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# FROM THE EDITOR

We, at the ISPE, convey our greetings and best wishes for the 2022 to all our readers. Almost two years have passed but the deadly pandemic seems to be far from disappearing from our midst. It rages on in the form of different variants but then life has to go on in some but maybe restricted fashion. Our Issues have been delayed by nearly two years. A good part occurring due to the pandemic and its effects and partly due to non-receipt of quality standard papers from authors since many have maybe taken a break or may have been affected in different ways. However, we are slowly getting to reduce the delay if not eliminating it. Some papers are being published in the current Issues (1st and 2nd of 2020 Volume) and hopefully more will be cleared in the ones that follow including the 2021 Volume. While apologizing for the delay, all of you will understand that factors external to us were quite overbearing. More than two years back, we had planned to host a series of events and a publication or two to commemorate the hundredth centenary year (2020) of the birth of our Founder- Director, late Prof.V.M. Dandekar (which also happened to be the fiftieth year of the foundation of the ISPE) during 2020. While some events especially discussions group meetings were held in early 2020, due to the pandemic, we could not continue with these activities. More recently, we felt that we should resume them as soon as we are in a position to do it. While the physical events are being planned for the latter half of 2022, we are beginning the resumption of the process by way of bringing out Prof.Dandekar^Rs papers published between the years 1951 and 1958 (in the Documentation Section of our Journal), to begin with. This decade was the beginning of his publication innings which went on till his untimely death in 1995. Also included in the Section is "RESERVE BANK OF INDIA, All-India Rural Credit Survey, District Monographs - POONA (BOMBAY STATE)". The rest of his papers would hopefully follow in subsequent Issues or in other forms. On reading these papers, it is obvious that he covered a wide range of contemporary issues ranging from agriculture related ones to those in demography and even in the highly technical area of Statistics and its applications. Happy reading!

## S.Sriraman

# NEITHER IN EMPLOYMENT NOR IN EDUCATION OR **TRAINING: A STUDY ON INDIA**

Hema S. Kurup, and K.S. Hari

The failure to generate adequate employment opportunities for young people is a major policy challenge faced by the Indian economy. In order to reap the full benefit of the demographic dividend, young people should either be in employment or in education and training so that they can be employed in future. In Goal No. 8 of the United Nations' sustainable development goals (SDGs) a major objective is to substantially reduce the proportion of young people Not in Employment, Education or Training (NEET) by 2020. In the existing literature on young people being unemployed in India, there is hardly any reference to this failure, namely, of school-to-work transformation that is internationally captured through NEET. The present study is an attempt in that direction. Adopting the internationally accepted definition of NEET and using unit-level data published by the National Sample Survey Organisation (NSSO), the present paper estimates the Indian NEET young people from 2004-05 till 2018-19. Our results indicate that the NEET rate among the Indian young people is very high and has been increasing in the recent past. 33.56 per cent of the Indian youth are NEET in 2018-19. Key risk factors of becoming NEET include rural female, low education and being in the older age group within 15-29-year category. Our logistic regression results show that as the level of education increases, the number of NEET young people comes down. This is specifically true for those who have received vocational training. Hence, the solution for a better education employment transformation in India is to improve the educational level of the young people. On the demand side, country needs to generate more job opportunities that suits the emerging youth of India.

# Keywords: India, Employment Growth, Youth Unemployment, NEET

### INTRODUCTION

India has undergone significant demographic changes in the last three decades. The rapid population growth due to the decline in mortality has transformed into a slower population compared to a few generations back. As

growth due to the reduction in fertility. This transition has led to a 'baby boom' in the country, where the population growth is accompanied by the existence of a large number of young individuals as

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account for 28 per cent of the total population and 46 percentage of the working Kannan and Raveendran, 2012, Pp. age population (15-59 years old) in India. This working age with a huge share of Mehrotra, et al., 2014, Pp. 49-57; Abrayoung people represents a potential ham, 2017, Pp. 13-17]. Rangarajan, et.al., demographic dividend.<sup>1</sup> It is expected that the peak of the demographic dividend in India will be seen in 2020 and will continue till 2040. The average Indian will be only 29 years old in 2020, compared to the average age being 37 years in China and the United States, 45 years in Western Europe and 48 years in Japan [Chandrasekhar, et al., 2006; Thomas, 2014, Pp. 15-17]. This is a feature of the development of success stories of countries in East Asia that grew rapidly in the latter half of the 20th century [Bloom and Williamson, 1998, Pp. 419-455; Feng and Mason, 2005]. On the other hand, failing to provide opportunities for this bulge of young people as they enter the labour market risks a 'demographic disaster'<sup>2</sup> [Mitra and Verick, 2013].

Although India has a large young people, the employment scenario in the country is not so promising. The negative growth rate in the workforce force despite positive population growth rate of 1.93 per cent and economic growth rate of more than 7 per cent has generated much debate in the literature on jobless and job those who prefer to stay out of the

per the Census 2011, young people loss growth [Himanshu, 2011, Pp. 43-59; Rangarajan, et. al., 2011, Pp. 68-72; 77-80; 2019, Pp. 38-44; Thomas, 2012; [2011] and Kannan and Raveendran, [2012] both specifically looked into the issue of decline in workforce participation and came out with a contradictory result.<sup>3</sup>

> Along with the net decline in employment, the unemployment among the young people has increased. According to the Periodic Labour Force Survey (PLFS) 2017-18, the unemployment rate among the young people during 2017-18 was 17.81 per cent, the highest in independent India. The unemployment rate has increased in almost all the States (along with the decline in the workforce participation rates). This is irrespective of the higher growth in young people, especially in highly populated states that attained a higher GDP growth rate during this period [Kumar and Subramanian, 2012, Pp. 48-57; Okada, 2012, Pp. 169-193].

> Although employment amongst young people and unemployment, in general, are important statistics, they cover only those who are in the workforce and not

workforce and who are not engaged in reference listed, this paper estimates the any economic activity. Since the role of number of NEET Indian young peoples young people in building a nation is very important it is unfortunate if a section of young people who are more educated and skilled than the other age groups of the population does not engage in any economic productivity represents the lost potential of Indian economy [GOI, 2017]. International labour organisation (ILO) calls this non-productive young people NEET (Not in Employment, Education or Training). The school-to-Work Transitions (SWT) will have a long-term impact on an economy and NEET often indicates the failure of such a transition [ILO, 2015].

In order to reap the full benefits of this demographic dividend, young people should be either in employment or in education and training, so that they can be employed in future. From the existing literature, it is noted that there is hardly any reference to this failure of schoolto-work transformation captured through NEET on young people unemployment in India. The present study is an attempt in that direction. Using the internationally accepted definition of NEET and using unit-level data published by the National Sample Survey Organisation (GOI, details of data used in the study is given in the data source section and from 2004-05 till 2018-19.

#### NEET: A CONCEPTUAL DISCUSSION

The term NEET was formally introduced in the UK in 1999 with the publication of the government's Bridging the produced by Gap Report Social Exclusion Unit in 1999<sup>4</sup> (Bridging the gap is the original document and is added in the reference list also) It became popular since it describes those young people who are struggling to navigate a successful School-to-Work Transitions (SWTs) [ILO, 2015]. Since the concept focuses on the issue of school dropout among teenagers, the NEET indicator has gained sufficient weight to be proposed as the sole young people-specific target for the UNDP SDGs. In Goal 8, stating that "Decent work and economic growth: promote inclusive and sustainable economic growth, employment and decent work for all," young people are identified as two proposed targets: (a) by 2030, to achieve a full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value, and (b) by 2020, to substantially reduce the proportion of young people not in employment, education or training.<sup>5</sup>

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Since there is no standard definition of NEET, the characteristics of young people classified as NEET differ greatly from country to country. Statistical Office of European Union (Eurostat), the International Labour Organisation (ILO) and certain other organisations like OECD have adopted the following definition of the NEET rate as: "the percentage of the population of a given age group and sex who is not employed and not involved in further education or training" [ILO, 2015, p. 1]. Unemployment rate records the share of the economically active population who are not able to find a job. In the case of youth population, the unemployment rate can be overestimated

by those who exit from the labour force, such as those who decide to go back into education or decide to not look for a job anymore as they believe that there is no job for them. Hence, in both cases they become economically inactive and therefore irrelevant to the calculation of the unemployment rate. In contrast, NEET records the share of the population of all young people currently disengaged from the labour market and education, namely unemployed and inactive young people who are not in education or training [Eurofound, 2012]. The NEET indicator is calculated as follows [ILO, 2013a]:

NEET(percent) =(Number of youth – (Number of youth in employment + Number of youth not in employment who are in education or training) ÷ Total number of youth) × 100

A more simplified version of the definition used in ILO is

NEET = ((unemployed non-students + inactive non-students) / young people) X 100

In the present study, we have used this simplified version to measure NEET in India. There are two subcategories of NEET that are considered: (i) not in employment (unemployed or jobless) and (ii) not in education or training (inactive non-students).

#### DATA

This work is based on secondary sources of information that include data from National Sample Survey Organisation (NSSO) Quinquennial Survey on Employment and Unemployment in India for 2004-05, 2011-12 [NSSO, 2006 and 2014], Periodic Labour Force Survey (PLFS) 2018-19 [NSO, 2020] and Census of India 2001 and 2011 [Registrar General of India (n.d.-b)]. The study covers the period 2004-05, 2011-12 and 2018-19. The period from 2004-05 has been selected on the basis of growth in the share of youth population and the high GDP growth rate in the post-2003 period.<sup>6</sup> Definition of youth is adopted from the National Youth Policy 2014 [GOI, 2014] as those who are in the age group of 15-29 years.<sup>7</sup> Since different age structures have different effects on the status of young people, a five-year age group classification, 15-19 years (adolescents), 20-24 years (young people) and 25-29 years (older young people) has been used to examine the status of young people. The adolescent age group of 15-19 years is likely to be more in edu-

been selected on the basis of growth in cation while the other two groups are the share of youth population and the high more likely to be in the workforce. We GDP growth rate in the post-2003 period.<sup>6</sup> Definition of youth is adopted from the reconstruction of the state of t

#### YOUTH POPULATION IN INDIA: SOME STYLIZED FACTS

As per GOI [2011], young people in the age group of 15-29 years comprise 27.53 percentage of the population in India. During our period of study (2004-05 to 2018-19), the young people (15-29 years age group) increased from 296.38 million in 2004-05 to 389.39 million in 2018-19 (Table 1), with an

Year	Population	Labour Force	Employed 15-19 Years	Unemployed	Students	Inactive
(1)	(2)	(3)	(4)	(5)	(6)	(7)
2004-05	108.00	42.45	39.75	2.70	46.79	18.76
2011-12	122.40	28.74	26.19	2.55	76.37	17.28
2018-19	139.28	21.06	15.52	5.55	99.76	18.44
			20-24 Years			
2004-05	98.07	60.68	56.42	4.25	9.69	27.70
2011-12	113.46	57.69	53.22	4.48	21.49	34.28
2018-19	131.99	59.06	46.05	13.01	30.88	42.04
			25-29 Years			
2004-05	90.32	64.57	62.45	2.12	0.89	24.86
2011-12	103.08	65.88	63.59	2.29	2.07	35.13
2018-19	118.18	69.66	62.19	7.47	3.03	45.50
		15-29	9 Years (Youth	total)		
2004-05	296.38	166.83	157.74	9.09	58.45	71.10
2011-12	338.94	151.13	141.91	9.25	101.75	86.02
2018-19	389.39	146.05	122.31	25.75	136.40	104.90

Table 1. Status of Youth Population Age-wise (in million)

Source: Estimated using the Unit level data of NSSO Quinquennial surveys on employment and unemployment in India and the Periodic Labour Force Survey 2018-19 and Population Census of India 2001 and 2011.

annual growth rate of 1.97 per cent (we have projected the population and calculated this value using the population census 2001 and 2011). The proportion of young people in the total population has increased from 26.98 per cent in 2004-05 to 28.77 per cent in 2018-19. This growth was mainly in the age group of 20-24 years (33.92 million) during this period, followed by the age groups of 15-19 years (31.27 million) and 25-29 years (27.86 million). The high growth during this period was in the urban areas, mainly among females, with a growth rate of above 3 per cent in the age groups of 20-24 years and 25-29 years. Our results corroborates with that of Mitra and Mehta 2011. They find urbanisation and the resultant rural-to-urban migration for employment opportunities as the major reason behind high growth of population in urban areas.

#### LABOUR FORCE PARTICIPATION

Although there was an increase in the young people in the country, there is no corresponding increase in the young people workforce during this period (Table 1). The young people workforce participation indicates the proportion of the young people who are part of the workforce of the country, which consists of those who are employed and unemployed. It has declined from 166.83 million in 2004-05 to 148.05 million in

2018-19 (with an annual decline of 0.85 per cent). Around 18.79 million have gone out of the labour force during this period. The decline was mainly in the case of rural females. India, historically, has the peculiar feature of a low female workforce participation rate during periods of high economic growth [Rangarajan, et al., 2011; Kannan and Raveendran, 2012; Mahapatro, et al., 2013, Pp. 83-107; Kapsos, et al., 2014; Mehrotra and Parida, 2017, Pp. 360-380]. Around 22.43 million rural female, particularly among the age group of 15-19 years (8.56 million from 15-19 years age group), have gone out of the labour market. The decline in young people constituting the labour force, particularly given the background of increasing numbers among the young people can be mainly attributed either to increase in enrollment in educational institutions or lack of productive employment to opportunities available in the country [Dev and Venkatanarayana, 2011; Okada, 2012; Mitra and Verick, 2013].

### WORK FORCE PARTICIPATION

Now, we turn to work force participation details. Employment in the country shows a similar trend to that of the workforce during the post-2004 period. The number of employed young peoples declined from 157.74 million in 2004-05 to 122.31 million in 2018-19 (Table 1).

The working young people declined by 35.43 million with a negative growth rate of 1.80 per cent during the period under study. The decline was particularly during 2011-12 to 2018-19, with a negative growth rate of 2.10 (19.60 million). The decline is particularly among the age group of 15-24 years (by 24.24 million). For the age group of 25-29 years, although the employment declined by 0.27 million between 2004-05 and 2018-19, the decline was only among the (particularly females among rural females by 7.20 million). The existing literature [Dev and Venkatanarayana, 2011; Rangarajan, et al., 2011; Kannan and Raveendran, 2012; Mehrotra, et al., 2014; Thomas, 2014] offers various plausible explanations for the decline. A major hypothesis is changes in the demographic profile of young population, increasing enrollments in elemenand secondary schooling, tary mechanisation in agriculture, withdrawal of women and their increasing participation in household activities, sickness, disability, etc. Various socioeconomic factors were also identified as playing a major role in low participation of people, especially women, in the labour market [Mitra and Verick, 2013; Mehrotra and Parida, 2017].

A major factor identified in the literature, for the withdrawal of young people, especially females, is the increased enrollment or going back to school [Rangarajan, et al., 2011; Kannan and Raveendran, 2012]. While analysing micro level data it was found that there was a mismatch between the withdrawal from the workforce and enrollment in the school system. Shortage of remunerative jobs in the labour market is found as the major factor as compared to supply side factors.

Our result indicates а definite improvement in India in terms of enrollment in education and training (see Table 1). The young people in education and training increased from 58.45 million to 136.40 million during the period under study. The growth was particularly between 2004-05 and 2011-12 by 8.24 per cent. The male young people in education and training increased from 35.76 million in 2004-05 to 78.30 million in 2018-19. The female participation in education and training has increased from 22.80 million to 58.27 million. The female participation was highest among the age group of 15-19 years. But this positive development, which has been due to state intervention and changing household allocation of time, fails to

account for the huge decline in workforce participation of the young people, especially women. A parallel argument has been that females in this age group are at the peak of their reproductive age and childcare and other household activities thus leading to their temporary withdrawal from the labour market and they join back at a later stage. But Indian empirical data does not support this hypothesis because females irrespective of their age groups withdraw from the workforce. It appears that this has more to do with the demand side of the labour market than with supply side factors like allocation of time. Further. the employment-unemployment figures tell us only a partial story about the young people in country, since a significant proportion opt out of the workforce. As we have seen above, a majority of those who withdraw from the labour market. especially females, do not enrol for education. Since these proportions do not engage in any economic activity, it represents the lost potential for the Indian

economy. We have tried to measure this lost potential using the NEET indicator to which we turn to now.

#### NEET: THE INDIAN SCENARIO

The concept of NEET has become popular in recent years due to the global recession and the resultant increase in the unemployment rate in developed countries, especially in Europe and other OECD countries. Here, we briefly try to compare the NEET situation in India with that of other countries based on data (see Table 2) as published by the World Bank [2019] Our results for both years indicate the severity of India's NEET problem and the likely extent of loss to the domestic GDP growth because of it. The comparison across countries indicates that India leads the world in terms of young people who are in the NEET category. In most of the developed countries, the rate is relatively low and they have been successful in reducing the rate even further during 2012-2016.

S. No.	Country	2012	2016
(1)	(2)	(3)	(4)
1	Russian Federation	11.99	12.41
2	United Kingdom	13.88	10.90
3	High income	14.06	11.69
4	Europe & Central Asia	15.57	13.82
5	OECD members	15.87	13.85
6	United States	18.29	15.00
7	Europe & Central Asia	18.58	16.72
8	Brazil	19.26	23.24
9	Latin America & Caribbean	19.74	21.59
10	Latin America & the Caribbean	19.74	21.59
11	India	27.50	34.04
12	South Asia	27.50	NA
13	South Africa	32.21	31.22

Table 2. Comparison across Countries for the NEET Rate

Source: World Bank 2019.

We also estimated the NEET rate experiencing an increase in the NEET for different age groups over the rate over the years and which has study period (as give in Table 3). It remained above 27 per cent since is observed that India has been 2004-05 (Table 3).

	Age Group						
Year	15-19	20-24	25-29	15-29(Youth total)			
(1)	(2)	(3)	(4)	(5)			
2004-05	19.87 (21.46)	32.59 (31.96)	29.86 (26.97)	27.06 (80.19)			
2011-12	16.20 (19.83)	34.16 (38.75)	36.30 (37.42)	28.11 (95.27)			
2018-19	17.22 (23.99)	41.71 (55.05)	44.82 (52.97)	33.56 (130.68)			

Table 3. NEET Rate by Age Group (in per cent).

Note: Figures in parenthesis area actual numbers in million.

Source: Authors' estimates using the NSSO Quinquennial surveys on employment and unemployment in India and Periodic Labour Force Survey 2018-19.

people, especially females, from the labour market, the NEET rate in the country has increased in the recent years. The NEET rate, which was 27.06 per cent in 2004-05, increased to 33.56 per cent in 2018-19. Out of the 296.38 million young people in 2004-05, 80.19 million came under the NEET category. This has increased to 130.68 million in 2018-19 out of 389.39 million. More than 50 per cent of the young females in India are NEET. The NEET rate is the highest among the age groups of 25-29 and 20-24 years. In both age groups, more than 40 per cent are in the NEET category. The low NEET rate in the age group of 15-19 years compared to other age groups is mainly because this age group is in education and training category. But the figure of 17.22 per cent in 2018-19 is a worrisome figure in the background of increasing unemployment and inactiveness in the country. The higher incidence of NEET indicates the failure of the Indian economy in SWT (Günther 2015) and the amount of lost potential to the economy. We now turn more specifically to the situation in rural India and then in Urban India.

### **RURAL INDIA**

It can be seen from Tables 4 that the NEET rate in rural India has increased

As a result of the withdrawal of young from 25.69 per cent to 34.48 per cent during the period under analysis, i.e., around 36.05 million of the rural young people has joined in the NEET category during the period of study. Gender-wise, this is mainly the female population. Between 2004-05 and 2018-19, the female NEET rate has increased from 46.45 per cent to 57.66 per cent. It is particularly higher in the age group of 25-29 years, which increased from 48.37 per cent in 2004-05 to 77.09 per cent in 2018-19. This growth was particularly during 2004-05 to 2011-12 (by 15.46 per cent). Contrary to the other two age groups, the NEET rate among rural females in the age group of 15-19 years has declined during 2004-05 to 2018-19 by 1.95 per cent. This is mainly due to the increase in the enrollment in education and training as discussed in the previous section. For rural males, the NEET rate increased, especially between has 2011-12 and 2018-19 (from 5.50 per cent to 12.21 per cent). The growth was particularly in the age group of 20-24 years by 10.84 per cent. The high NEET rate in rural India can be attributed to household characteristics and socioeconomic opportunities. Rural households have less resources and capabilities to invest in cognitive and non-cognitive skills development of their children as compared to the urban households.

		Age	Group	
Year	15-19	20-24	25-29	15-29
(1)	(2)	(3)	(4)	(5)
		Rural		
2004-05	20.52	31.28	26.10	25.69
2011-12	17.42	34.58	34.84	27.99
2018-19	18.57	44.05	44.99	34.48
		Urban		
2004-05	18.12	35.77	39.36	30.40
2011-12	13.10	33.26	39.33	28.37
2018-19	13.87	36.91	47.47	31.55

Table 4. Location-wise (Rural/ Urban) NEET Rate (in per cent)

Source: Same as Table 1.

## **Urban India**

The urban NEET rate was 30.40 per cent in 2004-05, which increased to 31.55 per cent in 2018-19 (Table 4). Around 13.90 million of the urban young people joined the NEET category during the period under analysis. This increase in the NEET rate mainly comes from the population in the age groups of 25-29 years and 20-24 years and which has increased by 5.11 per cent and 1.14 per cent. The growth in NEET rate for these two age groups was particularly between 2011-12 and 2018-19. At the same time, the NEET rate declined in the age group of 15-19 years from 18.12 per cent to 13.87 per cent. This is mainly due to the increase in the enrollment in education and training of this age group as discussed in the previous section.

### **Gender - Wise Analysis**

Looking at it gender-wise, the increase is predominantly among the female population although it declined between 2004-05 and 2018-19 from 56.53 per cent to 51.02 per cent (Table 5). This decline is particularly in the 15-19 years age group. This can be attributed to the increasing number of urban females in the education. But for males, the NEET rate has increased, especially between 2011-12 and 2018-19 by 5.71 million.

## SUBCATEGORIES WITHIN NEET

A sub classification of NEET into unemployed nonstudents and inactive nonstudents offers some interesting insights into the whole issue of NEET in India (Tables 6 and 7).

Deriod				Age (	Group				
renou	15-19	20-24	25-29	15-29	15-19	20-24	25-29	15-29	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
		Rural	Male			Rural Female			
2004-05	6.66	5.98	2.60	5.29	36.56	55.12	48.37	46.45	
2011-12	6.19	6.43	3.43	5.50	30.80	62.74	63.83	51.52	
2018-19	9.65	16.82	10.82	12.21	29.10	70.82	77.09	57.66	
	Urban Male					Urban	Female		
2004-05	7.86	10.07	5.95	7.93	30.49	65.00	76.26	56.53	
2011-12	5.75	8.54	5.88	6.73	22.17	59.68	73.99	52.40	
2018-19	9.30	18.01	13.56	13.63	19.06	57.72	76.16	51.02	
	Total Male					Total I	Female		
2004-05	6.99	7.24	3.59	6.09	34.94	57.80	55.86	49.22	
2011-12	6.07	7.13	4.25	5.89	28.41	61.77	67.03	51.79	
2018-19	9.55	17.23	11.75	12.66	26.19	66.48	76.76	55.61	

Table 5. Gender-wise NEET Rate (in per cent)

Source: Same as Table 1.

## Table 6. NEET Rate by Subcategories (in per cent)

	Age Group					
Year	15-19	20-24	25-29	15-29		
(1)	(2)	(3)	(4)	(5)		
		Unemployed				
2004-05	12.60	13.31	7.85	11.34		
2011-12	12.84	11.55	6.11	9.71		
2018-19	23.13	23.64	14.10	19.70		
		Inactive				
2004-05	87.40	86.69	92.15	88.66		
2011-12	87.16	88.45	93.89	90.29		
2018-19	76.87	76.93	85.90	80.27		

Source: Same as Table 1.

Location/ NEET		15-19 Years		2	20-24 Years		25-29 Years			15-29 Years			
Genuer	Subcategory	2004-05	2011-12	2018-19	2004-05	2011-12	2018-19	2004-05	2011-12	2018-19	2004-05	2011-12	2018-19
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Rural	NEET	6.66	6.19	9.65	5.98	6.43	16.82	2.60	3.43	10.82	5.29	5.50	12.21
Male	Unemployed	47.13	47.96	71.39	70.40	71.55	85.97	63.07	61.79	81.61	57.67	58.88	80.17
	Inactive	52.87	52.04	28.61	29.60	28.45	14.03	36.93	38.21	18.39	42.33	41.12	19.83
Rural	NEET	36.56	30.80	29.10	55.12	62.74	70.82	48.37	63.83	77.09	46.45	51.52	57.66
Female	Unemployed	3.24	2.73	2.95	4.51	2.97	5.10	3.53	1.91	2.87	3.84	2.51	3.79
	Inactive	96.76	97.27	97.05	95.49	97.03	94.90	96.47	98.09	97.13	96.16	97.49	96.21
Urban	NEET	7.86	5.75	9.30	10.07	8.54	18.01	5.95	5.88	13.56	7.93	6.73	13.63
Male	Unemployed	58.51	57.07	63.02	84.71	82.43	86.73	79.65	77.03	84.44	74.15	73.24	80.42
	Inactive	41.49	42.93	36.98	15.29	17.57	13.27	20.35	22.97	15.56	25.85	26.76	19.58
Urban	NEET	30.49	22.17	19.06	7.24	7.13	57.72	76.26	73.99	76.16	56.53	52.40	51.02
Female	Unemployed	5.18	4.86	5.81	7.47	6.21	12.56	4.28	3.01	6.24	5.67	4.53	8.63
	Inactive	94.82	95.14	94.16	92.53	93.79	87.44	95.72	96.99	93.76	94.33	95.47	91.37

Table 7. Subcategory of NEET, Gender-wise (in per cent)

Source: Same as Table 1.

higher among males than females. Between 2004-05 and 2018-19, it increased by 16.07 per cent (from 64.19 per cent to 80.25 per cent). The contribution was mainly during the 2011-12 to 2018-19 period (by 16.25 per cent points). Among the different age group, the growth in male unemployed NEET category was the highest in the 15-19 years age group (50.63 per cent to 69.10 per cent) followed by 25-29 years (71.33 per cent to 82.73 per cent) and 20-24 years (76.65 per cent to 86.24 per cent). increase of more than 15 per cent point

The rate of unemployed NEET is In all the age group, the unemployed NEET declined between 2004-05 and 2011-12, but increased drastically 2011-12 2018-19. between and Although, the share of both the rural and urban males have almost same share of unemployment in the NEET category, the major contributors of unemployed male NEET category were rural males. Compared to urban males, the growth of share of unemployed in NEET category was high among the rural males. All the age group of rural males experience a huge

especially between 2011-12 and 2018-19. The 20-24 years have the highest share of around 85.49 per cent in 2018-19. Though the share among 15-19 years in 2018-19 was only 71.39 per cent which is smaller compared to the other two age groups, the growth was the highest among this group (by 24.26 per cent points) during the period of study. Among the urban male, although the share of unemployed in NEET is almost same as among the rural males, the growth is higher among the 25-29 years age group (by 4.78 per cent points).

On the other hand, the NEET-inactive among male is showing a declining trend. It declined by 15.03 per cent (from 35.81 per cent to 19.75 per cent). Even though, the NEET- inactive has shown a decline, during the second phase, the NEETinactive has increased in the first period then declined in the second period. The major contributor of male inactive NEET category is urban males. Even though it is showing a declining trend, the inactiveness is high particularly among the 15-19 years age group.

In contrast to the increasing participation rate of the unemployed NEET, the inactive NEETs are higher among the females than males. Although the share has declined in the recent years, around 95 per cent of the female NEET are in

inactive category. As we pointed out earlier, the increase in the participation of education during 2004-05 to 2011-12 emerged as the main reason for the withdrawal of males from the labour market for the age group 15-29 years. But for females the enrollment in education was lesser than the withdrawal from the labour market. This has resulted in an increase in the NEET-inactive during 2004-05 to 2011-12 periods. This shows that the young people are available in the labour market but not able to enter into productive employment. This joblessness is despite of the high GDP growth rate the economy has been experiencing. The general trend in NEET rate explained above points out the difference in participation rate by gender. Although the general trend in NEET rate is increasing slowly, there exists difference in NEET rate by place of residence in India.

