	-
15.	All-India	585	6.47	11.97	16.89	19.94	15.09	32.20

TABLE 82.

Standard errors of means, expressed as their percentages (C-XI)

	STATE	No. of villages	Receipts							
			Liquidation of assets	Returns on capital assets	Cash contri-butions from landlords, etc	Sale of farm, forest and livestock products	Sale of other products	Income from mainte-nance and repair services	Income from transport services	Income from storage services
			1	2	3	4	5	6	7	8
1.	Punjab, etc.	38	23.54	72.06	49.42	50.02	65.57	72.96	43.16	94.60
2.	Rajasthan, Ajmer	31	30.34	62.73	83.60	22.41	37.65	98.61	59.02	-
3.	Uttar Pradesh	78	18.98	33.32	36.65	25.95	44.89	37.67	30.46	44.52
4.	Bihar	54	27.95	70.51	60.02	20.35	39.24	54.97	53.04	55.44
5.	Orissa	21	37.56	44.01	-	30.77	67.91	99.65	70.31	-
6.	West Bengal	30	41.38	67.29	77.69	20.98	58.53	57.74	42.09	96.99
7.	Assam, etc.	22	65.55	77.80	80.27	39.39	44.98	78.92	87.73	80.23
8.	Madhya Bharat, etc.	34	47.42	71.15	56.63	25.22	40.86	89.45	99.37	-
9.	Madhya Pradesh	50	20.14	41.73	90.09	21.72	34.92	43.16	42.47	44.79
10.	Hyderabad	23	42.57	44.12	90.75	50.17	51.42	46.78	70.70	78.51
11.	N. Bombay, etc.	48	34.67	49.68	68.61	31.31	86.54	52.58	41.69	99.38
12.	Bombay Deccan	57	18.61	36.57	-	26.26	44.78	83.18	75.51	106.50
13.	Madras	73	16.50	41.19	60.47	23.66	54.79	57.01	39.70	104.00
14.	Mysore, etc.	26	38.79	67.84	99.95	54.06	39.94	72.11	59.03	-
15.	All-India	585	8.47	17.19	24.56	10.14	39.64	19.79	16.06	39.44

TABLE 82. (Contd.)

Standard errors of means, expressed as their percentages (C-XI)

STATE	No. of villages	Receipts							
		Sales commission	Income from other professions and services	Wages earned within the village	Earnings from outside	Pensions and compensation	Remittances received	Other cash receipts	Total
		9	10	11	12	13	14	15	16
1. Punjab, etc.	38	75.84	25.08	12.01	21.25	55.90	30.29	39.86	26.63
2. Rajasthan, Ajmer	31	65.70	49.80	19.14	31.58	77.62	99.46	95.64	12.24
3. Uttar Pradesh	78	65.91	23.00	12.39	22.21	58.66	25.33	46.10	15.99
4. Bihar	54	70.42	27.68	12.67	32.61	62.27	52.45	57.79	10.55
5. Orissa	21	101.17	28.53	26.26	43.29	83.12	57.32	60.96	18.09
6. West Bengal	30	57.53	22.89	16.52	46.90	-	42.53	47.29	14.63
7. Assam, etc.	22	98.35	41.78	23.72	39.37	73.45	104.37	60.09	28.06
8. Madhya Bharat, etc.	34	61.34	49.84	20.26	36.79	100.44	100.19	87.30	20.26
9. Madhya Pradesh	50	70.85	26.46	9.72	32.95	102.58	60.22	83.00	11.27
10. Hyderabad	23	63.63	45.96	15.75	45.70	-	100.60	99.54	28.10
11. N. Bombay, etc.	48	61.33	50.37	14.56	37.50	77.95	90.53	53.17	19.81
12. Bombay Deccan	57	85.31	17.58	10.82	40.26	73.77	36.25	60.03	9.42
13. Madras	73	37.95	19.25	8.64	19.98	69.08	86.98	28.87	11.48
14. Mysore, etc.	26	58.36	27.70	15.98	29.95	77.21	64.84	57.99	25.99
15. All-India	585	22.12	9.39	3.97	9.21	31.27	36.52	20.82	5.24

TABLE 83.
Standard errors of means, expressed as their percentages (C-XII)

	STATE	No. of villages	Expenditure							
			Creation of assets	Returns of assets	Cash contri-bution to tenants, etc.	Raw material purchases for farm production	Raw material purchases for other production	Mainte-nance and repair of capital assets	Transport of finished products	Storage and marketing costs
			1	2	3	4	5	6	7	8
1.	Punjab, etc.	38	28.59	51.42	57.18	17.81	59.28	32.82	72.39	96.50
2.	Rajasthan, Ajmer	31	21.48	55.36	88.67	22.87	50.69	42.84	67.12	101.91
3.	Uttar Pradesh	78	27.04	39.26	51.94	14.24	28.40	25.43	50.68	54.45
4.	Bihar	54	36.97	80.99	57.98	29.50	5095	48.93	103.50	104.44
5.	Orissa	21	38.71	67.66	-	47.05	65.60	73.56	-	100.08
6.	West Bengal	30	22.68	52.54	51.95	24.62	52.11	57.56	91.35	99.53
7.	Assam, etc.	22	53.20	99.68	101.87	54.33	59.77	58.90	67.55	62.28
8.	Madhya Bharat, etc.	34	35.21	62.91	100.62	31.18	68.70	59.31	-	67.23
9.	Madhya Pradesh	50	26.66	44.94	63.81	17.58	37.26	68.74	57.08	58.97
10.	Hyderabad	23	29.61	54.74	75.45	36.16	15.81	89.77	-	99.99
11.	N. Bombay, etc.	48	22.12	31.62	54.40	17.67	38.90	64.28	39.09	-
12.	Bombay Deccan	57	55.08	41.76	106.71	26.88	32.94	46.11	74.17	65.87
13.	Madras	73	19.78	17.14	72.00	24.41	36.72	38.62	43.91	92.77
14.	Mysore, etc.	26	32.43	54.85	77.04	33.51	36.82	47.53	92.13	94.64
15.	All-India	585	9.98	13.01	29.77	7.00	13.38	19.14	25.28	45.88

TABLE 83. (Contd.)

Standard errors of means, expressed as their percentages (C-XII)

	STATE	No. of villages	Expenditure							
			Sales commission	Other marketing costs	Wages paid to male labour	Wages paid to female labour	Wages paid to child labour	Remittances paid out	Other cash expenditure	Total
			9	10	11	12	13	14	15	16
1.	Punjab, etc.	38	63.80	80.63	25.34	75.68	98.46	53.54	67.94	18.73
2.	Rajasthan, Ajmer	31	94.89	69.12	29.17	32.33	45.89	62.22	40.98	15.59
3.	Uttar Pradesh	78	83.15	83.76	34.02	45.00	42.56	100.21	53.33	26.04
4.	Bihar	54	58.03	42.19	12.40	25.67	46.04	60.62	39.96	18.60
5.	Orissa	21	88.71	47.14	38.74	56.41	76.31	39.45	41.24	21.16
6.	West Bengal	30	-	72.05	42.29	88.50	70.30	61.72	56.82	25.93
7.	Assam, etc.	22	-	77.20	20.22	69.67	56.22	57.29	70.56	16.34
8.	Madhya Bharat, etc.	34	-	43.66	39.74	93.92	16.13	56.67	60.82	35.47
9.	Madhya Pradesh	50	57.45	38.29	20.49	28.41	26.31	75.28	39.32	17.25
10.	Hyderabad	23	81.69	-	28.28	46.99	106.42	77.11	37.19	20.83
11.	N. Bombay, etc.	48	122.00	82.96	18.46	28.61	43.25	44.17	56.32	12.86
12.	Bombay Deccan	57	-	46.66	24.68	28.53	26.80	36.07	29.83	25.37
13.	Madras	73	62.36	79.33	17.68	26.45	30.90	32.57	50.37	14.82
14.	Mysore, etc.	26	89.80	99.06	25.84	53.00	144.41	83.32	51.00	21.04
15.	All-India	585	24.77	23.87	7.93	12.26	17.96	24.47	15.03	5.80