A general trend emerging from the all-India data on NEET rate among young people shows an increasing share of young people who are not involved in any kind of productive activity. Males are available in the labour market since their unemployment rate is very high but females have completely withdrawn from the labour market. This finding corroborates that from the existing literature on jobless growth in India.

### DETERMINANTS OF NEET: LOGISTIC REGRESSION ANALYSIS

There are some factors that give rise to NEET. According to the European Social Fund [2015], teachers, educators and also family members can well be precursors for the creation of NEET.<sup>8</sup> Other factors like low level of education, being in rural and absence of experience in labour market also contribute to the creation of NEET [Yuji 2007, Pp. 23-40; Serracant 2014, Pp. 401-419; Noh and Lee 2017]. Unfortunately, NSSO's and PLFS's unit-level data fails to capture many of these characteristics since it does not include the time use survey of population. Given this limitation, in the present section we try to explore the determinants of NEET using a binary logistic model using the PLFS data 2018-19. The dependent variable in this model measures NEET in India (NEET = 1, Otherwise = 0). The dependent variable NEET takes 0 for those who are employed or in education and training and 1 for those who are unemployed and inactive. The explanatory variables used for the model are age, location, gender, marital status, social group, religion, general education level, technical education and vocational education.

Then, the prediction equation for NEET is specified as

(p) NEET	$in = \beta_0 + \beta_1 Age$
India	+ $\beta_2$ Place of Residence
	$+\beta_3$ Gender $+\beta_4$ Marital Status
	+ $\beta_5$ Social Group + $\beta_6$ Religion
	+ $\beta_7$ General Education level
	+ $\beta_8$ Technical Education
	$+\beta_{0}$ Vocational Training + u

Table 8 show results of the logistic regression analysis that explores the relationship between being NEET and the explanatory variables. The odds ratio [exp beta] for each category of the independent variable obtained from the analysis indicate the odds of being NEET compared to the reference category during the reference period, when the effect of all other variables is kept constant.

Age is significant in all three time periods. The young people in the age groups of 20-24 and 25-29 years have a higher likelihood of being NEET as compared to the reference category of adolescents (age group of 15-19 years). The age group of 20-24 years has 3.84 times and the age group of 25-29 years had 3.13 times chances of being NEET in 2018-19. This is an expected outcome since adolescents will be more enrolled in education and training.

The location dummy takes 0 for urban areas and 1 for rural areas. Our results show that the odds ratio is one, indicating that those who reside in rural areas are likely to be NEET. Those who reside in the rural areas are 1.04 times more likely to be NEET as compared to their urban counterparts. The gender dummy takes value 0 for males and 1 for females. The logistic regression results corroborate our earlier argument that females are more likely to be NEET as compared to males. The odds ratio shows that females were 6.93 times more likely to be NEET as compared to males.

The marital status dummy take 0 for unmarried, 1 for married, 2 for widowed and 3 for divorced. It can be seen from the analysis that those who are married have a higher likelihood of being NEET as compared to the reference category by 2.38 times. For widowed and divorced category, the p-value is greater than 0.5 showing the variables as statistically insignificant.

Three social group dummies, ST, SC representing and OBC. Scheduled Tribes, Scheduled Caste and Other Backward Classes respectively with Others in the social group as the comparison category. Except for the ST category, the young people in the SC and OBC category have a higher chance of being NEET as compared to the control variable. For the religion dummies, Islam, Christianity, Sikhism, Jainism, Buddhism, Zoroastrianism and Other religions with Hinduism as the comparison category, it can be seen that Islam

and Sikhism have an odds ratio more than one. It shows that the young people in these three religions are more likely to be NEET. Although young people in Zoroastrianism have an odd ratio of 1.01, the p-value of the variable is 0.97, showing statistical insignificance.

Six education dummies representing below primary & primary, middle, secondary, higher secondary, certificate or diploma course, graduate and PG & above with not literates as comparison category is included. It can be seen from the table that as the general level of education increases, the probability of the young people being NEET is less as compared to those below this level. The odds ratio, which is less than one for various categories of general education, clearly shows the inverse relationship between education and the chances of being NEET. Technical education dummy takes value 0 for those who do not have technical education and 1 for those who do. In 2018-19, those who had technical education were 1.38 times more likely to be NEET as compared to the control group. This raises the issue of employability and the quality of technical education imparted. Vocational training, on the other hand, reduces the chances of young people being NEET as it has an odds ratio less than one for all time periods.

NEET	Coefficient	Odds Ratio	dy/dx	P-value
(1)	(2)	(3)	(4)	(5)
Age (20 to 24)	1.35	3.84	0.20	0.00
Age (25 to 29)	1.14	3.13	0.17	0.00
Rural	0.04	1.04	0.01	0.02
Female	1.94	6.93	0.28	0.00
Married	0.87	2.38	0.13	0.00
Widowed	0.09	1.10	0.01	0.54
Divorced	-0.04	0.96	-0.01	0.77
ST	-0.09	0.91	-0.01	0.00
SC	0.21	1.24	0.03	0.00
OBC	0.12	1.13	0.02	0.00
Islam	0.37	1.44	0.05	0.00
Christianity	-0.01	0.99	0.00	0.77
Sikhism	0.27	1.31	0.04	0.00
Jainism	-0.70	0.50	-0.10	0.00
Buddhism	-0.30	0.74	-0.04	0.00
Zoroastrianism	0.01	1.01	0.00	0.97
Other religions	-0.08	0.92	-0.01	0.34
Below primary & primary	-0.48	0.62	-0.07	0.00
Middle	-0.57	0.57	-0.08	0.00
Secondary	-1.00	0.37	-0.15	0.00
Higher Secondary	-1.22	0.30	-0.18	0.00
Certificate or Diploma course	-0.54	0.58	-0.08	0.00
Graduate	-0.53	0.59	-0.08	0.00
PG & Above	-0.44	0.64	-0.06	0.00
Technically Educated	0.32	1.38	0.05	0.00
Vocationally Trained	-1.04	0.35	-0.15	0.00
_cons	-2.38	0.09		0.00

Table 8. Determinants of	NEET	2018-19
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Source: Same as Table 1

#### CONCLUSION

NEET rates provide a measure of young people who are outside the educational system, not in training and not in rate has increased over the years for all

employment. The present study attempted to analyse the failure of youth participation labour market using NEET rates. The results indicate that the NEET

age groups. A high NEET rate will hinder the future economic growth of the country because young people with newly acquired skills are unable to engage in any economic activity. The major contributor of the increase in the NEET rate are inactive workers, i.e., the young people not in education and training and are also not unemployed. Although the majority of this inactive young people are constituted by females, in recent years, males also have contributed to this subcategory of NEET. This section of the young people is not building their own human capital and not contributing to the welfare of the economy. The advantage of having many young people of working age is going to be a major opportunity available to the economy. In order to take advantage of this demographic dividend, fuller utilisation of the potential of young people is necessary. The employability of young people especially that of women who are residing in rural India, needs to improve. This requires improvement in the level of education and training in India. On the demand side, country needs to generate more job opportunities that can absorb more young workers.

### NOTES

1. The demographic dividend is the accelerated economic growth that may result from a decline in a country's mortality and fertility and the subsequent change in the age structure of the population. With fewer births each year, a country's young dependent population grows smaller in relation to the working-age population. With fewer people to support, people have the potential to be productive and contribute to the growth of the economy that is, a country has a window of opportunity for rapid economic growth. The Chinese experience of economic boom in the last 25 years has relied on the young and productive labour force [Feng and Mason, 2005; Feng, 2011, Pp. 173-190; Du and Yang 2014, Pp. 617-635]. Between 1982 and 2000, China enjoyed an average annual rate of growth in the support ratio of 1.28 per cent, a number that is known as the demographic dividend or the demographic contribution to the growth rate of the economy and accounted for 15- 25 per cent of China's economic growth during this period.

2. There is no guarantee that the abundant working age population along with huge youth population may not be able to contribute to economic development [Bloom, et.al., 2001]. It may lead to a demographic disaster. The Latin American experience shows that Latin America was not successful in utilising the working age population. Although the demographic changes have been favourable for growth since 1970, Latin America has had far less success in creating conditions for economic growth. Between 1975 and 1995, the Latin American per capita growth rate was only 0.7 per cent and has grown at just one-eighth the rate that it has in East Asia which was 6.8 per cent.

3. Rangarajan, Kaul and Seema [2011] put forward the proposition that an increasing number of females are going back to school from the labour force and that this reduces the number of females available for work. Around 44 per cent of females opted out of the labour force to pursue education. Another major reason was found to be to attend domestic duties (around 31 per cent) and 15 per cent of them were in the age group of 0-4, and the remaining categories added up to 10 per cent. Kannan and Raveendran [2012] refute this argument. Their study found that 45 per cent of the decline in the labour force was due to enrollment in education. All the men (15 years old and above) who dropped out of the labour force were accounted for by the additional enrollment for education. But of the 38.83 million women who dropped out of the labour force, only 27 per cent are accounted for by the additional enrollment for education. The remaining women seem to have gone back to domestic activities with or without engaging in a non-monetary work.

4. Serracant [2014] gives a detailed history of the evolution of the concept of NEET in the academic literature. The concept was developed in the UK where young people aged 16-18 years were declared ineligible to receive unemployment benefits and were therefore excluded from the "unemployed" administrative category as all members of this age group were supposed to be employment, in education or training. But many surveys showed that there is a large group of young people who are neither in employment nor in education or training. In a report by the Social Exclusion Unit [1999] of the British government defined the NEET population as young people aged 16-18 years "who neither participate in education or training nor have a job." The age group was expanded later and once consolidated in the UK, the concept was adopted by some international organisations. In 2007, the European Commission published the first figures on this group in its annual report "Employment in Europe" and the OECD incorporated the indicator in its "Education at a Glance" report in 2010 [OECD, 2010]

5. Among the 17 goals that UNDP has set for the countries, Goal 8 (Decent Work and Economic Growth) highlights the target on NEET. For details, see https://www.undp.org/content/undp/en/home/sustain able-development-goals.html

6. The period 2003-08 is termed as a "dream run" of high growth in India. The growth rate was more than 8.46% during this phase, when the manufacturing sector was a major mover of the economy.

7. A caveat: The definition of young people varies across countries in terms of their age group. OECD countries take 15-24 as the age group, while many developing countries like India take 15-29 as the age group that includes young people. 8. European Social Fund [2015] for a detailed analysis of the causative factors behind higher NEET in Europe.

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# ENHANCING SUPPLY CHAINS USING SMART CONTRACTS THROUGH BLOCKCHAIN

## Purva Patne and Avinash Shrivas

Logistics involves planning and carrying out management of goods, services, and flow of information from the point of origin to the point of consumption. Blockchain mechanism provides for a decentralized, shared digital ledger that relies on the consensus of a global peer network in order to aid smooth operations. In this context, the idea of Smart Contracts are essentially self-executing tasks that are coded through the blockchain and executed when a certain condition is met. It is recognised that, even presently, supply chains operate extremely inefficiently because they rely mostly on paper-based transactions. In the system proposed in this paper, it is suggested that by using the blockchain mechanism, smart contracts could eliminate the need for all of the administrative steps, cutting costs and virtually removing all possibilities for error in logistics. In its application, the proposed system can be expected to solve the inefficiencies, say for example, of the transport sector. The documentation process adds more inefficiency to already slow end-to-end transportation. Using blockchain, smart contracts could eliminate the need for all of the administrative steps. In the current scenario of the Covid-19 pandemic practically bringing the world to a standstill, it is of high importance and priority to equip supply chains to connect digitally with authentic and reliable contracts. The proposed system suits the purpose.

#### I. INTRODUCTION

Supply chain management (SCM) is the management of the flow of goods and services. It includes the movement and storage of raw materials, work-in- process inventory and finished goods from point of origin to point of consumption. Supply chain management is an interconnected or interlinked network which deals with design, planning, execution, control and monitoring of its chain activities. The ultimate objective is to create net value, building a competitive infrastructure, leveraging world logistics, synchronizing supply with demand and measuring performance globally.

SCM draws upon heavily from the areas like operation management, logistics, procurement, information technology and strives for an integrated approach. It actually deals with coordination and collaboration with its

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channel partners which are specifically the suppliers, the intermediaries, the third-party service providers (3PL), in a sense, their customers.

This integrates supply and demand management within and across its channels. Supply chain management is an integrating function with primary responsibilities for linking major business functions and major business processes within and across its chain of companies to form a high performing and business model. Logistics management is a part of supply chain management that plans, implements, and controls efficient, effective forward and reverse flows and storage of goods, services and related information between the point of origin and the point of consumption, in order to meet customers' requirements.

Logistics management activities typically include inbound and outbound transportation management, fleet management, warehousing, materials handling, order fulfilment, logistics network design, inventory management, supply/demand planning and management of third-party logistics services providers. To varying degrees, the logistics function also includes sourcing and procurement, production planning and scheduling, packaging and assembly, and customer service. It is involved at all levels of planning and execution - strategic, operational, and tactical. Logistics management is an integrating function, which coordinates and optimizes all logistics activities, as well as integrates logistics activities with other functions including marketing, sales manufacturing, finance, and information technology [Canitz, 2016].

Today, Road transport is the most preferred and popular mode of transport in the supply chain used by suppliers and businesses. Transport companies provide scheduled delivery days and even next day delivery services, depending upon the demand. All kinds of cargo, goods packed or grouped in containers, even scheduled for sea or air transportation, are carted to and from airports/ seaports by road transport. The greatest advantage of road transport that makes it the core lifeline of the transport industry, is its ability to provide door-to-door, from source to destination, warehouse-towarehouse, doorstep services. This is something no other mode of transport can provide. This naturally reduces cartage expense, damages, loading and unloading expenses, and other associated feeder transport costs.

Road transport is most flexible and adaptable with an outreach into the most remote areas that are inaccessible by rail, air or water. Hence, road transport is most

suited for carrying goods and people to and from rural areas which are not served by rail, water or air transport. Hence, transport of cargo between large towns and small villages is possible only through road transport. Road transport is the only transport mode that is viable, economically and otherwise, for short distances. It is way more cost effective and quicker to cart goods and people over short distances by road. Also, delays in transit of goods, due intermediate loading and handling, can be avoided as goods can be loaded direct into a road vehicle and transported straight to their place of destination. In other words, intermediate handling costs and feeder connectivity costs can be eliminated.

Equally important to note that road transport is most suited for speedy delivery. Water transport is very slow. Air and rail transport require too much documentation and formalities and packaging. Also, booking and taking delivery of goods, in the case of railways, air and water transport, normally takes up too much time and is very tedious. In contrast, road transport offers a quicker and a much more flexible and hassle-free option.

India has the second-largest road network in the world, spanning over 4 million kilometres. Presently, road movement constitute the most important

mode of transport in the country, carrying 70% of the country's total freight traffic and 85% of its total passenger traffic. "Deficiency in transport and communications infrastructure is one of several supply chain barriers that act as obstacles for speeding up global economic growth." That is one of the conclusions of a report released by the World Economic Forum (WEF) at the meeting in Davos, Switzerland [WEF, 2013].

Blockchain is a technology that originated out of a branch of mathematics, namely, cryptography. Blockchain is a shared, distributed ledger on which transactions are digitally recorded and linked together so that they provide the entire history or provenance of an asset. A transaction is added to the blockchain only after it has been validated using a consensus protocol, which ensures it is the only version of the truth. Each record is also encrypted (conversion of (information or data into a code, especially to prevent unauthorized access) to provide an extra layer of security. Blockchain is said to be "immutable" because the records cannot be changed and transparent and enables all participants to a trade to have access to the same version of the truth.

Smart contracts are lines of code that are stored on a blockchain and automatically execute when predetermined terms and conditions are met. At the most basic level, they are programs that run as they have been set up to run by the people who developed them. The benefits of smart contracts are most apparent in business collaborations in which they are typically used to enforce some type of agreement so that all participants can be certain of the outcome without an intermediary's involvement [Hudnurkar et.al., 2014, Pp. 189-202].

### **II. STATEMENT OF PROBLEM**

With various entities involved at different stages of the Supply Chain, the presence of multiple decision makers complicates the management process and leads to information asymmetry. This lack of information sharing, and traceability can make it difficult to chart progress, sense and respond to disruptive events, and also affects collaboration among parties.

Very often trucks are partially or fully empty within the delivery routes. A marketplace can end this problem. Truck owners or transport owners [Sriraman et.al., 2009] agents and brokers can post their details on the marketplace. Customers / Consignment owners can also post their requirement on the online platform and the transport providers can place their bids based on it [Warburg, 2016]. Using the empty or unused space can ensure optimum utilization of resources and will also result in an overall reduction in the carbon dioxide emission which, in turn, has a positive effect on the environment.

The growing need for transparent, flexible, and easily adjustable logistics services has fostered the creation of digital brokerage platforms that match a variety of logistics demands with supply. Thus, centralized marketplaces can provide visibility on the information, rates, and services of different logistics providers and enable solutions to be digitally tailored to meet the needs of each customer.

#### **III. EXISTING CHALLENGES**

While on-time delivery of intact packages has always been important throughout the supply chain, it has become even more mission-critical in recent years as omni channel commerce, with its same-day home or retail delivery of customized products ordered from smartphones, becomes more common. Suppliers, manufacturers, distributors, and retailers have had to improve their logistics processes to meet the demand for quicker, more convenient delivery of a wider variety of goods. They also have had to better integrate their processes and systems to improve supply chain visibility [Iansiti and Lakhani, 2017].

Higher fuel prices will significantly affect the cost of wages and transportation for shippers. The cost of adapting to new technology used in the supply chain is high, but it is a requirement to survive in the competitive industry. A 3PL partner will resolve this issue as many of these organizations are already equipped with the necessary technology to increase efficiency [Church, 2017]. Some of these technologies include radio frequency identification for barcoding and scanning (RFID), communication tech like electronic data interchange (EDI) and GPS and material handling technology. Implementing these technologies on one's own is extremely expensive, which is why a business would benefit from partnering with a 3PL provider.

Reverse logistics is required by every e-commerce business. Customers need a way to return items they have purchased if they are dissatisfied with them and this process needs to run smoothly. Without an efficient reverse logistics platform, you can turn off customers and prevent them from ever buying from you again. However, a reverse logistics strategy can be challenging and costly, without the right support. A 3PL provider can help the business in facing these challenges with their pre-existing robust solutions. They can help the business process returns in a timely manner to satisfy your customers and can help you decide what to do with returned items to prevent revenue loss. These solutions may include repackaging unused items for resale or refurbishing items to sell at a discounted price [Tapscott and Tapscott, 2016].

## **IV. SYSTEM DESIGN**

To stay competitive in this emerging ecosystem, it is important for transport service providers to be a part of the Logistics Marketplace. Engaging the customers, transporters, fleet owners, agents and brokers on a single online platform improves efficiency, visibility and networking. This online platform is an important tool for transportation companies, agents, brokers and truckowners to explore new opportunities. Owing to the mechanism of these marketplaces, the movement of freights, booking of vehicles will always be smooth and systematic.

It is an integrated approach- buyers or shipment owners, multiple suppliers, agents, brokers or truck-owners and transporters can get real-time information about the freight movement and status of shipment delivery. The real-time inputs help them in strategizing their business accordingly. This marketplace is perfect for transporting industrial and commercial goods, ecommerce consignments and household items. In short, it is an effective way of reaping high benefits. booking, transport service providers usually do not have the information regarding the availability of trucks and quotation of services. They do not have the power of predictability along with their own terms and conditions of business owing to the nature of prevailing market and visibility in the booking mechanism. Thus, accepting the available quotation is often the only way out. As a result, the consignment owners must absorb high freight rates which often includes many inefficiencies and unproductive empty runs.

The electronic marketplace enables to

In the traditional method of freight provide an end to all these hassles (Fig. 1). The online Marketplace lets transport service providers stay abreast of the real-time information about the freight movements. Tracking features and facilities help in knowing the movement of source vehicles from the to the destination, thus reducing the chances and scope of malpractices like rerouting, pilferage and overloading. Another advantage is that consignment owners can opt for the trucks or vehicles that suit their budget. The smart contract transaction for a vehicle booking, makes it profitable, transparent, and affordable for the truck-owners and shippers, respectively.



Fig. 1. Block diagram of the proposed System

Since it is a horizontal collaborative effort between vehicle owners and shippers, the chance of exploring new opportunities increases exponentially. The pre-defined contracts define the rate and important terms and ensure a predictable environment for operations. The role and responsibility of each stakeholder is clearly explained in these contracts. Improvements in the level of communication and operational efficiency owing to the automated and simplified flow of information are easily visible.

The logistics marketplaces yield benefits for all the partners- transporters, fleet or truck owners, customers, agents and brokers.

- \* Transporters They can get better visibility and real-time insight about the consignments, irrespective of the nature of the vehicle and shipment. Reliable delivery, better management, and superior customer service.
- \* Fleet & Truck Owners Better vehicle and fleet utilization through proper scheduling and real-time

visibility is possible. Infrastructure and unique methodology of this marketplace let even small-time carriers compete with the large companies.

- \* Customers Customers or the shipment owner will have now better control over the process. They can track the vehicles easily and stay within their budget.
- \* Agents & Brokers A transportation broker does not own a fleet, transportation company or a carrier but have a significant role in cargo movement. A logistics marketplace helps them to explore new areas, routes of businesses along with spread of networking.

Efficiency, adaptability, visibility, transparency and simplicity are the major reasons for the transporters, truckowners, agents, brokers and customers to actively participate in this online logistics marketplace Fig. 2 provides an activity diagram of the proposed System.



Fig. 2. Activity Diagram of the proposed System

### V. HOW THE MARKETPLACE WORKS

With the rise in on-demand delivery services, there has also been an increased expectation of a supply chain that is agile, organized, and transparent. A Logistics Marketplace lives up to that expectation. Here, the system helps you choose the best transporter based on your requirement and budget. Since no intermediate party is involved in the process, there is no need to pay any commission fee or additional fee.

Transporters, fleet owners, agents, brokers, or customers, must register with the online marketplace. Customers who need a truck or lorry can post their respective inquiry in the marketplace and transport service providers post their charges based on the inquiry.

For the convenience of transport ser-

vice providers and customers this marketplace provides different functionalities. The whole process can be segregated into following phases:

- \* Planning This phase deals with the customers, agents and brokers who are on the look out of a truck or lorry whereas truckers can foresee route demands.
- \* **Communication** Direct communication between transport owners and customers is possible on this platform which is not possible on traditional form of freight booking. Pre-defined contracts and documents emphasize on transparency and improving efficiency.
- \* **Invoicing** Relevant data are available in a centralized dashboard. Automated invoicing process makes the process smooth.

The marketplace is an effective platform that facilitates the process of hiring trucks and speeds the transportation process. Different features and functionality of this marketplace provide visibility and ensure transparency. Thus, it would be an ultimate solution for choosing the best transporter at a costeffective price and yield high Return on Investment. The project will not only benefit the truck owners or the shippers, but also help the brokers with increased options with the technological support and leveraging their financial muscle in the fragmented market and numerous small scale transport service providers operating in an unorganized competitive environment

The proposed system has a nationwide participatory platform type application approach and provides digital interface for empowerment of all the stakeholders and their empowerment, inclusion and sustenance.



Fig. 3. Blockchain Certificate [PP1] in the proposed system



Fig. 4. Smart Contract Transaction in the proposed system



Fig. 5. Smart Contract Transaction in the proposed system


Fig. 6. Smart Contract Certificate after completion of the Trip- Transaction [PP2] Completion



Fig. 7. Smart Contract Transaction Code

#### VI. CONCLUSION

The use of Smart Contracts - selfexecuting agreements - deployed on the Blockchain can help to increase transparency, traceability, and efficiency across a Supply Chain. They can be used to provide transparent credentialing and reputation management through a Supply Chain, and automatically execute fulfilments and payments [Kwon and Suh, 2004, Pp. 4-14]. This helps to build up trust among Supply Chain partners and reduces time and cost inefficiencies associated with overlapping effort and additional verification checks. It also speeds up the Supply Chain and makes it more agile in managing risks and disruptions, since real-time data can be used to guide decision-making.

#### VII. FUTURE SCOPE

There are still several challenges that must be overcome before Blockchain can reach mainstream adoption. Transport Organizations must be receptive to a shift towards a more open and transparent culture, and standards and regulations must keep pace with the growth of the technology [Beth, et.al., 2003]. If these and other challenges are adequately addressed, it would not be a stretch to believe that one day, Blockchain could fundamentally change the way we exchange value and have the same revolutionary impact that the Internet had when it was first introduced [Warburg, 2016].

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# **PROFESSOR L. K. DESHPANDE: A TRIBUTE**

## Vikas Chitre

Professor Lalit K. Deshpande passed away on 12 September 2020, now almost a year back. He was suffering from Alzheimer for the last few years but used to attend important seminars and lectures. He succumbed to the first wave of Covid-19, at the age of 87.

He was a Professor at the Department of Economics, University of Bombay, and the Director of it when he retired. He was the Conference President of the Indian Society of Labour Economics in 1989, and editor of the Indian Journal of Labour Economics, from 1985 to 1990. He played an important role in strengthening the Institute for Human Development, New Delhi, as Visiting Professor at the Institute from 1998 to 2013. He was also associated with the Indian School of Political Economy from 2003 to 2018, as its Honorary Fellow.

Both his sons have done extremely well in their respective careers. Abhay is Professor at the Stony Brook University in the U.S. and has made remarkable contributions in experimental nuclear and high energy physics; Ashish is a well-known psychologist and psychiatrist in Mumbai. In Lalit's demise, I lost a very close friend. Many readers of this Note would share the same sentiment and continue to miss him. It was his personal quality that he made all his friends feel that he was their very close friend.

I met Lalit first in 1958-59, when I was doing Master's degree and he his Ph.D. at the then Bombay School of Economics. Sudha, later his wife and co-author of many of his research studies, was my classmate. I still vividly remember an incident since when I came to know Lalit closely. I was among some of the fresh M.A. students who used to hold the research scholars with awe and respect. Once when I was looking at a journal in the Department Library, Lalit came to me with a journal in his hand and asked me whether I could help him find an asterisk on the page which he had opened. He had a problem with his eyesight since those early days and continued to have it throughout. I took a careful look all over the page and after a minute's minute search, and to my great sense of success and excitement, spotted the asterisk. Lalit profusely thanked me. At that moment I suddenly realised what research was all about. It was - looking for asterisks....

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Later, Lalit joined the faculty of the employment Bombay School, and retired as Professor and Director at the School. He (often jointly with Sudha) made profound contributions to the study of labour market flexibility, labour market segmentation, effect of liberalisation on employment and incomes of labour, and the role played by the trade unions, in the Indian context. Their study, along with Guy Standing, of the Bombay labour market has been internationally acclaimed. I remember that Professor Nilakantha Rath, then Director of Gokhale Institute, invited Professor Lalit Deshpande in 1983 to deliver the first series of four lectures in the Kunda Datar Memorial Lecture Series, newly instituted by Shri B.N. Datar a well-known labour economist and a respected professional in the Ministry of Labour, Planning Commission, and International Labour Organisation, in memory of his wife. Lalit, along with Sudha, had just completed their study of the Bombay labour market, and talked extensively about it in these most enjoyable lectures. The lectures have been later published by the Gokhale Institute in 1985 under its Kunda Datar Lectures Series.

In these lectures, Professor Deshpande talks about the labour market segmentation in the urban labour market, such as that in the metropolis of Bombay. The study divides the urban labour by its employment into, three segments, namely, the Casual sector, Small Enterprises sector, and the Factory sector. There are two sets of reasons for the labour market segmentation in urban areas, one, due to the various sources of discrimination in the labour market, and the second, because of the nature of the rural urban migration.

Professor Deshpande employed a stepwise multi-variate regression to identify the sources of discrimination leading to significant differences in individual incomes from work in the above three sectors of the labour market of Bombay. He found that the young, the women, the migrants, the untouchables, the unskilled, those reporting Marathi rather than the southern group of languages as their mother tongue, the secondary earners in the family, earned significantly less compared to their counterparts. In earning income, those who had passed the 11th standard had an advantage in the casual sector and those with higher education in the other two sectors. Those with an educated rather than an illiterate father had an advantage in the Small Establishments and the Factory sectors, and those particularly with an educated mother in the latter sector. He characterised those variables which made a difference to productivity, including that due to investment in human capital, (such as age (proxy for

of skill) as supporting the neo-classical theory, and those variables which "an individual worker cannot change by investing in himself" as reflecting the segmented labour market theory (for example, sex, caste, mother tongue, migration status, parents' education, etc.). Examining the ten most important variables contributing to differences in each of the three sectors, Professor Deshpande made a guarded assessment: "...the neo-classical explanation is likely to have more relevance in the Small Establishments and the Factory sector than in the Casual sector". [Deshpande, 1985, p. 25].

While discrimination due to the above-mentioned causes provided, according to Professor Deshpande, the a priori basis for labour market segmentation, he singled out examination of mobility to put forth "the substantive evidence" for it. After a careful examination of the characteristics of the workers from the three sectors in their rural place of origin, he concluded, "the segmentation of urban labour market begins in the villages". [Deshpande, 1985, p. 39]. Not just that, but using the rich data from the Bombay study, he clearly brought out how the lack of inter-sectoral and intra-sectoral, occupational, mobility, helped "continue the stratification of urban job market that due to liberalisation. These findings were

experience), education, training and level began in the villages". Most strikingly, he demonstrated that having to depend heavily on friends and relatives, who would normally also belong to the same sector, for both job information and help in securing jobs, played a crucial role in keeping the casual worker stuck in the same sector. He, therefore, emphasized the vital role to be played by public information agencies working for the casual sector, given that "whatever small role that Employment Exchanges play is predominantly restricted to employment in factories". [Deshpande, 1985, p. 42].

> Noting that the migrants into the casual sector largely came from the landless and those owning less than 2 acres of land, he perceptively observed: "Growth with justice, not growth alone, would end the segmentation in urban centres." [Deshpande, 1985, p. 55]. Thus, growth would not trickle down automatically. It needs to be accompanied by policies favouring the disadvantaged sections of the society.

> Later, at the Indian School of Political Economy in Pune, Lalit and Sudha talked about their study of the short-run impact of 1991-liberalisation on the conditions of Indian labour. They showed the oftneglected positive effects of liberalisation, namely, that the real wages and employment of labour, both increased because of increased demand for labour

based on a detailed, before and after comparison, of the data from the N.S.S. 50th survey Round (1993-94) with those from N.S.S. surveys of the pre-1991liberalisation reform 1983 (a normal year) and 1987-88 (a nearby but drought-affected year). [Deshpande S. and L.K. Deshpande, 1998, Pp. L31-L39].

The Participation Rate for 5+ males increased after liberalisation for rural as well as urban areas, for the usual (i.e., durable employment), current weekly status (CWS) (intermittent employment) and current daily status (CDS). That for the females also did so for the urban areas. but only for the CWS and CDS for the rural areas. The Unemployment Rate and the Index for Underemployment (defined as ((CWS-CDS)/CWS) \*100) for 5+ males as well as females were both lower. for the usual as well as for the CWS and the CDS, for the urban and rural areas, except for the males in rural areas in 1987-88, because of the support through rural public works under the drought conditions. The Index of Underemployment was higher for the females, in both urban and rural areas. [Deshpande S. and L.K. Deshpande, 1998, Table 1].

As the 1991 liberalisation mainly covered industry, trade, and finance, and

as agriculture has been broadly left outside the reform process, it was natural that its impact was felt more in the urban than in the rural area.

Real wages (nominal wages deflated by CPI for industrial workers/nonmanual workers/agricultural workers) were higher after liberalisation for Regular wage/salaried workers as well as casual workers, both in rural as well as urban areas. [Deshpande S. and L.K. Deshpande, 1998, Table 11].

"These conclusions run counter to the fears most critics of liberalisation had expressed regarding its impact on the labour market ...", he concluded in [Deshpande S. and L. K. Deshpande, 1998, p. L. 39], "... we need to face the facts and consider if it is the fears or the facts that we need to bury."

The concept of labour flexibility was further probed in detail in [Deshpande, et.al., 2004] by a larger, more up to date and national rather than a local sample survey, covering firms from nine states across the country. Labour flexibility comprises employment flexibility and wage flexibility. It reflects the dualism in the labour market, characterised by the relative growth of non-permanent jobs, contract, temporary, casual, and parttime employment within non-permanent jobs, and also employment of female rather than male workers. Labour flexibility and the consequent duality in the labour market have increased in India's manufacturing over time and particularly after liberalisation and globalisation. [Deshpande, et.al., 2004]. This process has been adopted to avoid the restrictions imposed by the state regulation designed to provide job and remuneration security, and trade union pressure as well as to cope with the challenges of uncertainty of demand for labour in the face of the ups and downs in it.

Using multi-variate regressions, the authors showed that apart from the identified states and industries, firms increased their total employment or manual employment faster by exploiting labour flexibility (by increasing the share of non-permanent workers or by increasing the share of contract workers), post-liberalisation, more so if they did not have a trade union. [Deshpande, et.al., 2004, Pp. 82-84].

On wage payments, the authors observed: "Controlled for other factors, firms with unions paid the unskilled and the skilled workers about 17 per cent more than those without unions. ...Older firms paid higher wages than that of the new firms. The greater the share of women in employment, the lower was the wage paid both to the unskilled and skilled male worker but the higher the share of contract, the higher was the wage paid to the skilled worker." [Deshpande, et.al., 2004, p. 123].

"The macro level balance sheet does not help us in knowing union influence on wages and industrial relations at the plant level." [Deshpande, et.al., 2004, p. 125]. Hence this survey of firms with national coverage is of great importance in understanding the spread, the character, and the influence of the unions in the country. A vast majority, 71 per cent, of the sampled firms did not have a union. Twenty per cent had only one union and only 8 per cent had multiple unions. A massive 88 per cent of the very large firms, employing more than 1000 workers, reported union presence. Cotton textiles industry had the maximum union presence, with the largest percentage of firms in it reporting worker protests, while manufacture of beverages and tobacco had the lowest union presence, with the smallest percentage of firms in it reporting worker protests. Still, the absence of a union did not mean absence of worker protests. A sizeable 19 per cent of the firms, with no union, reported worker protests. Among the sampled States, Kerala and West Bengal had the largest percentage of unionised firms, and also the highest percentage of firms reporting worker protests. Bihar, Delhi, and Uttar Pradesh had the smallest percentage of unionised firms. Gujarat,

Delhi, and Uttar Pradesh had the smallest percentage of firms reporting worker protests. Firms with a higher percentage of flexible labour (non-permanent and female) were less likely to have been unionised.

On the much-debated question of removing the exit clause of the Industrial Disputes Act, the authors favour raising the number of workers above which the regulation would apply, rather than scrapping it altogether. They warn that the insecurity of employment and income that total deregulation would engender "mindboggling". would be Thev observed, reflecting the balanced view characterising Professor Deshpande's writing: "It goes to prove that too much flexibility may be as bad as too little of it." [Deshpande, et.al., 2004, p. 150].

Professor Deshpande had a deep understanding of labour statistics of India. I always used to invite him to give special lectures on measurement of unemployment in India in the U.G.C.sponsored refresher courses for university and college teachers, organised by the Gokhale Institute. I vividly remember Professor Deshpande lucidly explaining the intricacies of definitions and interpretations of the various constructs used in the National Sample Surveys.

He chaired the Study Group on Labour Statistics, appointed in 1999 by the Ministry of Labour, Government of India. The Study Group made some path-breaking and extremely useful recommendations, most bearing a clear imprint of the Study Group's Chairman's thinking, and many of which may not have been implemented till date. For example, "... a methodological study/survey will have to be mounted through the Agency NSSO to evolve methods for capturing the problem of child labour." [Government of India, 1999, p. 79]. "It is difficult to collect information on bonded labour because it is an offence to keep anyone in bondage....household surveys can be conducted to ascertain socio-economic conditions which lead to the practice of bondage." [Government of India, 1999, p. 79]. "...in the liberalised and globalised economy of the future, the employment of flexible categories of workers is expected to grow. The Bureau should, therefore, consider inclusion of part-time workers [and apprentices] also in the occupational wage survey." [Government of India, 1999, p. 81]. "Vast data is being collected for the compilation of CPI Numbers. This is not put to any use other than compiling the CPI Numbers. The Labour Bureau should make analytical studies of the underlying economic factors in different regions of the country as reflected in the price data." [Government of India, 1999,

Pp. 81-82]. "The data base on the need of humour was well-known among his training of workers is weak which needs to be developed in respect of each state/industry." [Government of India, 1999, p. 84]. "A review of the data needs for the implementation of emerging labour laws has to be undertaken. There is no regular mechanism to collect data to review the working of the Contract Labour (Regulation & Abolition) Act, 1970, Equal Remuneration Act, 1976, Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Act, 1979, Child Labour (Prohibition & Regulation) Act, 1986, Payment of Gratuity Act, 1972, etc., in the country. The data under these Acts should be collected on regular basis." [Government of India, 1999, p. 84].

This is a virtual agenda of research themes and work for a generation of labour economists and NSSO and Labour Ministry officials.

Professor Deshpande always made probing comments in seminars, critically analysing the underlying historical background to social and economic questions.

He was an affectionate friend, and an engaging narrator of incidents and episodes amidst friends. His sense of friends. Behind that was his intense humanness, which was exceeded only by his humanitarianism. Above all these qualities was his utmost humility.

Once, he asked his son Abhay's Professor in the U.S., appreciating the Professor's work and achievements. "What have I produced?" Lalit would proudly tell us that Abhay's Professor merely pointed to Abhay admiringly and said, "You have produced him". The Professor probably did not know Lalit's work, and Lalit did not tell him about it. He will be always remembered for his insightful work on the Indian labour market, and for his warmth.

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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:

- Prof. V.M. Dandekar's Articles published in between 1951 to 1958
- 2. RESERVE BANK OF INDIA, All-India Rural Credit Survey District Monographs - POONA (BOMBAY STATE)

# NON-MARKET PRODUCTIVE ACTIVITY AND ITS MEASUREMENT

## V. M. Dandekar

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Society Meeting, International Statistical Conferences, Washington 1947, while discussing the comparability of national income estimates of countries with different industrial structures. Kuznets made a plea to make the national income estimates of pre-industrial countries more inclusive particularly in respect of the extra-market productive activity existent in large measure in their economies. As Kuznets pointed out "in a decentralised. agricultural, self-subsistent, economy many productive activities take place within the family or the local community without finding overt expression on the market.... The range of such non-market activities is extremely wide, extending from the production of primary food and other materials, through their fabrication, to recreation, education, religion. ...in scrutinising the contents of the net output of industrial countries we find a surprising variety and volume of commodities and services that represent nothing but professional, i.e., business pursuit of productive activities for which there is a clear counterpart within the family and community life of pre-industrial economies. Each commodity, category except those that relate to such products of industrial civilisation par excellence as

In a paper read before the Econometric ociety Meeting, International Statistical onferences, Washington 1947, while scussing the comparability of national come estimates of countries with difrent industrial structures, Kuznets ade a plea to make the national income timates of pre-industrial countries ore inclusive particularly in respect of e extra-market productive activity istent in large measure in their econo-

> Though this appears to us a slight overstatement of the case, the need for inclusion of products of such activities in the national income estimate of a preindustrial country cannot be disputed once a comparison between it and an industrial country is attempted. There is, at the same-time, no reason why these activities should not be included on their own, and the national in come estimate made more, inclusive, if it can be, quite apart from the requirements of comparability. The conventional rules of national income accounting covering only the products of the business and public economy while excluding most products of the family economy, though perhaps convenient, are obviously arbitrary. Products of the family economy are usually excluded on the ground that their production is guided by rules and motives

different from those governing business enterprises and hence that there is no good basis for theft measurement and evaluation. This, however, cannot be a valid reason for exclusion of important economic activity from a measure of national income if the latter is conceived as the net output of commodities and services flowing from the country's productive system into the hands of ultimate consumers or into net additions to the country's stock of capital goods. The only justification for the exclusion of any items would be the presumption that what, is excluded is negligible in comparison with what is included. In the above case this is perhaps true for highly developed and market-oriented industrial economies. But for pre-industrial countries with relatively self-subsistent family or communal economies, it would be difficult to make this latter assumption. It is therefore necessary to assess the contents of non-market productive activity in a pre-industrial economy and examine the possibilities of its measurement and evaluation.

Following Kuznets (*National Income and its Composition*, Vol. I), we might classify all economic goods as under:-

- 0. Goods exchanged for money on private markets.
- Goods sold by public agencies on markets characterised by compulsory powers of public authorities.

- 2. Goods entering barter exchange (payments in kind by enterprises to employees or other participants in their activity.)
- 3. Goods not appearing on markets.
  - a. products retained by producers for their own consumption (especially important for farmers).
  - b. services and products of individuals outside the market system, flowing to other individuals. (especially services of housewives and other members of households.)
  - c. services of individuals outside the market system to themselves (largely personal self-servicing which accounts for a great deal of active life outside 'working' hours.)
  - d. services of commodities owned and used by consumers aa. residential real estate,

bb. other consumers' durable commodities,

cc. other consumers' goods.

e. services, of publicly owned commodities to ultimate consumers, and business agencies, e.g., roads.

The definition which Kuznets adopted and which is now more or less common to all national income measurement is based on the inclusion of 0, 1, 2, 3a, 3daa and 3e and thus covers all products of the business and public economy. It covers some products of the family economy in so far as (3a), i.e., products retained by producers for home consumption are included; in practice, however, this category is usually restricted to products of agriculture retained by farmers for home consumption. Let us therefore examine more closely the contents of those categories of economic goods which are excluded and the omission of which is likely to affect more unfavourably the national income estimates of pre-industrial countries.

They are:-

- 3b. Services and products of individuals outside the market system, flowing to other individuals.
- 3c Services of individuals outside the market system to themselves. For convenience of discussion we shall subdivide the category (3b) into two classes as under:-
- 3b.a Services and products of individu
  - a. als outside the market system, flowing to other individuals outside the family; we shall henceforward refer to this as non-market productive activity within the community.

3b.b Services and products of individu-

 b. als outside the market system, flowing to other individuals within the family; we shall henceforward refer to this as non-market productive activity within the family. We shall now consider 3b.aa, 3b.bb and 3c in that order and examine their contents.

When a number of families or households come together and participate in an economic activity, we should normally, expect them to act on more or less business principles. Therefore, if we define market in sufficiently broad terms to cover all arrangements between different families for exchange of their products, services and labour, hardly any important productive activity is conceivable, the results of which are neither consumed or retained for consumption within the family nor appear on market of one form or another. In the most highly developed market, an exchange of goods or services is split up into two separate acts of sale for and purchase with money. In less developed markets of self-subsistent local communities, exchange often takes place more directly, that is without the intervention of money. Local communities in pre-industrial countries are selfsubsistent only in this sense; namely, that a large part of the exchange of goods and services that takes place between different families, is carried on more directly by means of barter transaction. There is no reason to believe that these transactions are carried on, on anything but sound business principles. If therefore, market is supposed to cover barter transactions, almost all productive

activity within the community, results of which appear outside the family, is really not non-market, so that even in a preindustrial economy, the content of the category (3b.aa) would be indeed quite negligible. In the above classification of economic goods we have a whole category (2) of goods entering barter exchange and most of the productive activity of the so-called self-subsistent pre-industrial communities should appropriately appear here.

It must of course be emphasised that in a pre-industrial economy, the category of goods entering barter exchange will be relatively large and hence that particular attention and care must be given to their measurement and valuation. About the valuation of goods entering barter exchange, the fundamental point to be decided is whether or not barter exchange, adds to the economic value of the commodities exchanged. In so far as both parties show preferences for the commodities they receive over the commodities they give away, it cannot be denied that the exchange in fact adds to the economic value of the commodities. How much, must be decided in relation to what the mechanism of modern market is supposed to add to the economic values of commodities. It is the difference between prices received by producers and those paid by final consumers that is supposed to represent the value added by

the modern market, that is, by trade, transport, storage, etc. The difference of course represents the gross value added, for there are costs involved in the process. The net values added are those, obtained by deducting these costs from the gross values. Returning to the goods entering barter, can we suppose that the barter exchange achieves about the same purpose as is done by a more elaborate market? This might be disputed; it might be said that though barter serves the essential purpose, it could not be supposed to do it with the same efficiency as the modern market; for instance, the choice of commodities with which a person might exchange his own might be considered necessarily limited in barter than in modern market. Though in general this point must be conceded, it has not the same validity when we consider the barter of primary commodities, such as foodgrains and it is in these primary needs, either of consumers or of producers, that barter most often takes place. We might therefore say that barter in pre-industrial communities, serves about the same economic purpose as does the modern market and hence it might be supposed to add to the economic value of the commodities as much as does the modern market, that is, the equivalent of the difference between producers' and consumers' prices. Further while modern market involves costs, the barter involves

almost none; so that the net values added by barter are equal to the gross values added by the modern market.

The simplest method to evaluate the economic services implied in barter, therefore, is to value the commodities entering barter at, consumers' prices, that is at prices actually paid by consumers purchasing the commodities for money. This suggestion is of course on the same footing as one by which we evaluate the products retained by producers for their consumption at consumers' prices. When in a self-subsistent family economy, a farmer produces as much as possible for home consumption and so much less for the market, he in fact short-circuits the entire mechanism of exchange. He does it only at the expense of a smaller degree of specialisation in his crop production and consequent smaller production output. When therefore we value his output, even though consumed at home, at consumers' and not at producers' prices, we indeed compensate him for his lower production output due to lack of commercial specialisation.

The total production of a commodity might be divided into three parts: (i) the part exchanged for money; (ii) the part entering barter; and (iii) the part retained by producers for their own consumption both as producers and consumers. The first part is of course valued at prices paid by consumers and if we adopt the above suggestions, we in fact agree to evaluate the entire product at consumers' prices. If we do this and in fact evaluate the entire product at consumer retail prices, we also cover, it should be noted, yet another important economic activity of the family, namely, an element of trading which often appears in the family economy. It is not infrequent, particularly in preindustrial countries, that families buy wholesale their annual requirements of primary commodities such as foodgrains, pulses, salt, chilies and other condiments. The storage and upkeep of these annual stocks of consumer goods of course demands considerable attention of the housewife. In pre-industrial economy, it is the family therefore which to a considerable extent provides the storage and capital for stocks of commodities, a function which in industrial countries would normally be done by the professional trader. It is in the fitness of things therefore that these family services, are valued and added to the national income. This is achieved by evaluating the entire product at consumer retail prices, even though some consumers might have bought it at wholesale prices. These services provided by the family in preindustrial economies are of course not without cost; for we muse surely expect some losses in the handling and, storage of stocks, by numerous families. Data are

almost wanting on this point, but if transport, which must of course be netted available, deductions could certainly be by deducting corresponding costs; (ii) made with justification. imputed value added by the advantages

Retail consumer prices are different from place to place aud are also different at different times of the year. Available data on consumption of different commodities at different places should therefore he made use of and the retail prices at different places accordingly weighted; in the absense of data, the retail prices at different places might be weighted by the population they are supposed to cover. As regards averaging of prices at different times of the year unless the consumption of the commodity is different in different seasons, simple average of the periodic prices might be used: otherwise data on seasonal consumption would be necessary.

Direct estimates of total physical production are available for certain commodities, such as, major agricultural and livestock products; they are of course inclusive of all the three important distributive categories, namely, (i) the part exchanged for money; (ii) the part entering barter; and (iii) the part retained by producers for their own consumption both as producers and consumers. Therefore if the entire product is valued at retail consumer prices we shall have added to their gross production values, (i) gross value actually added by trade and by deducting corresponding costs; (ii) imputed value added by the advantages of the barter economy; and (iii) imputed value added by self-subsistent family economy involved in the use of own produced goods and also borne element of trading existent in the family economy. It might be thought therefore that separate physical estimates of the three distributive categories would not be necessary. This is, however, not true; firstly, some of the production costs are themselves incurred in kind, that is by means of barter payments and these must be appropriately valued and deducted in order to obtain net production values; secondly, professional trading will involve a number of activities other than the dealing in commodities of which direct estimates of production are available, while the costs will often be joint; thirdly, the barter transactions are not always of a kind where both parties are final consumers, while it is only in such cases that goods entering on both sides can be valued at retail consumer prices. Therefore, even when direct estimates of production are available, it would be necessary to secure its breakdown into the three principal distributive categories.

Direct estimates of physical production are not always available. In the case of services not resulting in tangible goods, such as the services of barbers,

washermen, teachers and medical men. this is of course impossible and the approach will necessarily have to be through personal incomes of those engaged in these pursuits. Even in the case of physical goods, direct estimates of total physical production is often difficult; such is the case, for instance, of minor agricultural crops not amenable to techniques of crop-cutting experiments, particularly of garden produce which is, not harvested in one single operation but picked or plucked several times in the season and often for immediate home consumption. Direct estimates of production of farmyard manure and other livestock products such as skins and bones are also difficult. In these cases, the measurement of the total product is often facilitated by estimating separately the three distributive components and their sub-divisions.

Independent information relating to the three distributive categories and their sub-divisions is available only with the families and must be obtained from a survey of their business and personal accounts. In actual practice however almost no accounts are kept and the information has to be collected by field enquiries. Fat clarity and convenience of the investigator and for consistency of treatment of various transactions to which the household is a party, it is often useful to construct the collected information in the form of accounts, implicitly maintained by the households. In a Memorandum submitted to the National Income Committee. Government of India. (published in Accounting Research, Vol. II, No. 4.), the author suggested a set of accounts in which this information might be constructed and which, when consolidated for all households, would produce the Sector accounts of the Household Sector, in a manner comparable with the working system of social accounts set out in the Report of the Sub-Committee on National Income Statistics of the League of Nations Committee of Statistical Experts. The bases of the proposals made therein are that (i) all households should be grouped in one sector, which might be termed the Sector 0; and that (ii) a household should be presumed to keep four separate accounts: Operating and Revenue accounts being the, current accounts relating respectively, to business and family economy of the household; and Capital and Reserve accounts being the capital accounts relating to the business and family economy of the household. The contents of the four accounts are set out below for ready reference; serial numbers of the items appearing are those given to similar items in the 'Working System of Social Accounts' referred to, while items marked with asterisk are new to Household Sector.

1. Cash proceeds of sales.	5. Cash payments for factors of production.	
2. Subsidies.	(a) wages, salaries, etc.	
3. Transfers from capital account in respect of:-	(b) interest.	
(a) production receipts.	6. Cash purchases of goods & services. 7,8 & 9. as in Sector I.	
(b) proceeds in kind ofbarter sales of services.	10. Transfer to capital account in respect of inventories taken	
(c) work in progress & unused material.	over for-	
	(a) Payments in kind for factors of production:-	
	(i) wages, salaries etc.	
	(ii) interest.	
	(b) barter purchase of goods and services.	
	(c) use in production.	
	(d) cash sales.	
	11. Transfer to capital account in respect of depreciation	
	& obsolescence.	
	12. Transfer to revenue account of persons in respect of bad debts.	
	13. Transfer to revenue account of surplus.	
4. Total receipts.	14. Total payments.	

### **Operating Account**

## **Revenue Account**

198.	Wages, salaries, etc. (a) Cash.	212.	Cash payments to factors of production. (a) wages, salaries, etc.
	(b) Transfer from reserve account in respect of wages received in kind.	213.	Cash purchases of goods and services.
199.	Interest. (a) Cash.	214	to 221. as in Seater IV. 27, 28 - as in Sector I.
	(b) Transfer from reserve account in respect of interest receipts in kind.	*	Transfer to reserve account in respect of (a) payments in kind to factors of production.
200	to 210 except 202. as in Sector-IV.		<ul><li>(i) wages, salaries, etc.</li><li>(ii) interest.</li></ul>
202.	Transfer from operating account of surplus. 21 & 22 - as in Sector I.	29.	<ul><li>(b) barter purchase of goods &amp; services.</li><li>(c) final consumption.</li><li>Transfer to reserve account of surplus.</li></ul>
211.	Total receipts.	223.	Total payments.

#### **Capital Account**

31.	Transfer from operating account in respect of inventories taken Over.	36. Payments for factors of production.	
32.	Transfer from operating account in respect of depreciation and obsolescence.	<ul><li>(a) wages, salaries, etc.</li><li>(i) cash.</li><li>(ii) in kind.</li></ul>	
33.	Transfer from revenue account in respect of property insurance claims.	<ul><li>37. Purchases of goods and service.</li><li>(a) cash.</li><li>(b) barter.</li></ul>	
34.	<ul><li>Transfer from reserve account</li><li>(a) in respect of net withdrawals.</li><li>(b) to balance the account.</li></ul>	38. Net purchases of existing equipment and asseted.	other
*	Imputed receipts in respect of (a) payments in kind for factors of production. (b) barter purchase of goods and services.	39. Transfer to operating account in respect of produ receipts, etc.	ction
35.	Total receipts.	40. Total payments.	

### **Reserve Account**

224. Transfer from revenue account of surplus.	232. to 236 - as in Sector IV.
225 & 227 as in Sector IV.	26, 47 and 48 as in Sector I.
41. as in Sector, I.	49. Transfer to capital account.
* Transfer from revenue account in respect of	(a) in respect of net withdrawals.
payments to factors of production, barter pur-	(b) to balance that account.
chases, etc.	
	* Transfer to revenue account in respect of payment to
	factors of production received in kind.
	87. Net purchases of gold and silver bullion.
46 Total Receipts	54 Total payments
	54. Total payments.

Barter is peculiar to the household sector and we shall briefly describe here how it is proposed to be treated in the household accounts. It is possible to treat barter as a sale & a purchase from both ends with indirect or hypothetical intervention of money. However, this treatment appears to be too artificial and hence

a more direct treatment is proposed. For this purpose, four types of barter transactions are distinguished. They are:-

 (i) Barter transactions which might be regarded as purchases from both ends; e.g., when fodder is exchanged for foodgrains, we might say that one has purchased purchased fodder.

- (ii) Barter transactions which are in the nature of a purchase from one end only and a sale at the other; e.g., when a farmer pays in kind the artisan services of a carpenter, the carpenter sells his services and the farmer purchases them but the farmer cannot be regarded as selling his foodgrains and the carpenter as purchasing them.
- (iii) Payments in kind to factors of production; e.g., wages and interest paid in kind.
- (iv) We might, if we like, consider use of own produced goods as a degenerate ease of barter; e.g., feeding of home grown fodder to livestock own or consuming homegrown foodgrains. We shall consider their treatment one by one.

Numerous barter transactions are of such a nature that they might be regarded as a double coincidence of wants and hence purchases at both ends. The purchase might be either on business account, as of fodder, or family account, as of foodgrains. It might also be either on current or on capital account of each type; thus it might be fodder or an agricultural implement; or foodgrains or household utensils. The purchase is shown in the accounts of both parties, by

foodgrains while the other has Thus fodder purchase is debited to the operating account; purchase of implement to the capital account; of foodgrains (for home consumption) to the revenue account and of utensils to the reserve account. Debit in the operative account (item 10.b above) is made by means of a transfer entry from capital account which is credited to that account (item 31.b); similarly the debit in the revenue account (\*.b) is made by a similar transfer credited to the reserve account (\*.b). The purchase of implement is debited to the capital account (37.b) by means of an internal transfer (\*.b); the purchase of utensils is treated similarly in reserve account but the items are not shown explicitly in the above statements. All the items are valued at retail consumer prices.

A marginal case often appears, the treatment of which is not explicit in the above system of accounts. This occurs when a farmer exchanges foodgrains for salt and sugar from the village shopkeeper. His revenue account will of course be debited as before (\*.b) and the salt and sugar will be valued at retail consumer prices. The reserve account will be accordingly credited, but here the foodgrains will not be valued at retail consumer prices but at wholesale producers' prices. Of course, the entries must balance bat here it is the foodgrains valued at wholesale prices which must means of debit in the appropriate account. equal the salt and sugar valued at retail

prices. In practice, there is little difficulty, for usually the quantities of either the foodgrains tendered or the salt and sugar received are available. Analytically the case is important because if the foodgrains are valued at retail prices, we shall not be leaving any margin for the trader when he sells or exchanges them again.