TABLE 84.
Standard errors of means, expressed as their percentages (C-XIII)

	STATE	No. of villages	Rice	Wheat	Millets	Other cereals	Unspecified rationed foodgrains	Arhar	Gram	Other pulses	Coconut & kopra	Groundnu t	Other nuts & oil seeds
			1	2			-	5	6				10
1.	Punjab, etc.	38	26.15	19.28	29.74	31.33	98.94	33.48	35.18	66.02	36.08	37.71	50.80
2.	Rajasthan, Ajmer	31	28.47	29.21	37.92	26.99	-	76.93	46.14	64.06	39.51	42.44	53.52
3.	Uttar Pradesh	78	16.88	18.91	21.97	27.52	-	16.00	26.68	15.90	46.96	31.66	56.39
4.	Bihar	54	20.40	37.83	59.71	25.99	-	17.13	28.22	22.43	67.41	-	52.61
5.	Orissa	21	31.43	100.51	99.27	99.60	-	35.88	53.04	48.43	30.41	73.59	68.06
6.	West Bengal	30	21.62	45.04	-	82.91	-	64.05	44.27	13.96	67.13	-	51.90
7.	Assam, etc.	22	22.92	67.61	-	79.44	-	41.72	71.62	26.87	59.03	108.00	103.04
8.	Madhya Bharat, etc.	34	26.46	34.14	41.36	29.66	-	26.98	43.89	39.92	44.11	64.33	71.13
9.	Madhya Pradesh	50	17.49	27.80	28.22	38.91	-	15.62	29.02	18.28	21.51	53.69	49.22
10.	Hyderabad	23	27.40	30.62	38.51	42.84	-	34.26	29.87	46.07	27.30	56.87	65.62
11.	N. Bombay, etc.	48	30.67	34.01	23.63	41.51	68.49	31.25	52.78	46.54	32.34	44.92	74.49
12.	Bombay Deccan	57	26.37	24.01	27.66	42.60	55.02	36.36	18.86	46.78	14.10	28.72	53.20
13.	Madras	73	16.13	44.54	22.52	35.94	-	37.18	19.12	30.18	29.53	40.63	82.90
14.	Mysore, etc.	26	24.64	26.03	29.64	53.39	-	36.25	59.44	35.08	13.51	63.52	105.67
15.	All-India	585	6.42	8.77	11.00	11.59	61.45	8.52	10.34	8.06	9.90	15.53	27.52

TABLE 84. (Contd.)

Standard errors of means, expressed as their percentages (C-XIII)