Barter transactions which can be regarded as purchases only at one end while as sales at the other are of particular importance from the point of view of certain institutions as they actually exist in pre-industrial economies. In many parts of India, for instance, certain artisan, community and personal services are maintained by the agricultural communities by means of contributions in kind at harvest. In this category come such artisans as the carpenter, smith, cobbler and the rope-maker, all of whom are necessary to maintain and keep in repair the implements of farming. The system also covers community services such as watch and ward and personal services like barber, washerman, butcher and priest. The traditional remunerations to them are thus in the nature of barter purchases of services. Besides these, there would of course be numerous cases where services are paid for in kind.

In all these cases, the farmer is undoubtedly making a purchase and accordingly his operating or revenue

account will be debited, as in the previous case, by means of a transfer from the capital or the reserve account. The important point now is that the services as such cannot be valued except in terms of the payment made, in this case, say the foodgrains, and the value of the latter will depend upon how we evaluate them. Evaluating these payments at retail consumer prices would imply that the artisans purchase the commodities they receive. This is far from true; the artisans sell their services and receive payment in food grains, whether or not they need them. The total remunerations accruing to some, of the more important artisans, like the carpenter and the smith, are often of the same size as the production of an average cultivator; in fact many of them have fair-sized saleable surplus of foodgrains and left to themselves they surely would not purchase all their receipts. In other cases, though the total receipts are not as big, they are usually in terms of the staple foodgrains part of which must be exchanged for other necessities. Many of the community artisans and services often own a plot of land and are in fact part-time farmers; in such cases, their annual receipts in kind as artisans are not on a different footing from their production receipts as farmers. In the system of accounts, the production receipts of farmers are credited to their operating account, (item 3.a) by means of a transfer from capital account (item 39.a). The

original production receipts are valued at harvest or producers' prices so that the values to be added to them while they pass from the producers to the consumers could be added at appropriate stages. We now propose that the annual and other receipts in kind of artisans and services should be termed 'proceeds of barter sales of services' and should be treated as original production receipts; in other words, they should be valued at harvest or producers' prices. In the operating account of the farmer making the payment, the debit will therefore be valued at harvest prices and not at the retail prices.

Another case of barter purchase of services is to be found in the system of rentals paid in kind. In accordance with, the recommendation made in the 'working system of social accounts' referred to above, rentals are regarded as purchase of services rather than payment to factors of production. Therefore when rentals are paid in kind, as they are in cases of share-renting, it is to be regarded as a barter purchase of service. The rentals paid in kind are therefore valued at harvest or producers' prices.

Thus we might say that in the case of barter sale of services, we appropriately evaluate the services involved but we do not attach any additional economic value

to the particular institutional arrangements by which these transactions take place. The barter in this case is not in general a double coincidence of wants but merely a convenient mode of payment for a purchase. The, arrangements seem, to work rather well and it is not impossible that substitution in their place of the modern monetised market might create considerable hardship to all concerned. It is difficult, however, to see what economic consideration pan be shown to these institutional arrangements.

Barter payments to factors of production might be classified, as usual, into two categories. One is the wages and salaries in kind, including wage supplements; the other is the payment of interest in kind. The first is universal in a backward economy; the second is not uncommon. It refers to two practices. One is the loan in terms of grain which is repaid in kind, with interest in kind added. Towards the end of the agricultural season, small cultivators often run short of their grain requirements. It is then usual for them to borrow grain which is returned together with interest after harvest. The other practice is more difficult to handle statistically. Often money loans are secured by a plot of land or a house or a plough or a milch animal which passes into the physical possession of the lender who enjoys the income therefrom in lieu of the interest on loan. Both are however

interest payments in kind. To the extent that these are payments to factors of production, they are of course debited to either the operating (item 10.a) or the revenue (\*.a) account of the household making the payment. As for the receipts, it is customary to treat the payments to factors of production as revenue receipts and not as business receipts of those receiving the payments. This, is in accordance with the convention not to treat persons as business enter prises selling their labour, and to treat liquid assets of a household as personal assets rather than business assets. The payments are therefore receipted to the revenue accounts of those receiving them (items 198.b and 199.b) The relevant point now is to decide the basis of valuation of these receipts. Considering first the wages in kind, having regard to the status of those receiving the wages, the receipts seem to be more often for final consumption than for resale. This is certainly true of wage supplements and wages paid in staple foodgrains. It therefore seems appropriate to value them at retail consumer prices. This is not quite true of the wages paid in commercial crops such as oilseeds, cotton, tobacco, etc., and there might be some justification in valuing them at producers' prices. For consistency and simplicity of treatment, however, we recommend that all wages in kind should be valued at retail prices. As for the interest paid in kind, it seems more

appropriate to assess its value from the point of view of the person making the payment. Thus considered, it is obvious that the payment should be valued at retail consumer prices, for the person making the payment would be more often one who is short of the commodity he is making payment in. We thus propose that barter payments to factors of production should be valued, at retail prices. In so far as they form part of the net values added by the enterprises making these payments, we might say that the values added implicitly by the barter arrangements have been taken into account.

Finally we have, the degenerate case of barter, namely, of home-consumption of own produced goods. The consumption might be the use, of raw materials or intermediate products in the process of production, such as feeding of the homegrown fodder to own livestock or putting farm-yard manure in own fields; or it might be final consumption of own production, such as consumption of foodgrains. The corresponding debit is made to either the operating account (item 10.c) or to the revenue account (item \*.c) as the case may be. The valuations at both places should of course be at consumer prices.

This completes the survey of barter or the non-monetised transactions. The self-subsistent economy of pre-industrial

transactions and we have discussed their nature in some detail so that their precise economic content might be seen. Among these, it is only those transactions which for anything like merry-making; and might be conceived as double coincidence of wants that seem to add to the economic value of the commodities exchanged. Though these are numerous, all barter transactions are by no means of their kind. In particular we have the institutional arrangements by which the local community secures artisan and other services; these are best looked at as only convenient mode of payment peculiarly suited to pre-industrial economies but not directly adding to the economic value of the commodities being paid in. Therefore, beyond the economic value attached to certain types of barter transactions, there seems little economic activity in pre-industrial community which is extra-market in the sense that it is carried, on as anything but professional pursuits. Certainly, 'recreation, education and religion' are not among those which are provided for by extra-market economic activity in the community life of pre-industrial societies. There is apparently an insufficient of appreciation the extreme individualistic character of agricultural communities and the surprising absence of any communal life among them. First considering recreation, barring perhaps some of the pre-agricultural or tribal

communities is characterized by these communities, community singing or dancing is almost absent; except on one or two semi-religious festivals in a year, the people in fact rarely gather together these occasions are characterized by marked market activity. Cart-racing is enjoyed in some places but that is usually once a year. Wrestling and cock-fights take place in fairs and festivals but it is almost always by professionals who receive prize-money; it is therefore not without explicit costs to the community. Apart from the technical and professional knowledge passing from father to the son in hereditary professions, there is little of formal education; and whatever exists is in the hands of professionals. Almost all religious services including those attached to marriage and death ceremonies are practiced by professionals and are explicitly paid for; in fact, almost no religious observance in the family is possible without the employment of a professional intermediary. I should perhaps hasten to add that this is the description of the conditions in India as they are known to exist.

> We shall now turn to the next category of non-market productive activity. (3b,bb), namely, services and products of individuals outside the market system, flowing to other individuals within the family. The institutional arrangements by means of which a number of artisan,

community and personal services are secured in a pre-industrial community, though not directly adding to the economic value of the product of the community, have a profound influence on the family economy, an influence most derogatory to the conduct of productive economic activity within the family. Due to the fact that there are artisans like the carpenter, smith, cobbler and rope-maker in the community service, paid annually or at harvest, the farmer does not undertake the manufacture of even minor implements or repair and maintenance of the others. Maintenance or repair of implements is thus not a family product. As to household utensils, brass, copper and other metal ware is of course not a family product; in fact, it is most often purchased in the more regular market outside the country. As to the earthen ware, it might be thought that this is a family product; that is not true, as the potter who is under obligation to provide all families with a certain, number of earthen pots annually is in the community services. Drawing of water from the wells is of course usually done by the housewife; but here again, wherever conditions of drinking water are difficult, and the sources scanty and far off, a water-carrier is included in the community services. Barber, washerman, butcher, priest and watchman are almost always in the community services, and as will be seen the men-folk in the family arc left with very little to do, except their professional activity. It will be seen, on closer consideration of the case, that the non-market productive activity of the family is almost entirely confined to the activities of the housewife.

Before we proceed to examine the contents of the non-market activity within the family and the possibilities of their measurement, it is necessary to draw a distinction between (3a), namely, products retained by producers for their own consumption and (3b.bb), namely, products of the family not appearing on the market including barter exchange. The former is customarily included in the national income, the latter is not. When a farmer consumes part or whole of his farm produce or the products of his livestock, they are termed 'products retained by producers for their own consumption' and are included in the national income. On the other hand, when the housewife cooks for the family or the father teaches alphabet to his children, these are termed 'activities within the family' and are not included. As will appear, the distinction between the two is rather thin and in fact is more operative than conceptual; it is operative in the sense that it is based on the convenience or facilities of measurement. With the available statistical data, it is possible to obtain direct estimates of production of certain commodities; when this is so, the

product retained by producers for their own consumption is merely a part of the total and there is little difficulty of its being included in the national income total. Direct and inclusive estimates of production are, however, not always possible, particularly in respect of services; such for instance are cooking, or preparation of food, washing, teaching, tailoring and nursing. Direct estimates of total production of these services or their resulting finished goods are not usually available. It is also difficult to make such estimates, and to the extent that a considerable part of these services never appears beyond the family, any attempt to make estimate, will generally involve intensive family living studies.

Such family living studies directed to obtain an inclusive picture of non-market productive activity within the family, must be sharply distinguished from the usual family budget studies. The latter are directed towards an enumeration of transactions to which the family is a party; the former must concern themselves with the identification and measurement of actions within the family which are likely to be conceived of as economic activity. The identification of the productive or economic activity will in the first instance involve its definition as distinct from active life in general. It is difficult to draw this line and the distinction will have to be more or less

arbitrary and again based on the relative quantitative importance of the activity and the possibilities of its identification and measurement. How great are the difficulties of definition so as to enable unambiguous identification and measurement by a number of fieldinvestigators will be appreciated by all who have experienced them in defining even such apparently concrete activities as 'farm activity'. The decision must therefore be in the nature of a detailed list of activities which it is proposed to be regarded as productive and hence included in the national income.

Next problem is that of valuation, that is, of imputing economic value to these activities. As will be seen, in many cases the activities concerned are in the nature of services the results of which are not tangible goods. Where they are so, as in the case of cooking, tailoring, etc., it might be thought that attempt might be made to estimate the quantities of the resulting products and evaluate them at their market prices. The resulting products will however be found to be too various. too complex and too un-standardised to be counted or otherwise measured and priced. Yet another difficulty in this. approach would be that if the final products are to be measured and evaluated, the same must be netted by taking account of the materials consumed during the process. Thus with

domestic cooking, not only the final products but also the quantities and values of raw materials such as foodgrains, raw meat, and fuel used in the process must be noted. This is obviously too elaborate and complicated a procedure for national income measurement and is likely to cause intolerable interference with family life, though, of course, investigations are not unknown where investigators are required to enter the kitchen and measure the materials being cooked.

The simplest measure of the economic activity within the family appears to be the time spent in these activities by the members of the family. While some of the activities like cooking are regular, others like collection of firewood are irregular; some others like repairs to residential houses are seasonal while some like nursing and medical care are even accidental. The measurement will therefore involve keeping almost day to day time studies for all members of a family; the time unit being at least as small as an hour. In the result, so many man-, woman-, and child- hours must be divided at least into three categories: (i) Spent in pursuit of business enterprises, sharply defined; (ii) Spent in economic activity within the family as listed in detail; and (iii) the remaining as spent in living the life.

The valuation of these man-, woman-, and child- hours spent in economic activity within the family will perforce be arbitrary. With a view to making allowance to the irregular and easy conditions of working, they might be valued at rates somewhat lower than their counterparts in a business enterprise. If a functional analysis of the labour hours spent in productive activity within the family is available, the same might possibly be valued at different rates.

Finally, we might consider the category (3c) of goods not appearing on the market; namely, services of individuals outside the market system to themselves. These consist of such activities as washing, shaving and singing for amusement. Unless we wish to include almost all active life under economic activity and all its positive results under economic goods, we must surely draw a line somewhere to distinguish economic activity and economic goods on the one hand and active life in general and its stream of satisfactions on the other. Wherever this line is drawn, it seems most appropriate to have it above the services of individuals to himself. So far as comparison between an industrial and pre-industrial economy is concerned, it seems most unlikely that the omission of these activities will affect the comparison in a manner unfavourable to the preindustrial economy; there is no reason to

suppose that individuals in a pre-industrial economy lead a more active life outside their 'working hours' than do the individuals in the industrial economy.

Thus apart from one or two items such as the barter exchange of goods or domestic cooking and other household duties of the housewife, an account of non-market activities in industrial and pre-industrial economies seems unlikely to result greatly in favour of the latter. The somewhat overstatement of the situation by Kuznets, as it appears to us, flows from an underlying presumption which he seems willing to grant; namely, that 'a pre-industrial country, in adapting its resources and skill to needs, manages to develop, within the family or the community, many productive activities, that are taken over, if in modified form, by market-bound business enterprises of an industrial society'. In the first instance, Kuznets seems to define market too narrowly; for, if the market includes barter, many of the activities which he mentions as extra-market are really professional and market-oriented activities and are accountable by the customary rules of national income accounting. For instance, he mentions that the American "consumers spent in 1929 over half a billion dollars on crematories and funerals"; and while these functions-are presumably performed satisfactorily in

India and China, he is surprised not to find any allowance for them in the estimates of their national income. Firstly, it is not axiomatically true that funeral services are satisfactorily performed in India and China; for in India, as is well-known death ceremonies are one of the major occasions for contracting debt and if we grant that not all of those who need it can secure sufficient credit on such occasions, it would follow that these ceremonies could not often be performed to the satisfaction of those concerned. Secondly, there is nothing in the nature of the Indian community as we know it, which makes death functions extramarket; the firewood or other fuel needed for cremation has to be purchased in the market not different from the one wherefrom firewood for domestic cooking is obtained; and every bit of religious ceremony attending the function has to be done through a professional intermediary who is paid for the same. The cost to the Indian consumers is therefore fully calculable by customary rules of national income accounting and hence if no allowance for the same is to be seen in the national income of India, it can only be because, the functional analysis is not explicit or else that the accounting is incomplete.

Secondly, as follows from his basic assumption, Kuznets thinks that 'for, each commodity category appearing in

industrial civilisation, there is or ought to be a clear parallel within the family and community life of pre-industrial societies'. He mentions in this connection, the life insurance services. "The American consumers spent close to one billion dollars on life insurance in 1929. What about the value of such insurance provided by the family system of China, where the family comes to the succor of a member who may have been afflicted by one of the bad turns of fortune for which life insurance is supposed to compensate in industrial societies?" Any one who has seen an old-man, or a young widow or an orphan living in a joint family (again talking of conditions in India) would find it hard to compared their conditions with their counterparts in an industrial civilisation receiving life pensions or education endowments from an insurance office. It is only by stretching the point too far that one can compare the 'insurance services' implicit in the joint family with that offered by an insurance office proper. The old man often lives by begging, the young widow by borrowing and the orphan by stealing; all at the mercy of the relatives and of the society, and unless this is to be supposed

a form in which a pre-industrial country adapts its resources and skill to needs and manages to develop a form of insurance, it is difficult to say how any economic values can be attributed to these circumstances.

We shall conclude by referring to a joint we have already discussed. We have earlier described the form which an intensive field study directed to get an inclusive picture of nonmarket productive activities in a pre-industrial society would take. It is difficult in these days of sample surveys, to convince anyone and particularly a statistician that a particular enquiry is of not great or immediate importance or that in the existing circumstances it is not likely to yield sufficiently reliable and useful results. But if statistical programmes are be to determined in relation to the economic needs of the country and have to have any purpose and priorities, it might be said that at least in a pre-industrial country with numerous more urgent problems, this one enquiry directed towards the assessment of its nonmarket activity is not one of high priority.

# **MEASUREMENT OF NATIONAL INCOME AND CONSTRUCTION OF SOCIAL ACCOUNTS FOR** AN INDUSTRIALLY BACKWARD ECONOMY-I

## V. M. Dandekar

ment of the national income and construction of social accounts for a backward economy, the chief problem appears to be subsistence and family production. In contrast to an industrially advanced economy, in a backward one there exists a considerable amount of production on a family or household basis. Except in the case of larger productive units, production is carried on mainly for home consumption and there hardly exist any conceivable accounts of the productive enterprise as such. Households are almost universally both producers and consumers but the basic distinction between production and consumption is hard to draw. It is the household which forms a single and the most natural accounting entity. As a consequence, a considerable amount of the total product never appears on the market and only a part of what is exchanged, is exchanged for money. The working system of social accounts set out in the Report of the Sub-Committee on National Income Statistics of the League of Nations Committee of Statistical of an advanced industrial economy in the same manner. There would be only

From the point of view of measure- which transactions in money are dominant." It appears, therefore, that this system would have to be somewhat modified so as to accommodate the phenomena of subsistence and family production.

2. It is obviously desirable, nevertheless, that changes should be as few as possible and that the basic layout of the system should remain the same. This should not be difficult for, after all, even in a backward economy; there exists a large number of accounting entities which should be amenable to the same or similar treatment as that accorded to entities in an advanced economy. In general, all accounting entities other than households could be treated in this manner. It is proposed that this should be done. In that case, all such entities would be grouped in the four sectors as prescribed in the working system mentioned above. Those sectors are: (i) Productive enterprise; (ii) Financial intermediaries; (iii) Insurance and social security agencies and (iv) Final consumers. They would be keeping the same type of Experts is "based essentially on the model accounts as described there and in much

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two exceptions. As we are taking out all households for separate treatment, the second sub-division in sector (i) should be dropped. It consists of all persons or households in their capacity as houseowners, house-ownership having been classified as a productive enterprise. Secondly, the first sub-division of sector (iv) consists mainly of persons or households in their capacity of final consumers. It also includes other nonprofit-making bodies. The division, therefore, must be retained, but would consist only of the non-profit-making bodies other than households. Finally, sector (v), constituting the rest of the world, would of course remain as it is.

3. We now propose to take out all households and group them in a separate sector, which might be termed the sector O By households we shall understand the traditional units of a social organisation. In their social content, they are organised units of final consumers. That is their universal character. However, in a backward economy they also act as producers, mainly engaged in all types of primary production and some secondary production too. They form the most natural accounting entities, and we shall require their accounts to cover, the whole of their activity both as producers and consumers. It is obviously necessary that for a business or enterprise to be considered as a household business, no person outside the household should have any proprietary interests in it. The condition is not, of course, difficult to satisfy. Every business or enterprise in which more than one household has a proprietary interest, should be constituted into a separate accounting entity. In such cases it is expected that, of necessity, its accounts will be distinct from the accounts of the households having joint interests in it.

4. It is possible that, thus constituted, the scope of households, and consequently the scope of sector O, would be too large. In the interests of maintaining comparability with the social accounts of an advanced economy over as large a part as possible, it is necessary to restrict the scope of the new sector, namely 0, as much as possible. For this purpose, we propose to restrict the scope of the household still further. A household might own a business or an enterprise in which no outsider has any proprietary interests. If such an enterprise is run in a manner such that its accounts are kept distinct or with some effort can be so separated from other accounts of the household, then it is possible and advisable to form it into a separate accounting entity and to treat it, in an appropriate sector, elsewhere, in the usual manner. When a household combines within itself

the functions of a producer and a consumer, there are usually three points at which the two activities come in close contact and the respective accounts get mixed up. The first is location, that is to say, the place of residence and the place of business. When these are the same, the accounts to that extent become inseparable. Secondly, the employment of unpaid family labour. Such labour is not only, not paid in any formal manner, but it is almost always engaged on terms and conditions of work which are usually ill-defined and often extremely irregular. Particularly when work is carried on in the same place as the place of residence, this irregularity assumes extreme forms. Measurement and evaluation of family labour employed, therefore, becomes difficult. The third difficulty concerns home consumption of own-production without formal accounting. If a household runs an enterprise where these points of contact are avoided or can be separated in the account without resort to complex procedures of imputation, there would be little difficulty in constituting such an enterprise into a separate accounting entity distinct from the household. In a sense, it is not a case of family production. Such cases will not be found wanting and theft separation from the household sector will enlarge considerably the scope of that which, in a backward economy, is directly comparable with an advanced economy. In particular, this will enable

private trading, both wholesale and retail, professional money lending and other activities as financial intermediaries, to be treated outside the household sector, for in these cases the business accounts are expected to be kept distinct. The household sector O will then consist of all households in their capacity as final consumers, together with such of their productive activity which cannot be separated, in an accounting sense, from their activity as consumers. There will, of course, be some households which are pure consumers with no productive enterprise of their own. It should perhaps be mentioned that they are not excluded from sector O.

5. In the working system for an advanced economy it was recognised that an important productive activity, namely house-ownership, was carried on at personal or household level. However, that was about the only productive activity of household which needed to be taken into account. Persons as owners of houses were therefore constituted into separate accounting entities, as distinct from persons as final consumers. It might be thought that a similar procedure could be followed in respect of all productive activity of households. This course does not appear possible for two reasons. Firstly, under circumstances in which production is actually carried on by households the distinction in many cases

might be too artificial. The productive enterprise of the household is more a way of life than an independent business apart from the total family activity, and finer points of distinction are difficult to make. Secondly, for the productive activity of the household to be constituted into a separate accounting entity, there would need to be a very clear and unambiguous definition of what constitutes a productive enterprise. As we shall see, this is not easy to make. In these circumstances, if a household is artificially broken into two accounting entities there is the possibility of some activity being left uncovered by both entities. Thirdly, from the point of view of investigational procedure, it appears more natural and convenient to treat the household as a single accounting entity. We therefore prefer to treat it as such.

6. We shall now consider the type of accounts that a household would keep. Even though the distinction between the productive and consuming activities of the household is not considered to be sufficiently clear to warrant their separation into two accounting entities, an attempt must obviously be made to obtain the distinction, as far as possible, by means of separate accounts within the entity. We propose, therefore, two separate accounts, one for the productive activity and the other for the consumer activity of the household. For each branch

there will, of course, have to be a current and a capital account. Thus, a household is to maintain four types of accounts which might be termed the operating, the capital, the revenue and the reserve accounts. The first two will cover its activity as a producer, while the latter two will cover its activity as the final consumer. The nature of the operating and capital accounts will be much the same as for other productive enterprises treated in sector (i). However, here we shall not have an appropriation account. All other receipts of the household will be credited to its revenue account. We shall also not have the reserve account in the same sense as for other productive enterprises in sector (i). Here the reserve account will appear as the capital account of the household as the final consumer.

7. The operating account of a household relates to all current activities undertaken as part of its productive enterprise. Now, it is in the nature of a backward economy and particularly of subsistence and family production, that the enterprise is almost always of a very mixed type. This is because within a given productive capacity the normal object is to produce as much for home consumption as possible and not so much for the market. It would be desirable, if possible, to set up separate operating accounts for the several branches of activity. But the mixing up is so complete

that any attempt to separate them would involve us in a series of imputations of costs and receipts as between the different activities. The problems of imputation would be both of definition and of measurement, and it is feared that the procedure might lead to meaningless hair-splitting. It is proposed therefore to treat the entire productive activity of the household as one single enterprise without any attempt to separate the accounts of its several constituents. As a consequence it will not be possible to classify the national product in the household sector by branches of activity.

8. The situation is not, of course, peculiar to the household sector. Even in other sectors it is not infrequent that enterprises contribute to more than one branch of activity. Even here, therefore, "it is not easy in practice to obtain a classification of the national product by branches of activity in such away that the elements within each branch can be compared with one another on a meaningful basis." For certain purposes, it may be sufficient to use a classification of branches of activity coincident with the main activity of different groups of enterprise. In that case, in the household sector, the households might also be classified by their principal productive activity.

9. Another problem arising in connection with the classification of national product by branches of activity concerns the distinction between a payment to a factor of production and a purchase from an enterprise. The distinction assumes importance while setting up the accounts of a household; on that depends whether a certain receipt will be credited to the operating or to the revenue account. For example, if payments made to a jobbing carpenter are regarded as wages, they will be credited to the carpenter's revenue and not to the operating account. On the other hand, if they are regarded as purchase of service, they will be credited to the carpenter's operating account, as sales proceeds. Usually the distinction is easy to make on a conventional basis, but it does not seem possible to make a uniform definition to settle the border line cases. In relation to every person engaged in a activity, productive a fundamental question to ask is whether the person is working on his own or is employed by some other person or enterprise. In other words, the point to settle is to whose productive enterprise the activity belongs. That question is not easy to answer without reference to institutional peculiarities. An abstract principle to decide issues which might be useful in some cases would be to minimise the complexities of single enterprises. Thus when a farmer employs a carpenter on a job, if there is any doubt about the nature

of the employment, it is advisable to recognise two kinds of real transactions. decide in favour of the carpenter, for that makes the farmer's enterprise less complex. When the national product in the household sector is classified by classification would thus be more satisfactory.

10. Next we have to consider the types of transactions which should be kept distinct. In the working system for an advanced economy, three types of transactions are distinguished, namely, real transactions, nominal transactions and transfers. In such an economy, transactions in money are dominant, and the first two types refer to transactions in which money passes for something real and nominal respectively. We might say that the real transactions, in this sense, are those in which money is exchanged for something real, while in the nominal transactions money and its equivalents are mutually exchanged. In a backward economy not everything is exchanged for money, and there are numerous transactions in which something real is mutually exchanged without the intervention of money. Such transactions are an integral part of a back ward economy-as is, for instance, the market in an advanced economy. In order to know the relative dimensions of the monetary and nonmonetary transactions it is necessary to consumption. The "purchase" of fodder

One is cash transactions in which something real is exchanged for money. The other is barter which is an exchange without the intervention of money. We branches of activity coincident with the shall therefore recognise four types of principal activity of the households the transactions; barter, cash transactions, nominal transactions and transfers.

> 11. Of the four types mentioned above, the latter three appear in the accounts of an advanced economy and no new problems are likely to arise when dealing with them in the accounts of a backward economy. Barter, however, is peculiar to these accounts and it is worth-while considering the manner in which it would appear in the system of accounts. It is possible to consider barter as a sale and a purchase from both ends with indirect or hypothetical intervention of money. The accounting procedure, however, becomes somewhat simpler if we regard barter as purchase from both ends. This might be done by debiting both the accounts from where barter purchase is made while crediting the corresponding dealing with inventories. accounts Changes in inventories are dealt with in capital accounts and hence either the capital or the reserve account will be credited according as the original debit is to the operating or the revenue account. For instance, let us suppose that fodder is exchanged for food grains for home
should then be debited to the operating account of the farmer making the purchase, while his capital account should be credited. This may be done by means of a transfer from the operating to the capital account in respect of inventories taken over. On the other hand, as the food grains were supposedly obtained for home consumption, the "purchase" should be debited to the revenue account of the person concerned, at the same time crediting his reserve account by means of a transfer from the revenue account in respect of inventories taken over. The transaction is not considered to be a sale at either end and hence the operating, accounts of neither parties show receipts under sales proceeds. In a sense, this treatment accords more nearly with the facts, for barter is essentially a double coincidence of wants. It is of course possible to look at the same transaction from a slightly different point of view. We could suppose that the operating account of the farmer makes a purchase of fodder directly from the capital account of another person while the revenue account of the person makes a purchase of food grains directly from the capital account of the farmer. Thus, while the operating and the revenue accounts would be debited as before for the respective purchases of fodder and food grains made, the credits would appear in the corresponding capital accounts in both cases, and could be made to appear

as sales proceeds rather than as transfers from the operating and the revenue accounts respectively. The former procedure is however, to be preferred as it accords with the normal practice of taking over inventories to the current accounts for sales and other disposals. It should be noted, however, that in neither procedure sales proceeds appear in the current accounts. When goods are exchanged, we would therefore treat the transaction as a purchase from the both ends and follow the first procedure of debiting the accounts in which the purchase is made and crediting the corresponding capital accounts by means of a transfer in respect of inventories taken over.

12. There are two exceptions where the situation does not seem to accord exactly with above procedure. One is barter between goods and services; the other is the payment in kind to factors of production. We shall refer to these as a barter purchase of services and barter payments to factors of production. In a backward economy there appear two important cases of barter purchases of services. In accordance with the recommendation made in the working system for an advanced economy, we shall regard rentals as purchase of services rather than as payment to factors of production. Therefore, when rentals are paid in kind, as they are in cases of share-renting, it is

to be regarded as a case of barter purchase of services. The other case is important from the point of view of certain institutions as they actually exist in a backward economy. In many parts of India, for instance, certain artisan, community and personal services are maintained by the agricultural communities by means of contributions in kind at harvest. In this category come such artisans as, for instance, the carpenter, smith, cobbler and rope-maker, all of whom are necessary to maintain and keep in repair the implements of farming. The system also covers community services like watch and ward and personal services like those of the barber, washerman, potter, butcher and priest. The traditional remunerations to them are therefore in the nature of a barter purchase of services. Besides these there would, of course, be numerous cases where services are paid for in kind.

13. Earlier it was pointed out that for certain purposes it is more convenient to regard barter as a purchase at both ends. This treatment also appeared to be more in accordance with facts. In the case of a barter purchase of services, however, particularly in the two cases pointed out above, this treatment appears to be somewhat unreal. Share-rents are often as big as half of the total production, and when allowance is made for the numerous payments in kind which a cultivator makes, the share in kind received by a

landlord is often bigger than the net production receipts of the cultivator. As a result the landlord has often as much saleable surplus as the cultivator. It would be difficult therefore, to suppose that the landlord "purchases" his share. The same is true of traditional remunerations received in kind by artisans, and other services. The total remunerations accruing to some of the more important artisans, like the carpenter and smith, often are of the same size as the production of an average cultivator. In fact they have a fair-sized saleable surplus and left to themselves they surely would not purchase all theft receipts. In other cases, even though the total receipts are not as big, they are usually in terms of the staple food grains, part of which must be exchanged for other requirements like salt and sugar. It appears, therefore, that these transactions are genuine cases of a sale on one side and a purchase on the other. It is necessary, therefore, that in the operating account of an artisan or a landlord, there appear receipts of proceeds of barter sales of services. This can be done if we agree to treat such proceeds of barter sales of services on the same footing as the original production receipts of the producer of goods. Let us suppose, for instance, that a farmer pays a share-rent to a landlord. As before, the operating account of the farmer will be debited by means of a transfer to his capital account in respect of inventories

and services. The operating account of the landlord would then be credited by means of a transfer from his capital barter sales of services. Here, as before, the transaction could be looked at from a slightly different point of view. The farmer's operating account then could be debited for a barter purchase of services and the landlord's operating account credited for the proceeds of a barter sale of services directly and not by means of transfer items. On the other hand a sale must be effected from the capital account of the farmer to the capital account of the landlord. The procedure has the advantage that we have direct entries in terms of sale and purchase rather than of transfers. However, for reasons already stated, we would prefer the former procedure where inventories are taken over to the operating account for disposals in kind.

14. Finally, we have the case of barter payments to factors of production. Such payments might be classified, as usual, into two categories. One is wages and salaries including in kind, wagesupplements. The other is payment of interest in kind. The first is universal in a backward economy; the second is not uncommon. It refers to two practices. One is the loan in terms of grain which is repaid in kind, with interest in kind added.

taken over for barter purchase of goods Towards the end of the agricultural season, small cultivators often run short of their grain requirements. It is then usual for them to borrow grain, which is account in respect of proceeds in kind of returned together with interest after harvest. The other practice is somewhat more difficult to handle in practice. Often money loans are secured by a plot of land or a house or a plough or a milch cow which passes into the physical possession of the lender who enjoys the income therefrom in lieu of the interest on the loan. Both are, however, cases of interest payment in kind. Let us suppose that a farmer has made such payments in kind to factors of production. In such cases we shall, as before, debit the operating account and credit the capital account of the farmer by means of a transfer in respect of inven tories taken over. Factor payments are credited to the revenue and not the operating account of those who receive them. As such the revenue account of the wage-earner, and not their operating account, will have to be credited. We shall do this by means of a transfer from his reserve to the revenue account. We could do it by means of a transfer from the capital, rather than from the reserve account. However, as factor payments are entered in the revenue and not the operating account, it appears more appropriate to deal with the consequent changes in inventories in the reserve rather than in the capital account. It should be noted that this procedure places

the reserve account in the same position in its relation to the revenue account as is the capital account in relation to the operating account. Here again, as before, we could treat the transaction in a slightly different manner. The operating account of the farmer could be debited by means of a direct payment from that account to the revenue account of the wage-earner, rather than by means of a transfer. It would be necessary in that case to make a sale from the capital account of the farmer to the reserve account of the wage-earner. For reasons already explained, we prefer the first procedure.

15. So much about barter purchases of goods and services and barter payments to factors of production. We shall next consider certain transfers in kind. As inventories are held in either the capital or the reserve account the transfers will be to these accounts. Let us first consider transfers to the capital account. Here it is convenient to distinguish three types of such transfers. The first is in respect of material used in production, which will be done by means of a transfer from the operating account. The second is in respect of material used in capital works which will be done by means of an internal transfer within the capital account. The third is in respect of withdrawals for home consumption, including gifts, etc. This transfer could be made directly from the revenue account. It is

preferable, however, to make it to the capital account from the reserve account. Firstly, we should note that inventory changes due to receipts in kind of payments to factors of production are to be dealt with in the reserve account. In a sense, therefore, the reserve account functions as the resting account for stocks of commodities to be released for final consumption. If, therefore, some withdrawals for final consumption are to be made directly from the capital account, we shall need some such convention as that stocks held in the reserve account should receive priority in this respect. This difficulty is avoided if we agree to make withdrawals for final consumption through the reserve account and not directly from the capital account. Secondly, stocks are often withdrawn from the capital account, professedly for final consumption but are not in fact directly consumed within the household. They are instead bartered for other household requirements. Consistent with procedures so far outlined, this requires that the corresponding stocks are held in the reserve account. We propose, therefore, that transfers to the capital account in respect of inventories taken over for final consumption, including those bartered for that purpose, should be made from the reserve account.

16. Next, as regards transfers to the reserve account. These will be mainly in respect of withdrawals for final consumption and hence will be made from the revenue account. These might be distinguished in three categories. One is in respect of barter payments to factors of production from the revenue account. Mother is in respect of barter purchase of goods and services for final consumption. The third would be for direct home consumption. Besides the main transfers from the revenue account, there should be some provision for transfers from the capital account. We should note again that payments for factors of production received in kind are directly taken to the reserve account. Now it often happens that a wage-earner not only barters some of the wages he received in kind, but actually sells some of them for cash. As we do not normally credit any sales proceeds to the revenue account, proceeds of such cash sales should be credited to the operating account. This could be done by a direct transfer from the operating account to the reserve account. For reasons precisely similar to those discussed above it is preferable, however, to do the transfer through the capital account. The transfer to the reserve account in this respect would therefore be from the capital account.

17. The treatment of barter transactions outlined above will be peculiar to the Sector O. In other sectors such transactions are few and should be dealt with by postulating the intervention of money. The procedures suggested above appear more direct and will help ascertaining the volume of non-monetary transactions in a backward economy. It should be noted, however, that no new accounting principles are involved. One of the functions of the capital accounts is to deal with changes in inventories. It is by means of a full exploitation of this function that it is proposed to accommodate barter transactions within the standard framework.

18. In connection with the treatment of transactions to be kept distinct, another problem arises, namely, that of transactions occurring within the entity. These might be distinguished, firstly, according as they are between two accounts or within a single account of the entity. Thus home consumption of a product when it is in the nature of final consumption is a transaction between the operating and the revenue accounts. On the other hand, when consumption occurs in the process of production, it is a transaction within the operating account. Another distinction is that between actual transactions, that is, those which physically take place, and transactions that are imputed for consistency in accounting procedure.

is an actual transaction. On the other hand, payment of wages to family members is an imputed transaction. Now, a decision is necessary as to which of these transactions should appear in the accounts and which might be neglected altogether. As a general principle it appears necessary that all transactions, whether actual or imputed, between two accounts should be recorded. On the other hand, there is an obvious choice regarding internal transactions, that is, transactions within an account. Between the two alternatives of either making all of them appear or neglecting them altogether there is a third choice of recording only the actual transactions, while neglecting the imputed ones.

19. The matter is of some practical importance and might be discussed by means of a practical illustration. With reference to the operating account of a household, let us consider two transactions, one imputed and the other actual. The first is the imputation of rentals to owner-cultivated land. The other is the feeding of home-grown fodder to own livestock. The first is a matter of allocation of receipts to different branches of activity-as, in this case, between farming and ownership of land. To the extent that certain receipts are credited to land, they will appear as costs of farming. In practice, such allocations of receipts and costs

Thus when fodder is fed to the cattle, it are difficult to handle statistically and unavoidably involve cost accounting procedures. If we proceed with them to their logical extreme, we shall be really trying to separate the accounts of the different branches of activity within the enterprise. This, we have decided not to do. Such imputations are therefore best not done. The rentals to be imputed will in any case appear as part of the operating surplus of the complex enterprise.

> 20. The other transaction, namely, feeding of home-grown fodder to own livestock, is a fact of the situation, but fundamentally, not on a different footing. Once it is decided to treat all the productive activity of the household as a single enterprise, the home-grown fodder fed to own livestock, or the home-yard manure put into the home farm, are no more than intermediate products and are essentially of the same nature as materials in process. They might, therefore, with some justification, be altogether omitted from the accounts. It is obvious that such omissions would not affect the operating surplus of the complex concern. On the other hand, they are material transactions and if We decide to enter them on both sides of the operating account there would be no serious difficulties of imputations. Their recording brings the accounts more in accordance with the facts of the situation, giving an explicit statement of the economy in operation,

and might help in ensuring complete enumeration of the product. We might, therefore, agree to record all transactions within, the household enterprise when they are quantitatively measurable and do not involve problems of imputation and, particularly, of cost accounting. It should be clearly understood, however, that this does not make, it possible to separate the accounts of the constituent branches of activity. The measurable transactions are almost always in the nature of one branch consuming material products of another branch, and form only part of the transactions between different constituent branches. There remain many others which, without some principles of imputation, often arbitrary, and elaborate cost accounting, cannot be recorded. They are, therefore, as decided above, best avoided.

21. It is perhaps important to be clear about the effect of omitting transactions within a productive enterprise. In the first instance, it should be noted that their omission is merely the logical consequence of the decision not to recognise branches of activity within an enterprise. From suck a combined account, it is really not justifiable to try to work out the production costs of single items of product of the enterprise. But if that is done, and there is apparently sufficient temptation to do it, the cost of single items are under-estimated. Thus, if it is decided to disregard both home-grown fodder and farmyard manure to the extent that they are consumed within the enterprise, the home grown fodder would not appear as an item of cost in the livestock products and so also the farmyard manure would not appear in the costs of farm products. In other words, single items of product would represent larger net values added per unit to the national product than they in fact do. The national aggregate is, however, not affected, as the overestimation of net values added per unit is compensated by under-estimation of quantities of single items, to the extent that they are consumed within the enterprise. For instance, if the sales proceeds in such accounts are classified by commodity, quantities of commodities, such as fodder and manure, would be under estimated to that extent. This seriously distorts the facts of actual production. It is to avoid the picture being seriously distorted in this manner that it is desirable to record transactions within the enterprise, when that is feasible.

22. This brings us to the final point in this discussion, namely, imputation of wages to family labour. it is conventional to treat persons as not a part of business equipment and to regard payments to them as payment to factors of production which are receipted to the revenue account of persons. It is not impossible to adopt this procedure and impute wages to

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operating account and credited to the revenue account. The imputation might be made by means of two alternative procedures. In one case the family members are treated as hired labour and to them are imputed wages at rates payable to the hired labour for the number of days They actually worked in the household enterprise. Alternatively, they might be treated as labour under permanent or long-term contract and then might be paid annual wages at rates payable to the labour under annual or long-term contract. By imputing wages at rates payable to the hired casual labour the family labour is likely to be remunerated at rates unduly high, for no allowance is made for the fact of an assured employment or for preference in being employed when work is available. In this respect family labour is more akin to labour under annual contract, but it differs from the latter in the fact that while the latter is usually kept fully employed, the former often enjoys considerable leisure. At any rate, not all family members do the same amount of work as is done by hired labour under annual contract. Some members of the household work during peak periods only when labour is short. A further complication is introduced by the fact that often members do not engage themselves full time in the household enterprise because it does not afford sufficient employment. In such cases,

family labour which will be debited to the they work outside and earn wages. Now it is obvious that if the members are to be supposed to have been employed under an annual contract and if to them are to be imputed wages at annual rates, their earnings from outside should be credited to the operating account and not the revenue account of the household. In other words, the family members are to be regarded as part of the productive equipment of the household. This is contrary to accepted notions, for it results in not accepting anything in the nature of final consumption. It appears, therefore, that the family labour will have to be imputed wages on the basis of days when they actually worked in the household enterprise. It is equally obvious that the imputed rates must not be those payable to casual labour. Wages to family labour might, therefore, be imputed for days of actual work only and at average daily rates which a person employed under an annual contract would receive per day when he actually worked.

> 23. If wages could be imputed to family labour on some such principle as put forward above, these would of course be debited to the operating account and credited to the revenue account of the household. The content of the operating surplus in that case would be precisely the same as that of a productive enterprise treated in sector (i). However, the problems of measurement involved in the

procedure suggested above are considerable. In particular, it is difficult to impute wages for work which is commonly done by family members only. We have, for example, the case of the housewife collecting fire wood and other fuel, or the children, who are perhaps good for no other job, tending the cattle. Numerous activities appear which must be regarded as gainful, but where evaluation and formal imputation of wages would be too artificial. The alternative, therefore, is not to impute any wages to family labour. When members work outside and earn salaries or wages, they would of course be credited to the revenue account, but for their work done in the household enterprise nothing would be credited to the revenue account. Remuneration to family labour therefore could appear as part of the operating surplus. This procedure fundamentally changes the character of the operating surplus and places the household enterprise on a footing different from that of the productive enterprises treated in sector (i). But that is a fact of subsistence economy and it is best to recognise it in the system of accounts. The so-called enterprise is not so much of a business proposition as a way of life, and the operating surplus is no more than a source

of receipt available for expenditure. The family members are a charge on the enterprise and, what is not often realised, in its bad days the enterprise is a charge on other resources of the household. We propose, therefore, that to the extent that their labour enters the family product, no attempt should be made to separate the family members from the enterprise. They should be treated as an integral part of it and their remuneration should appear as part of the operating surplus.

24. We shall now proceed to set out and discuss the scope and content of the four accounts to be kept by a household. Broadly speaking, the contents of the operating and the revenue accounts will be similar to the operating account of other productive enterprises treated in sector (i), and the revenue account of final consumers treated in sector (iv), respectively. Capital and reserve accounts will deal with the capital transactions relating to the trans actions dealt with in the operating and the revenue accounts respectively. As already indicated, one of the principal functions of these accounts will be to deal with changes in inventories.

SECTOD O HOUSEHOLD

### 25. The operating account would be as under

(1) OPERATING ACCOUNT.					
<ol> <li>Cash proceeds of sales.</li> <li>Subsidies.</li> <li>Transfers from capital account in respect of:         <ul> <li>(a) production receipts.</li> <li>(b) proceeds in kind of barter sales of services.</li> <li>(c) work-in-progress and unused material.</li> </ul> </li> </ol>	<ol> <li>5. Cash payments for factors of production.         <ul> <li>(a) wages, salaries, etc.</li> <li>(b) interest.</li> </ul> </li> <li>6. Cash purchases of goods and ser vices.         <ul> <li>7, 8 and 9. As in sector (i).</li> <li>10. Transfer to capital account in respect of inventories taken over for-                 <ul></ul></li></ul></li></ol>				
4. Total receipts.	14. Total payments.				

26. On the receipts side there is only one item which needs some explanation. It is 3 (a), namely, transfers from capital account in respect of production receipts. The normal procedure is to carry over to the capital account only the unsold goods out of current production. That requires a division of the current sales into those out of current production and those out of stocks at the beginning. This is difficult to obtain in practice. We therefore prefer to carry over the entire production to the capital account before making any sales. This is also in accordance with the proposal to use this account more or less as a resting account. The transfer will of course be made at current market prices. Agricultural commodities, for instance, will be carried over at harvest prices. The transfer under 3 (b) has already been discussed. When services have been bartered, their proceeds in kind are to be treated in the same manner as original production receipts. The transfer under 3 (c) is in respect of work-in-progress and unused material. With primary production, the item would be usually negligible and difficult to measure in practice. It would be perhaps worth-while to disregard it altogether.

### 27. On the payments side, the transfer

item 10 (d) is necessary to cancel the receipt item 1. In evaluating this item there are two alternatives. The inventories taken over for cash sale might be transferred at the same prices at which they were carried to the capital account. This would leave a margin on sales to the operating account. It would be in the nature of trading profits and would, appear as part of the operating surplus. Alternatively, the transfer might be made at sales prices, so that the transfer 10 (d) would completely cancel the receipt item 1. The margin in this case would rest with the capital account as due to change in value of inventories and would not contribute to the operating surplus. The latter alternative is to be preferred. Firstly, it is simpler to work with in practice. Secondly, we have agreed to take professional trading out of Sector O. If this is done, the margin on sales is better regarded as change in inventory value. It is advisable, therefore, that they appear as such in the household sector. If this is agreed to, the advantage of carrying over the entire production to the capital account, as is done by the transfer item 3 (a), would become more obvious. Other items under 10 have been already discussed.

28. As we have defined it, the households are non-profit-making bodies. The operating surplus is therefore not in the nature of profits, but just an item of receipt available for family living. In fact, it is inclusive of remuneration to family labour. By transfer item 13. It is therefore carried to the revenue account.

29. We shall next consider the revenue account.

198.	Wages, salaries, etc.	212.	Cash payments to factors of production.
	(a) Cash.		(a) wages, salaries, etc.
	(b) Transfer from reserve account in respect		(b) interest.
	of wages received in kind.	213.	Cash purchases of goods and services.
199.	Interest.	214	to 221. As in sector (iv).
	(a) Cash.	27,	28. As in sector Ci).
	(b) Transfer from reserve account in respect	*	Transfer to reserve account in respect of
	of interest receipts in kind.		(a) payments in kind to factors of production.
200	to 210, except 202. As in sector (iv).		(i) wages, salaries, etc.
202	Transfer from operating account of surplus.		(ii) interest.
21	and 22. As in sector (i).		(b) barter purchase of goods and services.
			(c) final consumption.
		29.	Transfer to reserve account of surplus.
211.	Total receipts.	223.	Total payments.

(2) REVENUE ACCOUNT.

30. The only new items on the receipts side are the two transfers from the reserve account 198 (b) and 199 (b), in respect of the payments to factors of production received in kind. Their nature has been discussed earlier. In place of the item 202, net return from house-ownership, appearing in sector (iv), we have here 202, transfer from operating account of surplus. On the payments side, though items 27 and 28 from the appropriation

account of business enterprises have been incorporated; item 26, it should be noted, is not included. It refers to payments of contingency claims assumed to be handled by insurance rather than by reserves. Here it appears more appropriate to assume them to be handled by reserves. The item is therefore debited to the reserve account.

31. Next, we have the capital account.

	()
31. Transfer from operating account inventories taken over.	in respect of 36. Payments for factors of production. (a) wages, salaries, etc.
32. Transfer from operating account depreciation and obsolescence.	in respect of (i) cash. (ii) in kind.
33. Transfer from revenue account property insurance claims.	in respect of 37. Purchases of goods and service. (a) cash.
34. Transfer from reserve account (a) in respect of net withdrawals	<ul><li>(b) barter.</li><li>38. Net purchases of existing equipment and other</li></ul>
<ul> <li>(b) to balance the account.</li> <li>* Imputed receipts in respect of <ul> <li>(a) payments in kind for factors of</li> <li>(b) barter purchase of goods and</li> </ul> </li> </ul>	<ul><li>assets.</li><li>39. Transfer to operating account in respect of production.</li><li>services.</li></ul>
35. Total receipts.	40. Total payments.

#### (3) CAPITAL ACCOUNT

32. The only items needing explanation are the last two on the receipts side. As explained earlier, all withdrawals for final consumption are to be made through the reserve account. On the other hand, in so far as parts of goods received directly in the reserve account (as for instance wages received in kind) might be sold for cash, they are to be transferred through the capital account. Withdrawals for final consumption will of course be usually very much larger than this reverse item. It is therefore convenient to treat them by means of a single transfer for net withdrawals. This is done by item 34 (a). The other item, 34 (b), is a transfer from the reserve account in order to balance the capital account. The last item of receipt, marked \*, is in respect of materials out of stock used within the capital account. They include payments in kind to factors of production and barter purchases of goods and services.

	(4) RESERVE ACCOUNT.				
224.	Transfer from revenue account of surplus.	232 to 236. As in sector (iv).			
225	and 227. As in sector (iv).	26, 47 and 48. As in sector (i).			
41.	As in sector (i).	49. Transfer to capital account.			
*	Transfer from revenue account in respect of	(a) in respect of net withdrawals.			
	payments to factors of production, barter	(b) to balance that account.			
	purchases, etc.	* Transfer from revenue account in respect of			
		payments to factors of production received in			

kind.

54. Total payments.

#### 33. Finally, we have the reserve account as under:

34. All items appearing on both sides above, except the last one on the payment side, have been discussed. It is well known that in a backward economy, households often build up theft reserves in the form of gold and silver bullion. Even when expenditure is made on ornaments of gold and silver, it is

46. Total receipts.

essentially a form of saving and seldom a final consumption. In such cases, therefore, only charges for making ornaments, etc., should be debited to the revenue account, while the purchase of the bullion itself should be debited to the reserve account.

87. Net purchases of gold and silver bullion.

# MEASUREMENT OF NATIONAL INCOME AND CONSTRUCTION OF SOCIAL ACCOUNTS FOR **AN INDUSTRIALLY BACKWARD ECONOMY - II**

### V. M. Dandekar

appeared in Accounting Research for October, 1951 (Volume 2, Number 4), the accounts to be kept in sector O were surveyed. We shall now examine the effects of these modifications on the framework in which the United Nations statistical experts recommend national income statistics should be presented. Table I in the experts' report<sup>1</sup> shows the income available to persons, that is, to individuals and non-profit-making bodies. The purport of the above discussion is that it is more in accordance with facts to treat households, even while engaged in a productive activity, as non-profit-making bodies. As such, the operating surpluses of their productive enterprises, which are inclusive of II.<sup>2</sup> In Table III<sup>3</sup> where in the first column remuneration to family labour, should be classified under the category of personal income arising from participation in economic activity. As it appears, this suggestion is not entirely new to the system Of accounts recommended; for here, while house ownership is regarded as a productive enterprise of persons and actually is constituted into a sub-sector of the productive enterprise sector, its operating surplus is treated differently and classified as personal income under the operating and the capital accounts in

35. In the first part of this article, which item 1 (d) in Table I, According to the suggestion now being made, house ownership is only one of the productive enterprises of households and it needs no special treatment. The scope of item 1 (d) in Table I, therefore, should be enlarged so as to include the operating surpluses arising out of all current productive activity of households. There need be no other change in this table. In a backward economy both in dimensions and in economic status, item I (d), namely, operating surpluses of households, would of course be predominant, and hence might appropriately be rated 1 (a), rather than 1 (d).

> 36. There would be no change in Table national income is broken down by income shares, item 14 (c) will need a sub-division. We shall have, therefore, 14 (c) (i) -operating surpluses of households, and 14 (c) (ii) -operating surpluses and net dividends received from the rest of the world. In the second column of this table, where national net product is classified by branches of activity, under item 16 (a) there should also be included household enterprises as represented by

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the household sector. The households as final consumers are represented by the revenue and reserve accounts of this sector and consequently, under 17 (a) would be included only payments to factors of production made out of the revenue and reserve accounts of the household sector. In particular it will not include payments made by households out of operating and capital accounts. They come under 16 (a). In the last column of this table where national expenditure is classified according to different types of final expenditure, item 21 (a), namely, domestic net capital formation by persons, will no longer be restricted to land and buildings. It is advisable, therefore, to sub-divide it in the same three categories into which is divided 21 (c). The domestic net capital formation by persons would, therefore, appear under three categories, thus (i) construction works and durable equipment, (ii) inventories, and (iii) gold, silver bullion and coin. The first two items will be obtained from the capital account while the last one from the reserve account of the household sector. Due to a distinct reserve account to deal with capital transactions of households in their capacity as final consumers, there is also a possibility of adding one more category, namely, (iv) durable, consumer goods.

37. In Table IV,<sup>4</sup> where an alternative breakdown of national income by income payments is given, under item 30 (a) are grouped items 1 (c), 1 (d) and (e) of the previous breakdown as given in Table I. As indicated above, item 1 (d) would now include operating surplus of all household enterprises and would be an item of considerable, if not the first magnitude and significance. It would be inappropriate, therefore, to lump it with other items. It should, therefore, be shown separately and might appear as the first item in Table IV. Item 30 (a) then could remain as it is, but exclusive of 1 (d). No new items appear in Tables V, VI, VII, VIII and IX<sup>5</sup>

38. Thus for an industrially backward economy, we have a working system of social accounts directly comparable with the one recommended for an industrially advanced economy. Basically the working system provides us with a list of items necessary to build up the national aggregates. Subsequent problems, which in a sense are of the first importance, particularly in a back ward economy, are those connected with the measurement of these items. It is proposed to indicate their nature in the following sections. Here, as else-Æ where, we shall confine the discussion to problems which are peculiar to a backward economy. In other words, we

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connection with setting out the accounts of the household sector.

39. Problems of measurement in this sector arise out of the fact that households, as we have defined them, do not generally keep any accounts and are not required to submit returns to the administration by any act of legislation. It is convenient to distinguish two types of problems. Firstly, there are problems of definition and approach. Secondly, there are those arising out of the fact that it would be ordinarily impossible to approach all the households and hence resort will have to be made to some kind of sampling procedures. We shall first consider the first type of problems, namely, those of definition and approach. It should perhaps be stated that those problems in general would be peculiar to local conditions and that therefore their nature would be different in different countries. Thus, it is inevitable that the discussion below will be largely based on conditions as they are known to exist in India.

40. It should be noted that we propose to regard the household as one single accounting entity and that all such entities have been grouped in one sector of the economy, called the household sector. The initial problem is therefore that of defining the household as an accounting

shall consider only problems arising in entity. It is obvious that some such definition as is used for census purposes will have to be adopted. The operations of a census are, however, completed within a short period of time and hence their requirements are somewhat different, and in a sense simpler. On the other hand, for purposes of constructing accounts, it is usual to take the accounting period as one whole year. It is necessary, therefore, that, by definition, a household as an accounting entity should remain invariable over the whole year. Another obvious requirement is that there should be left no persons outside the households, and that no persons should be twice included. It is worth considering how far these requirements can be met in practice.

> 41. The difficulties of definition are centred round persons who seasonally migrate to other places. Their number is not small and their case needs careful consideration. There are, for instance, seasonal migrants to towns and cities and also to rural areas growing special crops, like sugar-cane, requiring a large amount of seasonal labour. It is obvious that not in all cases can such persons be constituted into separate households. They often include among them earning members of the parent households and their stay outside the native village is sometimes much too short. The decision must therefore be made on the basis of the length of period during which they

remain outside the village. For instance, we might require that to be considered as members of the household concerned they must have stayed within the village for a minimum period during the accounting year. This period could not be of less than six months, for otherwise there arises the possibility of some persons being included in more than two households. On the other hand if the period is made of more than six months, it is not impossible that during the year under consideration, some persons did not stay at any single place for more than six months and as such could not be included in any household. The possibilities of omission and of double counting become particularly serious when we proceed by tabling details, not of all households, but only of a sample of them. In a relatively small sample it might happen that no persons were counted twice among the households actually selected. It should be noted that this is not sufficient. It is necessary to rule out the possibility from the definition itself.