	STATE	No. of villages	Mustard oil	Groundnut oil	Coconut oil	Linseed oil	Other edible oils	Vanaspati	Mutton	Poultry & birds	Fresh fish	Dry fish	Eggs	Other meats
			11	12	13	14	15	16	17	18	19	20	21	22
1.	Punjab, etc.	38	14.75	71.42	96.85	75.50	57.41	25.29	23.16	46.49	72.76	-	34.36	81.68
2.	Rajasthan, Ajmer	31	54.72	60.79	-	40.95	30.48	-	38.80	-	-	-	72.57	47.33
3.	Uttar Pradesh	78	10.50	50.59	39.53	47.32	52.41	37.23	16.93	67.15	24.87	-	36.60	44.18
4.	Bihar	54	12.53	68.06	25.62	37.92	40.21	46.06	29.90	64.47	19.44	93.50	43.21	73.12
5.	Orissa	21	22.08	53.73	20.40	38.17	35.84	100.52	50.11	-	36.99	30.95	-	102.93
6.	West Bengal	30	10.02	108.80	9.46	89.33	74.83	48.67	33.77	58.77	18.37	65.65	35.26	57.83
7.	Assam, etc.	22	18.84	56.88	23.76	-	73.24	67.20	33.15	49.71	17.63	41.03	41.44	70.87
8.	Madhya Bharat, etc.	34	42.66	68.34	34.64	26.20	43.32	-	38.81	118.00	76.03	85.06	64.48	76.21
9.	Madhya Pradesh	50	39.80	30.81	9.97	22.18	33.29	50.47	28.50	58.29	35.15	49.65	46.81	52.28
10.	Hyderabad	23	41.07	16.96	28.71	61.22	42.59	-	24.25	61.16	34.16	46.76	56.88	56.45
11.	N. Bombay, etc.	48	70.54	12.62	26.72	89.01	37.74	64.18	33.34	92.41	50.52	34.45	64.16	45.60
12.	Bombay Deccan	57	70.54	18.54	13.82	48.44	28.00	48.99	27.13	90.21	47.66	45.39	46.84	-
13.	Madras	73	57.17	11.27	14.65	34.95	24.21	68.88	12.62	61.97	26.95	20.14	29.76	48.45
14.	Mysore, etc.	26	81.36	27.68	13.69	55.87	52.75	99.21	26.22	-	27.95	28.49	48.75	61.65
15.	All-India	585	5.26	8.47	6.62	13.72	12.33	15.93	7.10	21.57	8.05	23.74	13.12	16.19

TABLE 84. (Contd.)

Standard errors of means, expressed as their percentages (C-XIII)

	STATE	No. of villages	Milk	Ghee, butter	Other milk products	Vegetables	Fruits	Salt	Chillies	Other spices	Sugar	Gur (cane)	Other sugars
			23	24	25	26	27	28	29	30	31	32	33
1.	Punjab, etc.	38	37.81	23.91	50.12	14.22	24.36	15.91	14.46	14.50	35.42	13.47	60.92
2.	Rajasthan, Ajmer	31	66.69	18.16	54.70	23.27	41.16	16.44	13.74	21.15	25.59	19.55	43.34
3.	Uttar Pradesh	78	10.16	15.78	29.98	10.35	24.34	7.69	12.41	10.94	26.91	14.00	33.68
4.	Bihar	54	21.82	28.72	39.66	13.53	37.47	8.60	11.92	14.20	25.85	19.84	96.73
5.	Orissa	21	38.55	49.73	61.87	30.57	55.52	10.87	17.20	31.90	42.88	29.50	78.86
6.	West Bengal	30	18.10	37.55	54.87	10.34	24.35	5.75	9.65	10.32	18.84	16.01	62.38
7.	Assam, etc.	22	33.39	42.76	62.38	22.38	34.25	14.99	28.14	21.88	22.04	14.19	74.64
8.	Madhya Bharat, etc.	34	30.04	25.59	42.57	20.91	47.44	35.12	19.79	26.58	25.20	32.65	79.90
9.	Madhya Pradesh	50	16.61	13.67	42.12	9.14	27.98	15.82	12.53	16.88	16.89	14.95	70.01
10.	Hyderabad	23	45.63	28.84	60.14	20.51	49.63	9.99	20.98	21.97	26.51	31.14	41.13
11.	N. Bombay, etc.	48	20.04	21.83	39.38	11.36	33.76	12.64	17.14	16.61	15.13	14.46	46.47
12.	Bombay Deccan	57	24.49	39.84	93.32	27.15	28.33	19.26	24.37	23.54	19.21	17.44	63.97
13.	Madras	73	24.23	26.95	35.89	11.40	19.18	6.92	9.00	13.28	20.35	24.82	36.59
14.	Mysore, etc.	26	21.45	31.30	56.42	19.08	20.33	14.14	10.21	18.55	25.48	21.48	47.41
15.	All-India	585	9.51	7.31	17.11	4.03	8.32	5.40	5.12	4.93	8.37	5.69	15.79

TABLE 84. (Contd.)

Standard errors of means, expressed as their percentages (C-XIII)

STATE	No. of villages	Tea	Coffee	Other beverages	Prepared foods	Other food materials	Pan, supari, etc.	Tobacco (chewing)	Tobacco (smoking)	Liquors	Other intoxi-cants	Total
		34	35	36	37	38	39	40	41	42	43	44
1. Punjab, etc.	38	14.83	109.50	105.50	109.50	57.07	95.27	44.58	16.97	30.54	51.18	11.01
2. Rajasthan, Ajmer	31	39.27	-	74.67	45.51	51.12	38.86	37.53	17.59	28.59	65.74	10.39
3. Uttar Pradesh	78	20.13	-	50.00	50.60	67.71	18.28	11.87	12.63	42.82	34.90	2.66
4. Bihar	54	29.30	-	-	72.14	61.62	20.50	11.81	17.55	29.40	45.98	12.18
5. Orissa	21	23.83	-	30.50	79.40	59.59	27.98	23.88	26.99	40.02	62.52	16.58
6. West Bengal	30	20.07	-	89.33	40.44	41.80	15.54	23.07	13.16	61.26	37.08	10.98
7. Assam, etc.	22	8.98	-	-	102.11	86.64	19.56	31.40	24.80	49.67	60.03	11.30
8. Madhya Bharat, etc.	34	28.55	-	102.71	58.36	72.28	29.18	21.53	20.87	34.01	66.28	13.15
9. Madhya Pradesh	50	17.57	55.20	92.91	32.22	60.40	12.04	13.05	9.05	44.20	42.09	8.15
10. Hyderabad	23	31.70	83.16	99.53	101.00	81.38	26.72	32.97	13.10	26.94	58.60	14.11
11. N. Bombay, etc.	48	11.48	78.66	98.74	28.42	65.94	40.09	29.20	13.61	85.10	62.85	9.46
12. Bombay Deccan	57	15.84	35.88	95.19	70.50	33.76	23.14	10.88	26.74	121.86	-	15.97
13. Madras	73	21.14	18.15	81.28	29.09	31.84	10.87	10.00	16.00	75.83	47.73	8.56
14. Mysore, etc.	26	26.18	14.92	77.92	34.40	83.90	18.80	14.44	16.09	48.63	60.00	8.67
15. All-India	585	6.40	11.18	39.67	12.91	42.63	6.30	5.28	4.56	12.24	22.80	3.09

TABLE 85.
Standard errors of means, expressed as their percentages (C-XIV)

	STATE	No. of villages	Firewood	Charcoal	Kerosene	Other fuel & light	Men's clothing	Women's clothing	Children's clothing	Foot-wear	Soap	Hair oils	Other toilets
			1	2								10	11
1.	Punjab, etc.	38	31.75	56.12	11.38	52.74	9.89	12.65	13.35	9.64	12.80	34.57	42.96
2.	Rajasthan, Ajmer	31	34.24	68.55	17.03	61.60	15.33	18.15	16.10	15.92	31.48	42.85	36.59
3.	Uttar Pradesh	78	27.44	41.20	11.38	36.83	9.89	11.70	10.58	14.70	16.40	45.22	73.32
4.	Bihar	54	41.40	77.05	13.47	49.07	13.91	13.30	13.28	29.48	21.61	26.43	47.35
5.	Orissa	21	67.46	-	14.96	102.18	19.96	28.88	18.93	100.47	49.56	59.03	88.16
6.	West Bengal	30	22.84	44.93	8.81	29.94	18.78	17.38	20.02	24.41	15.13	48.36	31.71
7.	Assam, etc.	22	49.89	-	14.49	82.81	21.15	17.35	26.14	34.78	16.95	29.12	52.97
8.	Madhya Bharat, etc.	34	30.36	80.15	20.82	54.05	27.10	25.18	22.11	27.26	22.27	57.11	58.22
9.	Madhya Pradesh	50	22.50	52.46	7.68	61.97	10.71	11.13	13.37	15.26	13.39	17.96	36.93
10.	Hyderabad	23	42.73	74.00	15.46	50.45	21.29	19.62	34.23	19.83	36.00	34.94	49.95
11.	N. Bombay, etc.	48	29.62	59.51	10.65	28.92	12.69	13.87	17.37	15.83	13.85	19.83	58.46
12.	Bombay Deccan	57	22.36	49.87	8.14	70.03	12.63	12.65	13.21	18.52	17.60	44.40	48.77
13.	Madras	73	22.54	45.00	13.96	58.20	14.66	12.70	16.08	35.63	16.16	40.02	31.53
14.	Mysore, etc.	26	37.12	87.15	10.82	25.37	16.47	16.96	20.81	33.89	12.81	52.02	33.15
15.	All-India	585	8.74	22.80	3.39	13.75	4.16	4.16	4.92	5.88	4.69	10.84	14.88