42. Let us suppose that a satisfactory definition is made, and that it is possible to enumerate the persons who should constitute the household. We would then require that in the accounts of this household the entire activity, in and outside the village, of these persons is properly accounted for. This is difficult

to obtain in practice. The parent household is ordinarily not aware of the income and expenditure account of the migrated persons. In other words it is practically impossible to construct the accounts of a household in a manner such as to cover the entire activity of all its members, unless all the members happen to be residing together for most part of the accounting period. If this period is one year, there will be a considerable number of households not satisfying this condition.

43. An alternative is to constitute all persons into separate households for that part of the accounting period during which they migrate and live as an independent accounting entity. This would that the number the mean and composition of households would not remain invariable. There is no serious objection to this fact in itself, for, after all, the personnel of a household would certainly change because of natural phenomena like births and deaths. The difficulty, however, would be of enumerating and collecting accounts of those households which exist for only part of the year. For instance, if the agricultural labourers migrating to a sugar-cane tract and temporarily settled around a sugar factory, are to be constituted into separate households and as such their activity is not to be covered by the accounts of the parenet households, it is absolutely

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tacted and their accounts collected while they are so temporarily settled outside their native village.

44. These difficulties appear unavoidable. Nevertheless their dimensions could be considerably reduced by taking a shorter accounting period. Thus, for instance, if we take a month, rather than a year, as the accounting period, it would be easier to enumerate members of the household in such a manner that most of them were found together for most part of the accounting period, and there would be fewer possibilities of omissions and double counting. As we shall presently see, the choice of a shorter accounting period also appears to be advisable for an altogether different reason, namely, the desirability of getting reliable information. Thus even supposing that the accounting period is taken to be a whole year, it would be obviously impossible to obtain details of income and expenditure for the whole year in a single visit to the household. Firstly, items of expenditure are usually incurred in small amounts and are spread over the whole year. In a backward economy, the pattern of expenditure does not remain stable over the year. Not only is it marked with considerable seasonal variations, but often it is radically affected by the vagaries of the agricultural seasons. On rather artificial and confusing to the

essential that they are enumerated, con- receipts are obtained in large single bulks, such as, for instance, the production receipts of major agricultural crops, there are numerous items of receipts which are obtained in small and irregular amounts. Among these are, for instance, such items as production of minor agricultural crops, sales proceeds of livestock and forest produce, and casual earnings from hired labour. It becomes difficult, therefore, to obtain reliable information regarding items of expenditure and of numerous miscellaneous receipts by means of a single visit to the household at the end of the year. Secondly, there occur cases when certain households take to certain subsidiary occupations only in certain seasons. Makers of rope from sisal fibre may be instanced. It is also not unknown for primary school teachers to take up such occupations as tailoring during the summer. An investigator visiting the household once in the year is likely to miss such seasonal activity unless he is conversant with local conditions. The difficulty is aggravated by another fact of actual procedure. In order that the accounts, of all households might be combined it is of course necessary for the accounting year to be the same for all. This seems necessary for another reason also, namely, that when the accounting year does not approximately coincide with the agricultural year, it becomes the other hand, though certain items of household reporting its accounts. For

obvious reasons all the households cannot be visited immediately at the end of the accounting year. The investigational work has, for practical reasons, to be spread over the whole year. This means that some of the households would be visited as late as three or four or even six months after the close of the accounting period. In such cases it becomes all the more difficult to obtain reliable information in respect of a whole year ended several months previously. It appears necessary, therefore, to visit the household more frequently than just once in the year and to obtain accounting details for a period less than a year. In other words, it becomes necessary to adopt an accounting period shorter than a year.

45. A year as an accounting period has obvious limitations, as pointed out above. It has nevertheless one advantage. Even in a backward economy, it is the most natural unit of reckoning time and is therefore easily identifiable. As soon as we decide to have a shorter period, difficulties of identification appear. Thus, for instance, if we adopt three months as the accounting period, and approach a household for information relevant to that period, it becomes extremely difficult to identify transactions within a given period of three months. There is every possibility that some transactions properly belonging to this period will be omitted altogether, and that some others

belonging to an earlier period will be included. Unless, therefore, we are to rely on such errors being "random" and hence mutually cancelling, we need to choose a period sufficiently short to be easily identifiable. A week is perhaps the most suitable period from this point of view. However, it might be considered rather uneconomic to visit a household and obtain only a week's accounting information. A month is the next and perhaps the longest identifiable period. It should be noted, nevertheless, that in a backward economy, it is not so much of a natural accounting period as it happens to be in an advanced economy. A person not instructed in a calendar month is most likely to regard a month as equivalent to four weeks, which for him are more readily identifiable. The distinction is not purely academic, for it makes, it should be noted, a difference of as much as ten per cent. It might be advisable, therefore, to define the accounting period as of four weeks rather than one month. In that case these four weeks might be those immediately preceding the day of visit.

46. Consider next the sampling of households. They are conveniently sampled in two stages. In the first stage we select certain sample areas. In the second stage we select a sample of households from the households belonging to these areas. The areas to be selected in the first stage might be either

artificial areas of given shape and size, technically called grids, such as square grids of, say, half a square mile in area, or they might be more natural areas defined by villages. The advantage of choosing artificial areas of given shape and size is that the problem of what is called the multiplier, that is of inflating the sample estimates to bring them dimensionally to the size of national aggregates, becomes simpler. The disadvantages are threefold and become relatively serious if, as is sometimes proposed, the grids to be chosen are comparatively small. Firstly, a considerable amount of map-work is necessary in order to locate the grid in the field and to decide which houses or households belong to it. Secondly, border-line cases have to be decided by approximation. Thus, it might be decided to include a whole village in the grid if half or more of it is actually within it and reject the whole of it in other cases. With smaller grids, the effects of such border-line decisions become disproportionately large. Thirdly as the population density varies from place to place, the total content of human population is very different in different grids. As a consequence, the amount of actual investigational work also varies between different grids. This is not very convenient from the point of view of administration of the field-work. Villages are traditional congregations of households and in parts of the country the

houses belonging to a village are often found clustered in a compact area called the village site. With villages the problems of enumeration of households belonging to the area chosen therefore becomes simpler. However, unless total counts of households are available from a recent census the problem of determining the multiplier, that is of inflating the sample estimates, becomes, difficult. A compromise between the two alter natives might be sought by choosing larger grids, so as to include a number of villages with negligible border effects. By this procedure while the problem of the multiplier will have been tackled, the disadvantages arising out of small grids will be reduced.

47. Once the sample areas have been chosen, it becomes necessary to enumerate all the households belonging to these areas. For this purpose it is necessary to take a full census of all households: It is convenient at this stage to obtain details of the principal means of livelihood of the households, so that these might later be stratified before making the selection of the sample of households. While taking the census two points are worth while bearing in mind. In India all the houses possess census numbers. It is therefore convenient to utilise them while taking the census of the selected areas. It must be borne in mind, nevertheless, that besides households residing in numbered

houses, there are many who reside in temporary dwelling places which do not obviously bear any census numbers. Such, for instance, are unsettled wandering tribal people. Among these must be included sheep-rearers as well, who though they have a settled residence in some village, move about in the country from place to place during part of the year. There are other similar cases where entire households, having a normally settled place in some village, migrate to other regions during parts of the year and are temporarily settled in hutments not bearing census numbers. Care must be taken to enumerate these in appropriate places. The problem here is twofold. One is of definition of households who are supposed to belong to an area and the other is one of procedure which will ensure that all those covered by definition are also covered by enumeration. The other point concerns the members to be enumerated within a household. The nature of the problem has already been discussed. As already stated, the difficulties associated with defining the com household position of а seem unavoidable, except that by reducing the length of the accounting period their dimensions could be considerably reduced. It might be advisable to avoid this problem at the census stage. But it will surely have to be faced after the sample of households is selected.

48. This brings us to the second stage sampling namely, in sampling, of households. In a backward economy, such as in India, a large majority of households are engaged in agriculture as their principal occupation. Therefore unless special steps are taken, a large number in the selected households would be engaged in agriculture while all other occupations would be represented by means of very small numbers. This could be avoided by stratifying the households by their occupations and taking appropriate sub-samples from different strata. This might be done by two alternative procedures. In practice it does not seem possible to divide the households in more than two groups, such as those engaged in agricultural occupations, and those engaged in non-agricultural occupations. Separate sub-samples then might be taken from these two groups. Thus, for instance, if we need a sample of sixteen households from the selected area, we could take a sample of eight from the agricultural households, and another sample of eight from the remaining households. This would give the necessary differential weight to occupations agriculture. other than The main difficulty in this procedure is that of classifying households into two categories such as those engaged in agriculture and others. The distinction is difficult in border-line cases where households practise agriculture and some other

are also cases where different members of a household follow very different occupations. It is difficult in such cases to classify the households as required. The criterion of classifying them by means of the principal occupation, namely, the one which brings the largest income, does not work well in practice. For firstly, incomes are difficult to obtain at the census stage and, secondly, incomes from agriculture, are entirely dependent on the nature of the, season. The other technical defect of the procedure is that the relative sampling fractions for agricultural and for other occupations are different for different villages. The alternative procedure is to arrange all households in a stratified order. Thus all the cultivating households would come first and would be arranged by the size of their cultivation. The non-cultivating households could then follow, arranged, if possible, by their occupations. We might then divide the list into two equal halves and select from each half a fixed number of households. Thus out of the sixteen households to be selected, only four might be selected from the first half while the other twelve come from the second half. The procedure thus avoids the classification by agricultural and other occupations while the problem of combining the two sub-samples becomes comparatively simpler. Further, if while selecting the four households from the

occupation during, the off-season. There first half, they are selected from four equal sub-divisions of the list, and similarly if the twelve households from the occupations. It is difficult in such cases to classify the households as required. The criterion of classifying them by means of the principal occupation, namely, the one which brings the largest income, does not work well in practice. For firstly, incomes are difficult to obtain what are called sampling errors.

49. If the accounting period is decided to be one year, we might next proceed to obtain from the selected households accounting details for one year. The limitations of this procedure have been discussed earlier. If, on the other hand, a shorter accounting period is adopted, the selected households will have to be revisited by means of a number of periodic visits. It is advisable, during each such visit, to check the census of households from where the sample is selected and ascertain households which have left the area and those which have newly entered it. Without necessitating a selection of an entirely new sample, care should be taken to exclude those which have left and include those which have newly arrived.

50. This brings us to yet another problem - the problem of what might be termed sampling in time. The case of households which exist as independent accounting entities only for a part of the year has already been discussed. It is

obvious that for them no accounts could be collected for the whole year, unless their accounts for the part of the year are regarded as their annual accounts. In a sense this is of course so. The other case is of those house holds which do not remain settled at one place for the whole year. It should be repeated that these include not only the so-called unsettled tribal people, but many other households, whose occupations cause them to migrate seasonally. In such cases it becomes difficult in practice to follow them up by means of a number of periodic visits. The problem then is whether the accounts for only part of the year of such households are entirely useless and wasted. This does not seem to be so. If we have taken, for instance, a month as an accounting period, there appears little difficulty in combining the accounts of several households for any single month. By so doing, we could in fact estimate the national aggregates month by month. These monthly estimates would themselves be of sufficient interest and they could be consolidated to produce the required annual estimates. This suggests another possibility. We need not, in that case, visit even the settled households every month. We could visit them, for instance, only once in three or four months to obtain the monthly accounts of the preceding month. That should enable us to approach a larger number and hence a greater variety of households. Thus the

accounts of each month become a complete item in themselves, and from the point of view of building up the national aggregates there need not be any specific attempt to construct the annual accounts of any particular household. While this becomes physically impossible for unsettled households, for settled ones, though there is no difficulty in making repeated visits, they are always a cause of nuisance and often arouse resistance and opposition.

51. Finally, we shall bring this discussion to a close by mentioning a point which is likely to raise controversy. The presumption underlying procedures of randomly selecting households for obtaining accounting details, is that all households, when randomly selected, do furnish details of their income and expenditure. This is basically not true. Human nature being what it is - there is no reason to suppose that conditions in a backward economy are particularly bad in this respect - households are generally not willing to part with this information. In a backward economy where persons are illiterate and have natural suspicions regarding such investigations, the situation is worse still, for there is seldom plain refusal to part with information. Understatement of income and overstatement of expenditure is universal. That is а common bias and is

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unavoidable. But instances of plain mischief are not uncommon. They prevail particularly in the higher income groups of households. When this factor is taken into consideration along with the character of the investigating agency usually available for this type of work, the result is disastrous. Investigators are often temporarily recruited and have no permanent interest in the work. They are of necessity hastily trained, stationed in unfamiliar regions and required to undergo life with which they are unaccustomed. In order to cover larger number of households spread over more centres, they need to be kept continuously moving. Unfamiliar with local conditions, they are in the first instance unable to detect incorrect statements. Having detected them, they cannot do much to correct them. They are not interested in correcting them, either, for if they did so they would reduce the amount of investigational work they can finish in a given period. The realisation that they are noting down obviously false information, soon demoralises even the honest among them. It is doubtful, therefore, whether estimates based on random samples of households, many of them being frankly reluctant to part with information, would be worth-while at all.

52. Willingness on the part of the households to part with information relating to their income and expenditure

appears to be a fundamental prerequisite in any attempt to construct social accounts of the household sector. This means that the necessary information must be obtained not from a randomly selected set of households, but from those who are willing to furnish such information. Experience suggests that such households if properly approached will not be found to be altogether wanting. There ate some who are willing to part with any information because they feel that they have nothing to lose thereby. There are others who are willing to cooperate because of an accounting sense, which, though perhaps uneducated, is instinctive in them. It is proposed, therefore, that in each of the randomly selected sample areas, a household accounting service should be initiated. The object of this service should be to educate persons in the purpose and utility of keeping accounts and to offer a free service to those who wish their accounts to be kept. Aided by adequate propaganda, it is hoped that the response will not be altogether poor. Surely, it should be possible to obtain a sizeable sample of households from each selected area. The sample would not, of course, be a random one and consequently the problems of the multiplier - that is, of inflating or, in this case, generalising the sample results would be difficult. This is a problem for statistical technique and it is hoped that its solution would not be beyond the skill

of statisticians not unaware of the peculiarities and requirements of the applied field. The solution might not be theoretically perfect but it is unlikely to vield results worse than those derived from the response of a random sample. For instance, we might, as before, take a complete census of all households of the selected area and arrange them in a stratified order based on the readily available information. The households voluntarily furnishing their accounts could then be marked off on the list and each such household might be supposed to represent all house holds in its immediate neighbourhood on the list. It is not suggested that this provides a solution of which statistical problem, the is undoubtedly complicated and will surely exact considerable skill and ingenuity. It

is suggested, however, that it is not impossible to obtain a reasonably satisfactory solution.

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### NOTES

1. Measurement of National income and the Construction of Social Accounts (Report of the Sub-Committee on National Income Statistics of the League of Nations Committee of Statistical Experts), United. Nations, 1947, pages 9/11.

- 2. Ibid., page 11.
- 3. Ibid., pages 12/13.
- 4. Ibid.. page 14.
- 5. Ibid., pages 14/17.

## ON THE NATIONALS SAMPLE SURVEY ESTIMATES OF CONSUMPTION OF FOODGRAINS IN INDIA

## V.M. Dandekar

India initiated and first conducted on an All-India basis the Multipurpose National Sample Survey. As is now well known, in the first round of the National Sample Survey during October 1950 to March 1951, two sets of questionnaires schedules, generally known as the Calcutta and the Poona Schedules, were used. A Report based on the Calcutta Schedules was prepared at the Indian Statistical Institute, Calcutta and issued by the Department of Economic Affairs, Ministry of Finance, Government of India in December 1952. The Report on the basis of the Poona Schedules, was prepared at the Gokhale Institute of Politics and Economics, Poona, and was submitted to the Government in July 1952. It was subsequently published by the Institute as their Publication No. 26.

2. One of the principal results of the Calcutta Report, and one which was announced with considerable eclat was that the estimated national consumption of foodgrains out of domestic production during the year from July 1949 to June 1950 was of the order of 60 million tons. As against this, the official estimates of foodgrains production for this period was about 48 million tons only, so that if the

1. IN 1950-51, the Government of NSS estimates were to be trusted the official estimates of production seemed to be gross under-estimates to the extent of about 20 to 25 per cent. It was natural, therefore, that the subject attracted con-siderable attention. In the present paper, it is proposed to examine the validity of the Calcutta NSS estimates of foodgrains ta and the Poona Schedules, were

3. The basis of the estimate of about 60 million tons of foodgrains consumption in India is the Calcutta estimate of an average foodgrains consumption of 18.3 oz. per person per day in the rural areas of India. This estimate was obtained on the basis of a sample of about 3,150 families distributed in 1,085 villages spread all over India. The selected families were interviewed some time during the period from October 1950 to March 1951 and were asked, among a large number of other items of consumer expenditure, as to how much of each type of foodgrain the family consumed during the period from July 1949 to June 1950. The quantities of consumption reported by the families included purchased as well as home-grown home-consumed commodities. They were given in a multitude of local measures and weights. These had to be converted to standard

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measures and added. The estimate of 18.3 oz. per person per day was the result of these operations.

4. In the following table we give the Calcutta NSS estimates of foodgrains consumption in different regions. The table gives the average foodgrains consumption in ounces per person per day and has been derived, from column (6) of table (67) of the Calcutta Report, making use of the conversion factors given in table (Z) of that Report.

Table I			
Calcutta NSS estimates of foodgrains consum	ption in ozs.	per person	per day

	Region	Consumption of foodgrains in ozs.
(1)	(2)	(3)
1.	North India (Uttar Pradesh)	20.72
2.	East India (Bihar, Orissa, West Bengal. Assam, Manipura, Tripura, Andaman, Nicobar)	18.43
3.	South India, (Madras, Mysore, Travancore, Cochin, Coorg)	14.53
4.	4. West India, (Bombay, Saurashtra, Kutch)	14.53
5.	Central India (Madhya Pradesh, Madhya Bharat, Hyderabad, Bhopal, Vindya pradesh)	16.50
6.	North-West India (Rajasthan, Pepsu Ajmer, Delhi, Punjab, Bilaspur Himachal Pradesh)	25.42
	All India	18.28

5. An examination of this table suggests that the variation between different regions is rather considerable. The estimates for the South and the Central India are in good mutual agreement. The estimate for West India is too much on the lower side. On the other hand, and to a much greater extent, the estimate for North-West India is too high, for even in comparison with the estimate for the North India which Comes closest to the North-West region, the estimate for the latter is almost. 25 per cent higher. The

5. An examination of this table sugsts that the variation between different gions is rather considerable. The large differences are considered real timates for the South and the Central dia are in good mutual agreement. The regarded as largely attributable to the timate for West India is too much on sampling variation

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ICMR studies in eight states of the Indian Union is shown to be 16.3 oz. per day. It should be noted that the eight states on which the above average is based do not include either the North or the North-West India regions where the Calcutta NSS estimates are suspiciously too high. In spite of this fact, the Calcutta NSS estimate for the average of the eight states is higher by more than 5 per cent of the ICMR estimate. The ICMR estimates are originally given on the basis of per adult equivalent and the above per capita estimates are based on a conversion factor of 75 adult equivalents per person. As the comparison between the ICMR and NSS estimates was not thought to be sufficiently satisfactory, with considerable inconclusive argument а higher conversion factor of 80 was advised. This

brought the ICMR average up to 17.38 oz. per person per day and hence much closer to the Calcutta estimate and actually a little higher than the latter. It would be thought, therefore, that the agreement or otherwise between the ICMR and the Calcutta NSS estimates was within the normal manipulation range of a statistician.

7. However, when the ICMR and the Calcutta NSS estimates are compared state by state, the disagreement between the two becomes obvious. In the following table we give the ICMR estimates based on both the conversion factors and compare them with the Calcutta estimates. The table is derived from Table (T) of the Calcutta Report.

State	ICMR with conversion factor = .75	ICMR with conversion factor = .80	Calcutta NSS
(1)	(2)	(3)	(4)
1. Assam	15.04	16.04	19.96
2. Bihar	15.17	16.18	18.75
3. Orissa	16.70	17.82	19.93
4. Madras	13.88	14.80	14.58
5. Hyderabad	14.55	15.52	15.47
6. Bombay	13.54	14.44	14.32
7. Madhya Pradesh	22.41	23.90	17.11
8. West Bengal	19.08	20.85	17.28
	16.30	17.38	17.18

 Table II. Consumption of Foodgrains in oz. per Person per day by ICMR

 Studies and the Calcutta NSS Estimates

three out of the eight states, namely, Madras, Hyderabad and Bombay, that the agreement between NSS and the ICMR estimates might be regarded as satisfactory. It should be noted that all the three states, the estimates are the lowest in both the series and that in the NSS series they are all less than 15.5 oz. Even here the NSS estimates are all larger than the corresponding ICMR estimates if the conversion factor .75 is adopted. However, they are all smaller than the ICMR estimates if the more favourable conversion factor of .80 is adopted. We might, therefore, regard the agreement between the two series in these three cases as satisfactory. In three other states, namely, Assam, Bihar and Orissa, the NSS estimates are considerably in excess of the ICMR estimates whichever conversion factor is used. In all the three cases the NSS estimates are all in excess of 18.5 oz. and they are all positively contradicted by the corresponding ICMR estimates which in that series are by no means exceptionally low.

9. In spite of this divergence between the Calcutta NSS and the ICMR estimates, the two averages based on the eight states come fairly close. This is because in the two states, namely, West Bengal and Madhy Pradesh, where the ICMR estimates are in excess of the NSS estimates, the former are very greatly, in

8. It would be obvious that it is only in excess of the latter. In both the cases the ICMR estimates are completely out of tune with the ICMR estimates in other States. For instance, the ICMR estimate for Madhya Pradesh is not only the maximum among the ICMR estimates but is almost 40 to 50 per cent higher than the ICMR estimates for most other states. In comparison, with the NSS estimate it is higher by more than 30 per cent. The same is partly true of the ICMR estimate for West Bengal. Among the ICMR estimates, it is the second highest and is not generally in tune with the ICMR estimates for other states. In comparison with the NSS estimate, it is higher by about 15 per cent. It is these two exceptionally large ICMR estimates and particularly the one for Madhya Pradesh, which are responsible for pulling up the ICMR average for the eight states and bringing it closer to the corresponding NSS average.

> 10. It would, therefore, appear that considering the nature of the divergence between the ICMR and the Calcutta NSS estimates for the eight states, it was improper to compare them by the combined average of the eight states. The divergence between the two series is not random but is clearly systematic. Firstly, it is only in the case of three states for which the estimates are the lowest in both the series that the agreement between them is satisfactory. Secondly, it is in the

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three states for which the NSS estimates are the maximum in that series, that they are greatly in excess of the corresponding ICMR estimates. Thirdly, it is in the two states for which the ICMR estimates are maximum in that series that they are greatly in excess of the NSS estimates. This only means that as far as the combined evidence of the NSS and ICMR results go, it is only the moderate estimates of consumption which stand in mutual agreement and that higher estimates of either series such as exceeding 18.5 oz. are positively contradicted by the corresponding estimates of the other series.

11. The three states, namely, Assam, Bihar and Orissa where the NSS estimates are all positively contradicted by the ICMR studies as being too high, form together with West Bengal the East India region of the Calcutta Report. The NSS estimate for this region is 18.48 oz. which is close to the NSS estimate for the whole of India. The NSS estimates for the North and the North-West India regions are higher still and no evidence has been put forward to support them.

12. The 61 ICMR diet studies, the results of which are discussed above, were all conducted in or after 1944 and

were related to rural families. Another set of studies, the results of which might be usefully compared, is the series of enquiries into family budgets of industrial workers at different centres conducted by the Department of Labour of the Government of India under the Cost of Living Index Scheme. Most of these enquiries were conducted during 1944 and 1945 when presumably most of the industrial centres were under statutory rationing of foodgrains. As already said, the data relate to industrial workers and not to rural families. Probably, the urban families consume less of foodgrains than do the rural families. This would be particularly true under a statutory rationing of foodgrains. However, among the urban families, the industrial workers, we suppose, would consume more foodgrains than most others both because of their generally lower incomes and the harder manual labour they are called upon to do. The foodgrains consumption of the industrial workers should, therefore, come much closer to the consumption of the rural families than is the average consumption of the urban families. In the following table we give the average foodgrains consumption per person per day at different centres.

State	Centre	No. of family budgets	Average consumption of foodgtains in oz.
(1)	(2)	(3)	(4)
Assam	Tinsukhia	185	15.03
Bihar	Dehri-on-Sone Monghir & Jamalpur Jharia	231 578 999	17.84 17.20 17.72
Orissa	Berhampur	123	13.05
Bengal	Howrah and Bally	1435	15.39
Madhya Pradesh	Jubbulpore Akola	482 315	15.51 15.18
Rajasthan	Ajmer	375	12.75
Delhi	Delhi	581	16.24

 
 Table III

 Average Foodgrains Consumption in oz. per person per day in Family Budgets of Industrial Workers at Various Industrial Centres

13. In addition to the centres given above, family budget enquiries were also conducted at Bombay, Ahmedabad, Jalgaon and Sholapur in Bombay State and at Sialkot and Ludhiana in the Punjab. However, the respective reports do not give the quantities consumed. The quantities consumed are also not available for three other centres namely Gauhatti, Cuttack and Kharakpore. At about the same time as the enquiries at these centres, enquiries were also conducted at, Tinsukhia, Berhampur and Howrah-Bally, respectively in the same states. As the prices of foodgrains were not likely to be very different at two industrial centres in the same state at the same time, particularly if the centres were under statutory foodgrains rationing, we thought that the quantities at Gauhatti, Cuttack and Kharakpore might, without much error, be derived on the basis of prices of Tinsukhia, Berhampur and Howrah-Bally, respectively. This was done. In the following table we give for the three centres the quantities of foodgrains consumption thus derived.

State	Centre	No. of family budgets	Average consumption of foodgtains in oz.
(1)	(2)	(3)	(4)
Assam Orissa Bengal	Gauhatti Cuttack Kharakpur	241 168 222	14.18 10.89 12.77

 Table IV.

 Consumption of Foodgrains in oz. per person per day Derived on the Basis of prices of Tinsukhia, Berhampur and Howrah-Bally respectively

14. It will be seen from the table III that it is only in Bihar that the average consumption of foodgrains per person per day exceeds 17 oz. The results of the three enquiries in Bihar are consistent and the figures look dependable. The averages, of the three enquiries are 17.84, 17.29 and 17.72 oz., respectively. In comparison with these the ICMR figure for rural area appears too low. On the other hand, the Calcutta NSS estimate is considerably higher. The estimates given by the family budget enquiries appear therefore, to be more acceptable, not just because they come in between the ICMR and the NSS estimates but also on account of the mutual agreement of the three family budget enquiries.

15. The next highest consumption appears to be at Delhi where the average consumption is 16-24 oz. per person per day. Delhi is included in the North-West India region of the Calcutta Report and the NSS estimate for that region is 25.42

oz. which is more than 50 per cent higher than the family budget estimate for Delhi. Another area included in the North-West India region of the Calcutta Report is Rajasthan and Ajmer. The family budget enquiry at Ajmer shows an average consumption of 12.75 oz. which is only half of the NSS estimate for this region. Quantity data are unfortunately not given in the reports for Sialkot and Ludhiana, both in the Punjab which is included in the North-West India region of the Calcutta Report. In terms of value, the family budget at Sialkot covering 283 families, shows monthly expenditure of Rs. 3.84 per person or an annual expenditure of Rs. 46.11 per person. The same at Ludhiana, based on 213 family budgets, is Rs. 45.00. The enquiries at Sialkot and Ludhiana were both conducted during January to April 1944 and the two results are obviously in good agreement. The NSS estimates refer to the period from July 1949 to June 1950. In order to make the family budget estimates for Sialkot

and Ludhiana comparable with the NSS estimate, we have adjusted the former by the index number for food at Ludhiana. The average food index number at Ludhiana with base 1944, when the enquiry was conducted, for the period July 1949 to June 1950 was 173. (Indian Labour Gazette). When adjusted with this index number, the family budget expenditure at Ludhiana comes to Rs. 77.84 and that at Sialkot to Rs. 79.77. Taking the two together we might say that the annual family budget expenditure on foodgrains during 1949-50 at Sialkot and Ludhiana was approximately Rs. 78.8 per person. As compared with this the NSS estimate for the North-West India region is Rs. 115.89 which is 45 per cent higher than the family budget estimate. It is clear, therefore, that the family budget estimates at all the four places, Delhi, Ajmer, Sialkot and Ludhiana do not support with the very high NSS estimate for the North-West India region.

16. The average consumption at all other places is round about 15 oz. and nowhere markedly exceeds 15.5 oz. Even if the derived estimates for Gauhatti, Cuttack and Kharakpur are all rejected as too low, probably on account of the manner in which they have been derived, the average consumption in all the three provinces of East India, namely, Assam, Orissa and Bengal seem considerably below the NSS estimates. This is particularly true of Orissa and Assam. The same is also true to some extent of the estimates in Madhya Pradesh. Family budget enquiries at Jubbulpore and Akola both give estimates of foodgrain consumption varying between 15 to 15.5 oz., which is considerably below the NSS estimate.

As was already noted the reports on family budget enquiries at the four centres in Bombay State, namely, Bombay, Ahmedabad, Sholapur and Jalgaon, do not give the quantities of foodgrains consumption. The enquiries at all the four places were conducted during the period from January 1944 to February 1945. Monthly expenditure on foodgrains per family based on a large number of family budgets is available for all the four centres for this period. In the following table we give these figures converted to annual basis per person. The difficulty of comparing these with the NSS estimate for the West India region are aggravated by the fact that the Cost of Living and Food Indexes for these centres are published with 1939 as the base and not 1944 as in the case of other centres. In two adjoining columns of the following table we give the average food indexes for these centres for the year 1944 and the period from July 1949 to June 1950. (Source: Indian Labour Gazette,

August 1950), to which the NSS estimates relate. In the next column are given the indexes with base shifted to 1944 by the link method. In the last column are given the annual per person expenditures obtained by adjusting the reported expenditures by this index. They are therefore comparable with the NSS estimate.

Table V.
Derivation of the Family Budget Expenditure on Foodgrains at four Centres in Bombay State,
for the Period July 1949 to June 1950 by Adjusting for the Food Indexes

Centre	Number of family bud- gets	Annual per person expenditure on foodgrains in 1944 Rs.	Average Food index for 1944 Base = 1939	Average Food index for 1949-50 Base = 1939	Average Food index for 1949-50 Base = 1944	Expenditure on foodgrains 1949-50 Rs.
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Bombay Ahmedabad Sholapur Jalgaon	2,080 1,820 778 338	47.81 46.23 36.61 33.92	235 326 297 303	332.8 412.4 437.1 458.7	1.41 1.26 1.47 1.51	67.54 58.49 58.87 51.35

Thus, the estimated annual per person family budget expenditure on foodgrains during 1949-50 would be Rs. 67.54 at Bombay, Rs. 58.49 at Ahmedabad, Rs. 53.87 at Sholapur and Rs. 51.35 at Jalgaon. The NSS estimate for the West India region is Rs. 58.40 and is obviously in good agreement with the above estimates derived from family budget enquiries.

In conclusion we may therefore note that the results of the family budget enquiries in general do not support the NSS estimates in certain regions where they are relatively very high. 17. With the publication of the Report on the Poona Schedules of the NSS, it was natural to expect that some independent verification or otherwise of the Calcutta NSS estimates might be available. However, unfortunately for several reasons the two sets of results are not directly Comparable. Nevertheless it might be useful to present the results in the Poona Report for comparative purposes.

18. The printed volume of the Poona Report gives only the all India averages of all the items appearing in the Poona Schedules. But in a memographed volume of State Tables are given all tables for 17 States or groups of States separately. By combining the States or below a comparative statement of the groups of States into the population zones Poona and the Calcutta estimates for the adopted in the Calcutta Report we give six regions.

Region	Poona Estimate Rs.	Calcutta Estimate Rs.	Poona estimate as percentage of Calcutta estimate
(1)	(2)	(3)	(4)
1. North India	217.07	456.99	47.50
2. East India	187.09	552.99	40.86
3. South India	204.67	367.71	55.66
4. West India	111.22	319.28	35.02
5. Central India	201.56	341.68	58.99
6. North-West India	223.99	610.82	36.67
	187.55	442.61	42.37

Table VI. Annual Consumer Expenditure on Foodgrains per Family According to Poona and Calcutta Reports on NSS

as the Poona Report gives estimates in terms of value only and not in terms of quantities, we shall compare the two series of estimates in terms of value only. Secondly, the Poona Report in Table C-XIII gives estimates of consumer expenditure on a number of items on the basis of weekly reporting only. The above estimates are therefore obtained by multiplying by 52 the weekly estimates appearing in the Report. This should be regarded as no more than a convenient way of making the comparison. Otherwise the two sets of estimates refer to two different periods; the Calcutta estimates refer to the period from July 1949 to June 1950, and the Poona estimates refer to an

19. To begin with, we should note that average week during the period from October 1950 to March 1951. The two periods are not, therefore, strictly comparable. Another important reason why the two sets of estimates are not comparable is that while the Calcutta consumer expenditure includes consumption of purchased as well as homegrown commodities, the Poona estimates refer only to purchases. There are also a few minor points of difference in the two schedules, - investigational methods and tabulation procedures, - which make the two sets of estimates not strictly comparable. Briefly, therefore, for various reasons the two sets of estimates are not comparable in absolute terms. Hence, in the following section what we shall

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of different regions in the two series of estimates. For this purpose, in the last column of the above table we have expressed the Poona estimates as a percentage of the Calcutta estimates.

20. The regional variation in the Calcutta estimates has already been commented upon. In respect of the Poona estimates we should note that except for the very low figure for the West India region, the estimates for the other regions are in close mutual agreement and show much less variation than shown by the Calcutta estimates. It seems possible that the Poona estimate for the West India region is in fact an under estimate. It should be noted that the Poona estimates refer to purchases only. A possible reason for the under estimation in West India is the foodgrain controls which were reportedly operative in Bombay State more effectively than in most other States in India.

21. Considering now the last column of the above table, we find that in South India and Central India, where the Poona and the Calcutta estimates are both in good internal agreement, the Poona estimates form between 55 to 60 per cent of the Calcutta estimates. In West India region, this percentage is only 33.56 and must be explained by the possibility of the Poona estimate being too low in this

attempt is to compare relative positions region. As has been pointed out, due to the more rigorous enforcement of food controls, there was a possibility that a large number of purchases outside the scope of the law, would not be reported. As the Poona estimates included only the purchases while the Calcutta estimates all consumption, it is also obvious that on this account the Poona estimates would suffer to a greater extent. As a consequence we should expect that the Poona estimate would form a smaller proportion of the Calcutta estimate.

> 22. In the three other regions, namely, the North-East and the North-West India regions, the Poona estimates bear rather low proportions to the corresponding Calcutta estimates. This is particularly true of the East India and the North-West India regions and the general evidence therefore point out in the same direction as indicated by the ICMR studies in the East India region and the Family Budget enquiries in the North-West India region.

> 23. To sum up, the evidence furnished by the ICMR diet studies, the family budget enquiries conducted by the Department of Labour and, to a smaller extent, the results of the Poona NSS giving expenditure on purchases of foodgrains in different regions, all suggest the possibility of the Calcutta NSS estimates being too much on the higher side in at least three regions namely, the
North, East and the North-West India. If true, it is these high estimates in the three regions which would appear to be largely responsible for pulling up the all India estimate to the rather high figure of 18.3 oz. per person per day.

24. If it is trued as it appears from the discussion above, that the Calcutta NSS estimates of foodgrains consumption in India were over-estimates on account of the over-reporting of foodgrains consumption in the Calcutta Schedules, it might be pointed out, that the full extent of such overstatement of consumption has not become apparent in the Calcutta Report on account of a certain error in the tabulation on which the Calcutta results were based. As was earlier pointed out the Calcutta estimate for all India is based on a sample of about 3,150 families distributed in 1,085 villages spread all over India.

In each of the sample villages three families were selected for the enquiry into consumer expenditure. Of these two were non-agricultural and only one was agricultural. Hence out of the total of about 3,150 families on which the all India estimate of 18.3 oz. was based, only one-third were agricultural while twothirds were non-agricultural. In rural India, the proportion of the agricultural and non-agricultural families would be approximately the reverse; that is to say, about one-third of the families would be non-agricultural and two-thirds would be agricultural. It is obvious therefore that the Calcutta NSS sample of families, on which was based the estimate of consumer expenditure, was disproportionately loaded with non-agricultural families. It should have been possible to correct for this bias in the sample by approximate counter-weighting in the tabulation. Presumably this has not been done. As a result the average of 18.3 oz. per person per day is heavily biased in favour of the non-agricultural families. It might be expected on general grounds, and some statistical evidence might also be put forward in its support, that the non-agricultural families generally speaking being the poorer would be living at a lower level of consumer expenditure including the expenditure on foodgrains.

A separate tabulation of the Poona Schedules for the agricultural and nonagricultural families, for instance, shows that the expenditure on purchases of foodgrains by the two groups of families is approximately the same; if anything it is somewhat smaller for the nonagricultural families. On all other items, the expenditure by the non-agricultural families appears to be considerably smaller than that by the agricultural, families. In respect of foodgrains, we should note that it is, the purchases of

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two groups of families. If we take into account the consumption of the homegrown foodgrains, as it is included in the Calcutta estimates, it is obvious that it would be substantially larger for the agricultural families. If this is true, it is obvious that in a correct tabulation of the Calcutta Schedules, where the agricultural families are given their due weightage, the average consumption of foodgrains per person per day would appear to be considerably higher than 18.3 oz. The error in the tabulation must therefore, be regarded a fortunate circumstance in so far as it prevented the Calcutta NSS results furnishing an even more absurdly, high estimate.

25. As was earlier pointed out the Calcutta NSS estimate of foodgrains consumption is based on the responses of sample of about 3,150 families to questions regarding their consumer expenditure on a large number of items during the period from July 1949 to June 1950. These questions were put to these families in a single visit paid some time during October 1950 to March 1951. Thus the reference period of the enquiry was not only too long but in most cases was far removed from the time of the enquiry. The merits of such a procedure are now well known and we shall not dwell on them any more. However, there appears, in this connection, a significant remark in

foodgrains which are about equal for the the Calcutta Report and it seems worthwhile examining the point of view presented in it. The Calcutta NSS Report, after furnishing evidence to support its estimate of foodgrain consumption states: "An average consumption of 8.9 chhataks or 18.3 oz. per person per day in the rural areas of India as obtained in this survey may not be an overestimation. On the contrary, it may well be that this figure is an underestimation for reasons explained below. The reference period of this survey was a year namely, July 1949 to June 1950. There is a school opinion which is definitely of the view that households cannot remember the quantities of consumption for such a long period as one year; and hence, in supplying information to investigators, they make omissions. Therefore. according to this school, it is likely that the figures of consumption would be underestimates." (page 75, Calcutta Report). We are not acquainted with the leaders of this school but it certainly appears to us a strange way of reasoning. When an investigator asks such a question as, say, "What was your total consumption of rice or refreshments during the year beginning with July 1949 to June 1950" respondent does not proceed by remembering all occasions on which he or his family ate rice or refreshments and the several quantities thereof and then by adding these together. If he did, one could visualise how he would forget some of

the occasions on which he ate refreshments, if he remembered the remaining, and how that might lead to an under-reporting. In fact, however, the respondent does not proceed thus, and it would be absurd to imagine his doing so. In most cases, the respondent has never added together any such items for any length of time. Therefore, when pressed by the investigator, what he reports is not a total of factual items but only what he thinks to be a plausible whole figure. In arriving at such a plausible figure he receives no small assistance from the investigator who often asks him a plausible monthly figure which by suitable multiplication is then converted into an annual figure. The normal response of an average respondent under such circumstances cannot, therefore, be more than a plausible guesswork. In this context, 'plausible' does not mean more than 'not obviously suspect'; in particular it does not mean 'free from bias'. In fact, in so far as it is a guess and not a reported tangible fact, it would be seldom free from bias. That is a patent fact of human guesswork. For instance, there is the normal bias of overstating expenditure and understating receipts. In addition there might exist special circumstances such as food controls which might impart specific biases to the response. The manner in which a rigorous enforcement of foodgrains controls might affect foodgrains against such consumption reported expenditure on purchases of estimates.

foodgrains has been clearly indicated. This same circumstance, particularly the compulsory procurement of surplus foodgrains from the cultivators, has the contrary effect of inducing overstatements of the foodgrains requirements. It appears, therefore, that the Calcutta estimates based as they were not on factual reporting but on plausible guesswork by a sample of families, were affected by such normal and special biases.

26. In so far as the estimates of consumption of foodgrains in the rural area are concerned, we do not think that the use of a shorter reference period such as a month or a week would considerably eliminate such biases as these. This is because the consumption of foodgrains in rural area comprises largely the consumption of home-grown foodgrains and this latter is not an accountable operation or a transaction, as, for instance, is the purchase of foodgrains. Therefore any enquiry into consumption of foodgrains in rural area, short of by entering into the kitchens and measuring the quantities being used, is likely to involve considerable guesswork on the part of the respondents, and hence is likely to be affected by consequent biases. It seems therefore, altogether inappropriate trying to check the production estimates of

# **CERTAIN MODIFIED FORMS OF BINOMIAL** AND POISSON DISTRIBUTIONS

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a single trial, the probability of x successes in *n* independent trials is given by the Binomial distribution

$$P(x) = {}^{n} c_{x} P^{x} q^{n-x}, x = 0, 1, ..., n.$$

The limiting form of this distribution when

$$n \to \infty, p \to 0$$
, such that  $np = \mu$ 

is the Poisson distribution

$$P(x) = e^{-\mu} \frac{\mu^x}{x!}, x = 0, 1, 2, \dots, \text{ad inf.}$$

In the following are developed two modified forms of these distributions under certain conditions affecting the independence of successive trials.

2. Let *p* be the probability of a success in a single trial with the condition that if a trial actually resulted in a success, then for the subsequent (m-1) trials the probability of success would be zero. It is This gives obvious that under this condition the  $F(0, n) = q^n$ ,

1. If p is the probability of success in successive trials would no longer be independent. It is required to find the probability of x successes in n such trials.

> 3. Let P(x, n) be the required probability, namely, of exactly x successes in *n* trials and

$$F(x,n) = \sum_{r=0}^{x} P(r,n)$$
 = the probability of

not more than x successes in *n* trials.

Consider now a sequence of *n* trials. If there is no success in the first (*n*-xm) trials, clearly there cannot be more than x successes it the whole sequence of ntriads. On the other hand, the probability that the first success is scored after s initial failures where s < (n-xm) and that there are not more than (x-1) successes afterwards will be given by

$$pq^{\delta} F(x-1, n-m-s).$$

Hence, we have the relation

$$F(x,n) = \sum_{8=0}^{n-xm-1} pq^{8}(x-1,n-m-s) + F(0,n-xm)$$
  
where  $F(0, n) = P(0, n) = q^{8}$ 

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$$F(0,n) = q^{n},$$

$$F(1,n) = \sum_{8=0}^{n-m-1} pq^{8}F(0,n-m-s) + F(n-m)$$

$$= (n-m)pq^{n-m} + q^{n-m}$$

$$= q^{n-m}[1 + (n-m)p],$$

$$F(2,n) = \sum_{8=0}^{n-2m-1} pq^{8}F(1,n-m-s) + F(0,n-2m)$$

$$= \sum_{8=0}^{n-2m-1} pq^{8}.q^{n-2m-8}[1 + (n-2m-s)p] + q^{n-2m}$$

$$= q^{n-2m} \left[ 1 + (n-2m)p + \frac{(n-2m)(n-2m+1)}{2}p^{2} \right]$$

etc. Ingeneral

$$F(x,n) = q^{n-xm} [1 + (n-xm)p + \frac{(n-xm)(n-xm+1)}{2!}p^2 + \dots + \frac{(n-xm)(n-xm+1)\dots(n-xm+x-1)}{x!}p^x],$$

that is the first (x+1) terms in the expansion of

 $q^{n-xm}(1-p)^{(n-xm)}.$ 

The above relation is true for all integral values of x for which  $n - xm \ge 0$ . For larger values of x for which n-xm < 0, clearly

$$F(x, n) = 1$$

From this the required probability P(x, n) is given by

$$P(x, n) = F(x, n) - F(x-1, n).$$

4. In many situations, instead of a series of discrete chances, an individual is exposed to a continuous chance with actual occurrences of the event followed by periods of immunity. For instance, in problems of industrial accidents, a worker might be supposed to be continuously exposed to the risk of an accident, an actual accident being followed by a period of immunity. In such cases, the probability of meeting with *x* accidents in a given period of time may be obtained

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as a Poisson limit of the above modified Binomial distribution. The limiting form of F(x, n) above, when

$$n \to \infty p \to 0, np = \lambda, \frac{m}{n} \to k$$

is easily seen to be

$$\lim_{n \to \infty} F(x, n) = F(x) = e^{-(1-xk)\lambda} \left[ 1 + (1-xk)\lambda + \dots + \frac{(1-xk)^{x}\lambda^{x}}{x!} \right]$$

which are the first (x+1) terms in the Poisson series with  $\mu = (1 - xk)\lambda$ . As applied to problems of industrial accidents, therefore, the modified Poisson distribution gives the probability of meeting with x accidents in a given

We have 
$$F(x) = e^{-(1-xk)\lambda} \sum_{8=0}^{x} \frac{1-xk)^{8}\lambda^{8}}{s!}$$
  
Hence  $\frac{\delta F(x)}{\delta \lambda} = (1-xk)e^{-(1-xk)\lambda}\frac{(1-xk)^{x}\lambda^{x}}{x!}$   
and  $\frac{\delta F(x)}{\delta k} = \lambda x e^{-(1-xk)\lambda}\frac{(1-xk)^{x}\lambda^{x}}{x!}$ .  
Further  $\frac{\delta P(x)}{\delta \lambda} = \frac{\delta F(x)}{\delta \lambda} - \frac{\delta F(x-1)}{\delta \lambda}$   
and  $\frac{\delta P(x)}{\delta k} = \frac{\delta F(x)}{\delta k} - \frac{\delta F(x-1)}{\delta k}$ 

The usual method of successive approximations (illustrated in Rao, 1952, Chapter 4) to obtain the maximum likelihood estimates thus becomes amenable to systematic computation.

6. In the application of these distributions to observed material an important

point must be bone in mind. In the derivation of the modified binomial in section 3 above, it was presumed that the probability of success in the first trial under observation was p and not zero. This would be so if the first trial under observation were also the first trial of the experiment or more generally, if the first

period, with an infinitesimal chance of an accident at every instant, with the condition that if an individual actually met with an accident at any instant, he remained immune to any further accident for a subsequent fraction k of the total period under observation.

5. In fitting the distribution to observed data, the two parameters  $\lambda$  and *k* shall have to be estimated. It is possible to obtain maximum likelihood estimates by means of successive approximations.

by a success in one of the (m - 1) trials preceding the beginning of observation. In observational material this condition in general would not be satisfied. In the problems of industrial accidents, for instance, some of the workers might have met with an accident not long before the period of observation so that they were immune to accident for some time at the beginning of the observational period. The observational record in such cases would, therefore, be as though an experimenter were giving a number of trials to a certain event under given probability conditions while an investigator suddenly stepped in, observed a sequence of *n* trials and noted the number of occurrences of the event. It is not impossible, therefore, that some of the first trials which the investigator observed were some of those (m - 1)following an actual occurrence and hence having a zero probability of occurrence. It is obvious that the distributions derived above would not be applicable to such cases as these. Let us call such an observed sequence, an *abrupt* sequence and derive the probability of x successes in an *abrupt* sequence of *n* trials under the same probability conditions as before.

7. To begin with let us consider an abrupt sequence of (m - 1) trials. In such

trial under observation were not preceded a sequence, we may have a success either by a success in one of the (m - 1) trials in the first, second, ... or in the (m - 1) th preceding the beginning of observation. trial or no success at all. Let

> $P_x$  = the probability that we have a success in the *x*-th trial.

- $P = \sum_{x=1}^{m-1} P_x$  = the probability of a success during the abrupt sequence of (*m* - *1*) trials.
- Q = 1 P = the probability of no success during the abrupt sequence of (m - 1) trials.

Next consider the sequence of (m - 1) trials. immediately following the first sequence. The probabilities  $P_x$  for this latter sequence must be the same as those of the former.

Hence  

$$P_1 = Qp,$$
  
 $P_2 = (P_1 + Qq)p = Qp,$   
... ... ...  
 $P_x = (P_{x-1} + P_{x-2} q + ... + Qq^{x-1})p$   
 $= Q_p,$ 

where *p* is as before the probability of success in a single trial not one of the (m-1) immediately following an actual success and q = 1-*p*. Hence

$$P_1 = P_2 = ... = P_{m-1} = Qp$$
  
Therefore  $P = \sum_{x=1}^{m-1} P_x = (m-1)Qp$ .

$$Q = 1 - P = 1 - (m - 1)Qp$$

and 
$$P = \frac{m-1)p}{1+(m-1)p}$$
.

 $Q = \frac{1}{1 + (m-1)n}$ 

We might state this result as a theorem.

Theorem: In an unending sequence of trials with probability of success in a trial either zero or p, according as the trial is or is not one of the (m-1) immediately following an actual success, the probability of success in any (m-1) successive trials is given by

$$P = \frac{(m-1)p}{1+(m-1)p}$$

8. Next let

 $P\alpha(x, n)$  the probability of exactly x in = successes an abrupt sequence of *n* trials, and

$$F\alpha(x, n) \sum_{x=0}^{n} P_{\alpha}(x, n) = \text{the probability}$$

= of not more than x successes in an abrupt sequence of it trials.

The conditions of  $F\alpha(x, n)$  are satisfied if whatever happens in the first (m-1) trials of the abrupt sequence we do not get more than (x-1) successes in the remaining (n-m+1) trials. There remains then one case to be taken into account, namely, that we have no success in the first (m-1) trials Let

but have exactly x successes in the remaining (n-m + 1) trials. We have, therefore, the relation

$$F\alpha(x, n) = F\alpha(x - 1, n - m + 1) + QP(x, n - m + 1)$$

and  $F\alpha(0,n) = QP(0,n-m+1) = Qq^{n-m+1}$ 

$$=\frac{q^{n-m+1}}{1+(m-1)p}$$

#### We thus have

$$F\alpha(1,n) = F\alpha(0,n-m+1) + QP(1,n-m+1)$$
  
= QP(0,n-2m+2) + QP(1,n-m+1)  
= QP(1,n-m+1) + P(0,n-2m+2),  
F\alpha(2,n) = F\alpha(1,n-m+1) + QP(2,n-m+1)  
= QP(2,n-m+1) + P(1,n-2m+2) + P(0,n-3m+3) etc

In general we have

$$F\alpha(x,n) = Q\sum_{8=0}^{x} P(x-s), n-(8+1)(m-1).$$

This might be compared with

$$F(x,n) = \sum_{8=0}^{x} P(x-8,n).$$

9. In order to obtain the corresponding Poisson limiting form, we proceed a~ follows:

$$F\alpha(x,n) = Q \sum_{s=0}^{x} P(x-s), n - (s+1)(m-1)$$

$$\Phi_{\alpha}(x,n) = \sum_{x=0}^{x} F_{\alpha}(x,n)$$
  
=  $Q \sum_{x=0}^{x} \sum_{8=0}^{x} P(x-8), n - (8+1)(m-1)$   
=  $Q \sum_{8=0}^{x} F(x-8), n - (8+1)(m-1).$ 

Hence

 $Lt_{n \to \infty} \Phi_{\alpha}(x, n) = \Phi_{\alpha}(x)$  $= \frac{e^{-(1 - \overline{x+1}k)\lambda}}{1 + k\lambda} \sum_{k=0}^{x} \sum_{t=0}^{x-k} \frac{(1 - \overline{x+1}k)^{t}\lambda^{t}}{t!}.$ 

From this the required probabilities are obtained by the relations

and

$$F_{\alpha}(x) = \Phi_{\alpha}(x) - \Phi_{\alpha}(x-1).$$

 $P_{\alpha}(x) = F_{\alpha}(x) - F_{\alpha}(x-1)$ 

10. For the purpose of obtaining the maximum likelihood estimates of the parameters  $\lambda$  and k, we have the following.

$$(1+k\lambda)\frac{\delta\Phi_{\alpha}(x)}{\delta\lambda} = k\Phi_{\alpha}(x) - (1-\overline{x+1}k)e^{-(1-\overline{x+1}k)\lambda}\sum_{t=0}^{x} \frac{(1-\overline{x+1}k)'\lambda}{t!}$$
  
and  $(1+k\lambda)\frac{\delta\Phi_{\alpha}(x)}{\delta k} = \lambda\Phi_{\alpha}(x) + (x+1)\lambda e^{-(1-\overline{x+1}k)\lambda}\sum_{t=0}^{x} \frac{(1-\overline{x+1}k)'\lambda'}{t!}$ 

By means of these the maximum likelihood estimates might be obtained by the standard procedure of successive approximations.

11. It will be appreciated that in problems where the kind of distributions derived above are applicable, it is in their

second form, namely, in an abrupt sequence or an abrupt period of observations, that they will be found generally to be more appropriate.

12. These distributions were originally derived in connection with certain frequency distributions obtained in a fertility enquiry. In 1945, the Gokhale Institute of Politics and Economics conducted as part of a comprehensive Socio-economic Survey of Kolhapur City, an enquiry into human fertility. A ten per cent random sample of households was selected for the purpose. From among the selected households was obtained, in respect of all women of fertile ages, their fertility history during the five year period from 1941 to 1945. The results of the enquiry are published in a publication of the Institute.\*

13. Due to the fact that in the case of each woman fertility record of five years was obtained, it was possible to distribute the women of any age-group according to the number of births given by them during the five year period. It was then natural to enquire whether suitable probability distributions could be found to fit these frequency distributions. To begin with, Binomial distributions were

A Socio-economic Survey of Kolhapur City Part I - Population and Fertility. By N. V. Sovani, Gokhale Institute of Politics and Economics Poona.

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fitted with probabilities given by the age-specific fertility rates and with n = 5, that being the number of years in the period of enquiry. The fits were all unsatisfactory. Allowance was then made for the fact that probabilities, that is the age-specific fertility rates could not remain the same during the five year period, as the women advanced in age. However, this failed to effect any appreciable improvement. It was then natural to doubt the validity of taking it = 5, for obviously there was no reason to suppose that five years should mean necessarily, five independent chances of confinement or delivery. Fresh Binomials were, therefore, attempted with nand hence also p left to be estimated from the observed distributions. This procedure yielded different values of n for different age-groups, and while in some cases the values were positive, though fractional, in others they were actually negative. No interpretation could be put on such negative values of n. Moreover, the fits also were not very satisfactory. This failure led to doubting the hypothesis of independent trials and it is in search of a suitable hypothesis with non-independent trials that the above distributions were obtained.

14. In obtaining the distributions of women according to the number of confinements experienced by them during a given period and under given fertility conditions, the most important factor for which an allowance must be made is the physiological fact of reproduction that a woman is not; and cannot be exposed to the chance, of becoming pregnant while she is already pregnant and perhaps also for sometime after she has delivered. It will be readily seen that the manner in which the independence of successive trials is modified in the above distributions makes an allowance for this fact. In their fitting to the observed distributions, however, the modified distributions derived above do not, fit well and in fact do not afford any considerable improvement over the ordinary **Binomial** failure The of these distributions in fitting to the observed data is, in this case, possibly partly due to the fact that no allowance is made in these distributions for the circumstances that the fertility or pregnancy rates do not remain constant over the five year period under observation. Also, it appears that some allowance must be made for the sterility cases if satisfactory theoretical distributions are to be derived to fit these distributions. particular frequency Therefore, in the following section, in giving these observed distributions and the corresponding fits of the theoretical distributions, the purpose is not more than to illustrate the procedure of fitting the derived distributions.

15. We shall illustrate the procedure by considering the group of women in the age group 26-30. There were 369 women of this age group in the sample. In the following table we give the distribution of these women according to the number of children born to them in the five year period preceding the date of enquiry.