TABLE 85. (contd.)
Standard errors of means, expressed as their percentages (C-XIV)

STATE	No. of villages	Books, periodicals, etc.	Medicines	Domestic service	Enter-tainment	Travelling	Utensils & furniture	Gifts, etc.	Payments in ceremonies	Other capital expen-diture	Other expen-diture	Total
		12	13	14	15	16	17	18	19	20	21	22
1. Punjab, etc.	38	58.89	18.67	50.90	38.30	16.61	22.46	45.68	37.24	40.46	24.77	7.98
2. Rajasthan, Ajmer	31	32.25	31.38	39.11	36.12	36.27	27.29	40.98	44.19	54.71	43.31	15.35
3. Uttar Pradesh	78	24.59	18.46	27.48	28.54	16.00	19.58	30.07	42.32	42.12	36.07	9.40
4. Bihar	54	31.84	24.75	27.74	51.75	22.53	20.96	51.90	32.49	69.16	34.05	13.25
5. Orissa	21	50.45	33.40	44.17	59.81	41.77	79.68	42.59	33.72	76.60	28.58	20.36
6. West Bengal	30	11.08	21.62	45.63	39.30	25.45	49.33	33.48	55.87	51.04	39.10	15.39
7. Assam, etc.	22	41.33	42.26	82.25	52.98	53.05	39.92	33.67	51.79	86.59	43.32	21.11
8. Madhya Bharat, etc.	34	71.80	32.56	34.67	63.94	31.37	31.70	59.85	42.04	55.20	36.22	20.93
9. Madhya Pradesh	50	32.75	19.88	29.40	24.54	15.04	25.69	46.44	48.80	41.39	28.80	25.68
10. Hyderabad	23	57.55	32.52	67.97	42.66	28.11	45.21	58.14	55.05	71.49	39.55	16.37
11. N. Bombay, etc.	48	41.97	26.99	37.38	31.15	20.63	39.39	47.55	34.59	70.32	37.24	30.00
12. Bombay Deccan	57	24.09	19.10	33.95	32.72	19.93	27.47	39.49	35.82	92.42	57.91	13.36
13. Madras	73	21.64	18.53	29.61	22.81	16.37	23.80	30.55	23.39	54.72	36.03	10.71
14. Mysore, etc.	26	35.14	19.90	33.79	32.60	19.28	35.65	28.59	40.10	37.05	42.16	11.57
15. All-India	585	11.81	6.78	14.41	14.67	6.21	9.57	12.60	13.66	22.74	12.69	3.42

15. CONCLUDING REMARKS

15.1 The preceding chapter giving standard errors of various items 'estimated' by means of the NSS, indicates the degree of accuracy attainable by means of a sample of about 10,000 families, designed and executed in a manner in which the present sample was done. It would therefore be worthwhile examining some of the standard errors. Table 80 shows that the expenditure on real estate improvement is estimated with a standard error of 6.7%; three times of this error gives a margin of about 20% within which to expect a parallel sample to give its estimate. In the same way we could say that the estimate of residential housing area is within a margin of 6% error; that of loans received, that is, of indebtedness, within a margin of 13% and of the number of bullocks within a margin of 7.5%. These are the margins for the all-India estimates. The margins of error for the state estimates are three to four times larger for the bigger states and larger still for the smaller ones.

15.2 Table 81 shows that the all-India estimate of the production of milk has a margin of error of 20% and that of the production of eggs, a margin of 50%. Estimates of sales of milk and eggs have errors of margin wider still, being 60% and 100%, respectively.

15.3 Table 82 shows that 'liquidation of assets' is estimated with a 25% margin of error. Income from sale of farm, forest and livestock products is estimated with a 30% margin of error. Income from wages earned within the village is estimated with a 12% margin of error. Incomes from most other items enumerated in C-XI have error margins anything between 50% to 100%, while the estimate of total receipts has an error margin of 15%. Similarly Table 83 shows that the 'creation of assets' is estimated with a 30% margin of error. Expenditure on raw material purchases for farm, forest and livestock production is estimated within a 21% margin of error. Expenditure on payment of wages to male, female and child labour have error margins of 24%, 36% and 54%, respectively. Estimates of expenditure on most other items of expenditure enumerated in C-XII have error margins of upwards 50% while the total expenditure other than the consumer expenditure have an error margin of 15%. Standard errors of estimates of consumer expenditure on different items are given in Tables 84 and 85. Most of the estimates will be found to have error margins of about 25%.

15.4 This is true of all-India estimates. As noted above, the state estimates are liable to sampling errors several times larger. It might be thought therefore that the utility of these estimates was extremely limited for a study of any specific regions or for inter-regional comparisons; They are also designed to throw little light on the activities of specific economic groups. On the other hand, the margins of errors of most of the estimates, even on an all-India basis, are many times larger than the annual changes one might expect in them. They would, therefore, prove of little value in assessing annual change.

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All tables, graphs, figures, and illustrations should be numbered and amply spaced on separate sheets of paper indicating in a marginal note in the text where such material is to be incorporated. Mathematical equations should be typed on separate lines and numbered consecutively at left margin, using Arabic numerals in parentheses. Use Greek letters only when essential. The word *per cent*, not the symbol %, should be used in the text and the tables.

COMPUTER CD/E-MAIL

If the manuscript is on a computer, send a copy of it on a CD/E-mail covering text, tables, graphs, etc., with details of the software used.

FORM IV

(See rule 8)

Statement about ownership and other particulars about newspaper (***Journal of Indian School of Political Economy***) to be published in the first issue every year after the last day of February.

1. Name of the Newspaper:	Journal of Indian School of Political Economy
2. Place of Publication:	'Arthabodh' 968/21-22, Senapati Bapat Road, Pune 411 016
3. Periodicity of its publication:	Quarterly
4. Printer's Name Nationality: Address:	S. Sriraman Indian 'Arthabodh', 968/21-22, Senapati Bapat Road, Pune 411 016
5. Publisher's Name Nationality: Address:	S. Sriraman Indian 'Arthabodh', 968/21-22, Senapati Bapat Road, Pune 411 016
6. Editor's Name Nationality: Address:	S. Sriraman Indian 'Arthabodh', 968/21-22, Senapati Bapat Road, Pune 411 016
7. Names and addresses of individuals who own the newspaper and partners or shareholders holding more than one per cent of the total capital:	Indian School of Political Economy, 'Arthabodh', 968/21-22, Senapati Bapat Road, Pune 411 016

I, S. Sriraman, hereby declare that the particulars given above are true to the best of my knowledge and belief.

Date: June 5, 2022

S. Sriraman
Signature of Publisher

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