Table 1. Distribution of Number of Children forWomen in the Age Group 26-30

number of children during five years (x)	number of women $(n_x)$
(1)	(2)
0	105
1	114
2	118
3	29
4	3
total	369

16. The order to fit the first form of the modified Poisson distribution, the following trial values were taken for the two parameters to begin with

$$\lambda = 1.22; \qquad k = 0$$

That Is to say to begin with the ordinary Poisson was fitted. The set of improved values after the first cycle of fittings were as under:

$$\lambda = 1.4745;$$
 k0.1750

In Table 2 are shown the values of  $\lambda$  and *k*, obtained at the end of successive cycles of fitting.

Table 2. Successive Values of  $\lambda$  and k in Fitting First Modified Form of Poisson to Data of Table 1

cycle number	λ	k
(1)	(2)	(3)
0	1.2200	0.0000
1	1.4745	0.1750
2	1.3859	0.1958
3	1.4395	0.1348
4	1.4261	0.1254
5	1.4133	0.1192
6	1.4218	0.1217

In Table 3 are given the observed frequencies and the expected frequencies based on the values of  $\lambda$  and k obtained at the end of the sixth cycle.

Table 3. Fit of the First Form of The ModifiedPoisson Distribution to Data in Table 1

number of children (x)	observed frequencies $(n_x)$	expected frequencies $(m_x)$
(1)	(2)	(3)
0	100	89.0
1	114	149.0
2	118	95.9
3	29	30.1
4 or more	3	5.0
total	369	369.0

 $x^2 = 17.0, d.f. = 2$ 

Obviously the fit is not satisfactory.

17. In order to fit the second form of the modified Poisson distribution, namely, in an abrupt period of observations, a beginning was made with the following values of the parameters:

$$\lambda = 1.4218, \quad k = 0.1217$$

namely the values finally used in fitting the first form of the distribution. Only a single cycle of fitting was carried through. The revised values of the parameters are

$$\lambda = 1.4211, \quad k = 0.1182.$$

In Table 4 are given the observed frequencies and the expected frequencies these values of the parameters.

number of children (x)	observed frequencies $(n_x)$	expected frequencies $(m_x)$
(1)	(2)	(3)
0	105	90.2
1	114	148.8
2	118	95.2
3	29	29.7
4 or more	3	5.0

369

total

Table 4. Fit of the Second Form of the ModifiedPoisson Distribution to Data in Table 1.

 $x^2 = 16.2$ , d.f. = 2

369.0

Thus the second form again does not give a satisfactory fit to the derived distribution and in particular does not effect any considerable improvement over the fit of the first form.

18. The two forms of the distribution were also fitted to a similar distribution of women in another age group, namely in 21-25 according to the number of children born to them during, the, five year period preceding the date of enquiry (Socio-economic survey of Kolhapur City). There were 465 women, of this age group in the sample. In Table 5 give the observed frequency distribution, and expected frequencies on the basis of the two forms of the modified Poisson distribution.

It is obvious that as in the previous case both the forms of the distributions do not fit well to the observed data, it should be noted nevertheless that the values of k in the two cases lie between 0.12 and 0.16. The period of observation was of 5 years, so that the period of "immunity" indicated by the value of k is seen to be between 6 and 8 months.

Number of Children (x)	Number of Women $(n_x)$	I Form Expected Frequency $(m_x)$	II Form Expected Frequency( $m_x$ )
(1)	(2)	(3)	(4)
0	102	91.2	91.1
1	158	188.7	188.8
2	166	137.6	137.6
3	35	42.3	42.2
4	3	5.1	5.1
5 or more	1	0.2	0.2
total	465	465.1	465.0
		$\lambda = 1.6292$	$\lambda = 1.6292$
		<i>k</i> = 0.1583	k = 0.1571
		$x^2 = 13.69$	$x^2 = 13.68$

Table 5. Fit of the First and the Second forms of the Modified Poisson Distribution to the Distribut	tion
of the Number of Children Born to Women in the Age Group 21-25	

observed data for which they were orig- the three cases. inally derived, it was thought that they might be found to give more satisfactory form of the modified Poisson distribution shown in Table 6.

19. Though the two forms of the was therefore fitted to three well known modified Poisson distribution are seen to frequency distributions. As will be seen, give rather unsatisfactory fits to the very satisfactory fits are obtained in all

d.f. = 2

d.f. = 2

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20. Firstly, we shall consider the fits to some of this other situation to Greenwood and Yule (1920) data of which the ordinary Poisson distribution accidents to 647 women working on H.E. is found to be not much suited. The first Shells during 5 weeks. The results are

			Expected Frequency	
Number of Accidents	Observed Frequency	Ordinary Poisson	Negative Binomial	Modified Poisson
(1)	(2)	(3)	(4)	(5)
0	447	406.4	442:9	446.5
1	132	189.0	138.5	133.1
2	42	43.9	44.4	43.7
3	21	6.8	14.3	15.0
4	3	0.8	4.6	5.2
5 or more	2	0.1	2.3	2.9
Total	647	647.0	647.0	647.0
			$X^2 = 4.135$	$X^2 = 3.675$
			df - 2	df - 2

Table 6. Accidents to 647 Women Working On H.E. Shells During 5 Weeks

The observed frequencies are given in the second column and the expected frequencies on the basis of the ordinary Poisson distribution are given in the third column. The latter obviously provides a very unsatisfactory fit, a possible reason for which is that the liability of individuals to accidents might vary. As a working hypothesis it was supposed that the population is composed of individuals with different degrees of accident proneness, represented by different values of  $\lambda$  in a Poisson distribution and further that in the population the distribution of  $\lambda$  is given by

$$dF = \frac{c^p}{\Gamma(p)} e^{-c\lambda} \lambda^{p-1} d\lambda, \qquad 0 \le \lambda \le \infty$$

The supposition leads to the negative Binomial given by

$$\left(\frac{c}{c+1}\right)^{p} \left[1, \frac{P}{c+1}, \frac{p(p+1)}{2!(c+1)^{2}}, \dots\right]$$

The expected frequencies given in the fourth column of the above table are based on this distribution and evidently are in a much better agreement with the observed frequencies.

21. The frequencies shown in the last column of the table are based on the first form of the modified Poisson distribution and show further improvement in the agreement with the observations. In judging the fits of the negative Binomial and the modified Poisson it should be noted that both the distributions have two parameters, c and p in the case of the negative Binomial and  $\lambda$  and k in the case

of the modified Poisson. The values of  $\lambda$ and k in the present case are  $\lambda = 0.3708$ and k = -0.4613.

22. The second frequency distribution to which the modified Poisson distribution is fitted in its first form is the data of Whitaker (1914) on the number of death notices of women, 80 years of age and over in the London "Times" on each day

for three consecutive years. The ordinary Poisson distribution is seen to give a very poor fit to this distribution. Schilling (1947) has shown that the distribution can be very satisfactorily explained as the sum of two Poisson distributions. In Table 7, we reproduce the observed distribution, and the related theoretical distributions.

Table 7. Death Notices of Women, 80 Years of Age and Over in the London "Times" on Each Day for Three Consecutive Years

Number of Death Notices	Number of Days	Ordinary Poisson	Sum of Two Poissons	Modified Poisson
(1)	(2)	(3)	(4)	(5)
0	162	121	163	155.14
1	267	267	266	276.21
2	271	294	259	269.44
3	185	216	193	190.87
4	111	119	117	109.87
5	61	52	59	54.56
6	27	19	26	24.25
7	8	6	9	9.87
8	3	2	3	3.75
9	1		1	2.04
	1096	1096	1096	1096.00
			$X^2 = 1.389$ d.f. = 4	$X^2 = 2.73$ d.f. = 5

the frequencies on the basis of the three parameters, the modified Poisson modified Poisson. It is obvious that the involved only two. When allowance is fit though satisfactory is not better than made for this fact, it will appear that the the fit by the sum of two Poissons. It goodness of fit of modified Poisson, as should nevertheless be noted that while judged by the  $X^2$ , is as good as that of the

In the last column of the table are given the sum of two Poissons makes use of

sum of two Poissons. The values of the parameters in the present case are

$$\lambda = 1.9551;$$
  $k = -0.04675.$ 

23. The third frequency distribution to which the first form of the modified Poisson has been fitted is based on the of an ordinary Poisson distribution.

Bell Telephone Company data regarding "lost articles found in the Telephone and Telegraph Buildings, New York City." (Thorndike, 1926).

In Table 8, we give the data and the fit

No. of Lost Articles	No. of Days	Ordinary Poisson	Modified Poisson
(1)	(2)	(3)	(4)
0	169	149.84	166.26
1	134	155.50	140.41
2	74	80.69	72.08
3	32	27.92	29.21
4	11	7.24	10.31
5	2	1.50	3.32
6	0	0.26	0.99
7	1	0.05	0.42
total	423	423.00	423.00
		$X^2 = 9.28$	$X^2 = 0.73$
		d.f. = 3	d.f. = 2

Table 8. Lost Articles Found in the Telephone and Telegraph Building, New York City

satisfactory.

modified Poisson distribution is seen to on the negative value of k.

In the last column of the table are shown give a satisfactory fit to the observed data, the frequencies based on the modified the interpretation of the negative values Poisson. It is obvious that the fit is very of k is not clearly apparent from the manner in which the distribution was initially derived. Nevertheless, it seems 24. It will be noted that in all the three that it is not impossible in each particular cases above, k has a negative value. case to put an appropriate, though Therefore, though in these cases the somewhat more artificial, interpretation

#### SUMMARY

Two modified forms of the Binomial and the Poisson distributions are derived under specified conditions affecting the independence of successive trials and are shown to give satisfactory fits to three frequency distributions to which the ordinary Poisson distribution is known not to give a satisfactory fit.

My thanks are due to two of my students H. Ramamurthy and R. G. Narasimhan for their assistance in doing the numerical work in this paper.

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## A SURVEY OF RURAL HOUSING IN A DECCAN VILLAGE

## V. M. Dandekar

**1.1** There are only a few housing studies done in this country and very few of them relate to rural housing. The present one is intended to be a carefully worked out study of rural housing in a village in the Bombay Deccan. Though the results pertain to a single village, it is hoped that they will be found of some value. The principal interest of the study is, however, methodological. In its method, it is perhaps unique in so far as it is based on actual quantitative measurements of the houses and their detailed valuations.

**1.2** In the second section is given a brief description of the village Khandali and the lay of its houses. In subsequent sections is presented survey material relating to Public buildings, Non-residential private structures, Unoccupied structures, and Residential houses respectively. In the last section the situation is summarised.

### 2. Village Khandali

**2.1** Khandali is a village in Malshiras taluka of Sholapur district in Bombay State. It is situated on the Sangola-Indapur road and is 21 miles from Indapur and  $4\frac{1}{2}$  miles from Akluj which is an

important marketing centre. The celebrated Pandharpur is only at a distance of 24 miles. The village is served by the Nira Right Bank Canal No. 1 and grows sugarcane as the principal irrigated crop. It is in the vicinity of two sugar mills one at Malinagar and another at Borgaon, both only at a distance of three miles from the village on either side. The rainfall in the area is scanty and the region is liable to frequent draughts and famines.

**2.2** The village lands measure nearly 4,400 acres. Of these about 4,035 acres are cultivable and 365 acres are not cultivable. Of the latter, 126 acres are unculturable waste, 128 acres are occupied by the Nira Right Bank Canal which serves the village, 27 acres are under small streams, 26 acres are occupied by railway, 22 acres are reserved as free grazing and 13 acres are under roads and paths. The burial and burning grounds occupy about an acre. The remaining 22 acres comprise what is called the village site in which are situated the bulk of the village houses.

**2.3** The population of the village according to 1951 census is 2,023. There are 355 houses and 420 households. At the time of our survey in 1947-48, the houses bore the numbers given at the

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census in 1941. They numbered from 1 to 509. Not all of these were situated on the village site mentioned above. Only 292 houses were located in a compact block on the village site. The remaining

houses were scattered all over the village lands and were clustered in a number of smaller clusters. Their details are as under:-

In the village site proper	1 to 292
On village land-to the east of village site scattered	293 to 330
Brihan Maharashtra Sugar Syndicate Farm-labour	331 to 343
Bordering on the village site	344 to 350
On village lands-to the west of village site- scattered	351 to 410
On the farm of Shri Raut	411 to 431
Pawar wadi- in one cluster	432 to 456
Pimpale wadi- in one cluster	457 to 462
Riswadkar Settlement	463 to 477
Scattered all over	477 to 509

**2.4** Our survey covered all buildings on the village site and a few lying on its outskirts. The houses located on the village site bore the census numbers from 1 to 292. The few houses lying on its outskirts which we have included in our survey were numbered from 344 to 350. Our survey thus covers 299 census numbered houses. The census house numbers, it should be noted, were those given at the census in 1941. 6 of the numbers from 1 to 292 could not be traced. On enquiry it was understood that they were temporary huts standing at the time of the 1941 census but now no more to be found. As a result, we might say that our survey covered only 293 census numbered houses. On the other hand, some of the structures in the village site which are included in our survey, did not bear any census numbers. There details

are given in a subsequent section.

2.5 Even though the census numbering is called house numbering and the number of houses appearing in census handbooks presumably correspond to this numbering, it should be noted that the census house is not in all eases a house in the structural sense of the term. When in a single structure, for instance, more than one separate households stay, a separate number is usually given to each tenement. On the other hand, a census number is given even to non-residential buildings. For clarity in terminology, we shall, therefore. use the term "structures" for structurally independent buildings. Structures will be called residential if one or more families stay in them. A residential structure or a part of it which is

occupied by a single household will be called a tenement. A tenement may be either owned or rented.

2.6 In these terms our survey covered a total of 187 structures. As mentioned earlier, some of these bore no census numbers, presumably because these were in an altogether deteriorated condition and hence unfit either for living or for any other use. We have purposefully included them in our investigation. On the other hand, sonic of the structures comprised more than one census numbers. In Table 1 we give a distribution of the 187 structures according to the number of census house numbers they bore.

 
 Table 1. Distribution of the Structures according to number of census house numbers they bore

Number of census house numbers	Number of structures
(1)	(2)
0	23
1	91
2	43
3	16
4	9
5	1
6	1
7	3
Total	187

Thus 23 structures bore no census number while the remaining 164 structures comprised a total of 298 census house numbers.

2.7 Details of the 28 structures not bearing a census number were as under:-13 private structures were in an entirely depleted state and stood without any roof on them. 2 public buildings, an old building of the Local Board Primary School and another a community sitting place of the Mangs were in the same state. Two private structures in good condition but not bearing a census number were a cattle shed and a private temple. The remaining 6 structures not bearing a census number were all new and did not exist at the time of the census in 1941.

**2.8** In the following sections, we shall describe the physical condition and the use or otherwise of the 187 structures studied by us.

#### 3. Public Buildings

**3.1** The 187 structures studied by us might be broadly divided into two categories, namely, residential and nonresidential. Residential structures are those in which one or more families stay. Among the 187 structures surveyed, 51 were non-residential and 136 were residential. The non-residential structures might be further classified into three categories (i) Public (ii) Private non residential and (iii) Private unoccupied. Of the 51 non-residential structures there

were 10, 6 and 35 respectively of the three categories. In the present section we shall describe the public buildings.

**3.2** The 10 public buildings appearing in our survey were as under:-

- 1. Village Chawadi
- 2. Hanuman temple
- 3. Mahadeo temple
- 4. Bahiroba temple
- 5. Mariai temple

6. Local Board Primary School-old building

7. Local Board Primary School-new building

8. Vithoba temple-now converted into a school building

9. Masjid

10. Mang Chawadi.

In the following paragraphs we shall give a description of their present condition, use and management.

**3.3** Village Chawadi: This, so to say, is the village office and is the place for transacting all official business. It is a rectangular building of 35 x 20 feet dimensions divided into two rooms. The outer room is a hall of 25 x 20 feet and is open on one side. The other room measures 10 x 20 feet and is closed on all sides with entrance door from the ball. The whole building stands on a plinth of rests. The rest of the building is an open dressed stone raised to 2 feet above the hall with walls on three sides and open on ground level. The wall masonry is in one side. The whole building stands on a

dressed stone. The walls are 3 feet wide and 10 feet in height, built of dressed stone in mud. The roof is of mud with ceiling of cut wood and planks. On the front side, the roof is supported on four wooden pillars of 6" x 6" dimensions. The door leading to the inner room measures  $4 \ge 2\frac{1}{2}$  feet. Our valuation of the building

works to Rs. 3169.

3.4 The inner room is used to keep the official papers and is locked. The key is with the village Patil. The building is in the care of the village Patil and Talathi (Patwari) who is the revenue clerk. It is regularly smeared with dung by the Koli and swept by the Ramoshi. Both these latter are in the village hereditary service. The building is in good condition and there are no repairing expenses. It is regularly white-washed and painted. The expenses are met through public contribution. In the outside hall is kept a table and a chair for office use.

3.5 Hanuman temple: This is a rectangular building with inside measurements of 40 x 22 feet. In one corner there is a closed room of 12 x 6 feet for the priest to live in. 4 feet away from this room is another closed room of 10 x 7 feet which is the inner temple where the deity plinth of dressed stone raised to  $2\frac{1}{2}$  feet

above the ground level. The Wall masonry is in dressed stone. The outside walls are 3 feet wide while the inside walls are 2 feet wide. The floor to ceiling height is 10 feet. The roof is terraced. The terrace rests on the backside wall and six wooden pillars in front. The wooden pillars are of good cut timber and are 6 x 6 inches. The wood used for the ceiling is also of good cut teak. The doors of the inside two rooms are also of fairly good quality timber and can be locked. A staircase from outside leads to terrace. Our valuation of this building comes to Rs. 4.358.

**3.6** The priest of this temple is not a local person but an outsider who has apparently no near relatives. He is not a Gurav as one normally is but is a Shimpi by caste. He is appointed the priest and lives in the room provided for. He collects foodgrains or flour in the village by voluntary contribution and cooks his own food. The villagers, by contribution, also provide for his clothing. He takes care of the temple which includes smearing the floor with dung and sweeping. He, of course, also looks after the deity. In the evening an oil lamp burns near the deity for which villagers make cash contributions. In this village the Maratha families bear three principal family names, Patale and Bhonsale and Kadam. The general care of the Hanuman temple rests with the Patale family while the Bhonsale and the Kadam families take care of the Mahadeo temple. In the Hanuman temple every day regularly at night from 9 to 11 a group of persons sing Bhajan, which is religious songs accompanied by music. The party consists exclusively of members of the Patale families. The party is reputed in the neighbourhood and is often invited outside.

**3.7** Celebrations on a considerable scale are held in the Hanuman temple on several occasions such as the birth anniversaries of Ram, Krishna and Hanuman, death anniversary of the saint Sawata Mali, as also on Mahashivaratri and the principal Ekadashies. Celebrations of the birth anniversary of Lord Krishna extend over a whole week. At the end of each celebration, the Bhajan parties are given a feast on behalf of the village. The celebrations are allocated one each to the bigger of the cultivators in the village. They meet the expenses of the respective celebrations.

**3.8** The temple is on the road side and is used by travellers as a rest-house for the night. There is no other rest-house in the village.

**3.9** *Mahadeo Temple:* This temple is built in the Hemadpanti style and is constructed entirely of stone. The temple

stands on a wide plinth raised to five feet comes to Rs. 1,140. The person who above the ground level and of dimensions 77 x 59 feet. The plinth itself is built in large dressed stone and is led to by a flight of wide stone steps. The temple stands in the centre of this plinth platform and has approximate dimensions of 35 x 20 feet. The inner temple is of 10 x 10 feet while the outside hall is of 20 x 20 feet. The walls are all of stone and are 3 feet wide. On them and on 8 pillars of dressed stone of 12 x 12 inches rests the all-stone roof. On stone beams of 18 x 18 inches are put stone slabs of 8 inches thickness. One is particularly struck by the big sized stone used in the construction. There are no doors anywhere. Our valuation of the building comes to Rs. 7,994.

**3.10** The temple is in the general care of the Bhonsale and Kadam families in the village, though the same priest who looks after the Hanuman temple also takes care of this one. A party from the Bhonsale and Kadam families sing Bhajan every Monday. Birth anniversary of Lord Krishna is the only celebration taking place in this temple. This extends, over a week at the end of which the Bhajan parties are given a feast.

**3.11** Bahiroba temple: This is a small temple of 6 x 6 feet dimensions stand ing on a plinth of 18 x 18 feet; The construction, including the terraced roof is all stone of irregular size. Our valuation looks after the two temples of Hanuman and Mahadeo also looks after this one. There are no celebrations.

**3.12** Mariai temple: This is a rectangular building of 40 x 25 feet dimensions, closed on three sides and with a terraced roof of timber and earth-work. The building stands on a plinth raised to 3 feet above the ground level. The wall masonry is of stone in mud. The general condition of the building is good. Our valuation of the building is Rs. 3,659. The temple belongs to the Mahar community and is used by them as a community sitting place. Some of their members also use it for sleeping at night.

**3.13** The Local Board Primary School-Old Building: The building is at present no longer in use and is now almost in ruins. It was only a single hail of dimensions 30 x 17 feet. The walls on three sides are now not standing and the roof also is not in its place. Only the plinth is in order. Our valuation of the standing structure was Rs. 532.

3.14 The Local Board Primary School-Present Building: This is a rectangular building of 37 x 22 feet and consists of a single hall. This was originally the public rest house built by the Local Board. But after the old school building became unusable, the rest-house was reconditioned and converted into the primary school building. It consists of a single hall of 37 x 22 feet with one door of  $6\frac{1}{2} \times 4$  feet and 9 windows of  $2\frac{1}{2} \times 3$ 

feet. The door and the windows are of good timber. In the centre of the hall are 7 wooden pillars of 6 x 6 inches and 8 feet in height. On them and on the walls rests the terraced roof of timber and earthwork. The timber used for the ceiling is good. The walls are of good stone and are  $2\frac{1}{2}$ 

feet in width. Our valuation of the building comes to Rs. 3,297.

**3.15** The condition of the building was not very satisfactory. The windows were not well fixed in the walls. The floor was not well made and the roof was leaky in many places. The accommodation also was inadequate. Therefore one school class was moved to the Hanuman temple and another to the Vithoba temple.

**3.16** The village teacher also acted as the postmaster. A cupboard and a box belonging to the post office was therefore kept in the school building.

**3.17** *Vithoba temple:* This was a rectangular building consisting of a single hail of 43 x 25 feet, closed on three sides. Though originally a temple, there was, at

the time of our survey, no deity in it and the building was being used for one of the classes of the primary school. The building was subsequently acquired by the Local Board and was reconditioned for the primary school. As the windows had to be fixed into the walls, and as the old walls and the roof was not in very good condition, the entire building was pulled down to the plinth level. It has since then been rebuilt partly using the old material. It now consists of two rooms and is being used for the primary school. Approximate valuation of the new building comes to Rs. 4,300. The building expenses were all met by the Local Board.

**3.18** *Masjid:* This is a rectangular building closed on three sides with 3 feet wide walls of big sized dressed stone in mud and a terraced roof of timber and earth-work. It consists of a single hall of  $30 \times 22$  feet dimensions. The building stands on a plinth raised to 5 feet above the ground level. The height from floor to ceiling is 20 feet. At one end is a platform 4 feet wide and raised to 5 feet above the floor. Our valuation of the building comes to Rs. 3,638.

**3.19** The building belongs to the Muslim community of the village. But there are, only 8 Muslim families in the

village and hence the upkeep and maintenance of the building is not well attended to. One person offers Namaj every morning and evening. He also sweeps and keeps the place clean.

**3.20** Mang Chawadi: This is a community place of the Mang community. The Mangs are a depressed class community and are one of the poorest in the village. As will appear in subsequent discussion almost the entire community lives in huts of straw and bamboo. The community therefore tried by collective effort to put up a community building but due to poverty of the people, the building could never be completed. The dimensions of the intended hall were 30 x 20 feet. The masonry is more or less complete with plinth raised to  $2\frac{1}{2}$  feet and walls on three sides raised to 8 feet height. The walls are in stone and are  $2\frac{1}{2}$  feet

wide. The community however could never put on the roof and hence the structure remained incomplete. Our valuation of the standing structure is Rs. 372.

**3.21** In addition to the public buildings described above which were actually covered by our survey, there are, of course, a few more. They are mostly temples and as they are situated away from the village site, we did not include

them in our investigation. We should, nevertheless, mention the temple of Kashivishweshwar. This is a big-sized temple comparable with the Mahadeo temple we have earlier described and is also built in the same style. Kashivishweshwar is the presiding deity of the village and until recently two-day celebrations in the month of Chaitra used to be held in the honour of the deity. There used to be on that occasion a well attended fair. But on account of certain factions in the village reportedly arising out of the management of the funds of the temple, the celebrations are not holding for the last few years. The temple is now totally neglected and as it is situated rather far away from the village site, there is not even an oil lamp burning at night.

**3.22** We should note incidentally that the total valuation of the ten public buildings covered by our survey comes to about Rs. 32,500.

#### 4. Non-residential Private Structures

**4.1** As mentioned earlier, among the 187 structures covered by our survey, there were 6 private structures being used for non-residential purposes. They were as under: A private temple, a grocer's shop, a workshop of a blacksmith, two cattle sheds and one shed for sheep and goat.

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**4.2** The private temple belongs to a Gosavi who stays in another house in the village. The temple measures  $17 \times 9$  feet, is closed and is not in any use. Our valuation of the building came to Rs. 608.

**4.3** The grocer's shop belongs to a Gujar. It Consists of three adjoining rooms of  $30 \times 25$ ,  $30 \times 15$  and  $30 \times 15$  feet dimensions. The first room comprises the shop while the latter two rooms serve as store rooms. At the back of these rooms is a narrow hall of  $60 \times 10$  feet which is partly used for private use. The owner has, however, another house in the village, where he lives. Our valuation of the building came to Rs. 10,981.

**4.4** There is yet another shop in the village belonging to another Gujar. The two shop-keepers are related and are actually brothers-in-law. The second shop, however, has no separate building and is accommodated in a part of the residential building. It, nevertheless, occupies about 500 square feet of living area. There are no other shops in the village.

**4.5** The workshop of the blacksmith is a tin shed of  $15 \times 12$  feet. The shed adjoins a small ordinary structure of the same dimensions which is partly used as a kitchen. The owner, however, lives in another house in the village. Near his

work shop and the room which he uses as a kitchen, the owner also owns a small private temple of  $10 \times 10$  feet and he had recently started constructing a two-room tenement with overall dimension of about  $12 \times 40$  feet which would connect the temple with the kitchen room. The total value of all structures as they stood was Rs. 1,510.

**4.6** There is yet another blacksmith in the village but he had no separate workshop. He worked in a part of the residential house and occupied about 120 square feet of it for his workshop. There were three carpenters in the village but all of them worked in open grounds under trees near their houses. There were three coblers in the village and all of them worked in the front verandahs of their houses. There were two barbers but they usually worked in the open. During rainy season they worked in the front verandahs of their customers. There were two washermen and they too worked in their houses. There was one earthen pot-maker and had his establishment in the open ground. There were 23 Mang families engaged in rope-making but they all worked in the open ground near their colony. Thus practically no artisans had any separate establishment as a work place.

**4.7** There were two cattle sheds. One of them was a shed of 25 x 12 feet and our valuation of it was merely Rs. 132. Another was a house in disuse with overall dimensions of about 50 x 75 feet but with no roof on it. The walls too were in a bad condition. Our valuation of the structure was only Rs. 375. In both cases the owners lived in separate houses in the village. The shed for sheep and goat was of bamboo and straw and measured only 10 x 10 feet. Our valuation was Rs. 110.

**4.8** As we shall describe in later sections, there were 102 residential buildings, other than huts, in the village. Families staying in 50 of these had no animals or in a few cases if they had one, they were kept in the open ground or under a tree. Families staying in 24 houses had cattle sheds on their farms. Families staying in two other houses had separate cattle sheds in the village. These were described above. In the remaining 26 cases the cattle stood in a part of the residential houses. In 9 of these cases, the cattle stood in the open courtyard of the houses without any shed while in 17 cases the cattle sheds were actually combined

with the residential houses. Few of those staying in huts had any cattle and in all such cases, the cattle stood in the open.

**4.9** To sum up, it might be pointed out that there were practically no structures which could be classified as wholly non-residential. The grocer's shop and the blacksmith's workshop, though in both cases the owners lived in separate houses in the village, were both used partly as kitchen or for other private use. One of the two cattle sheds was no more than a house in disuse and was without a roof.

#### 5. Unoccupied Structures

**5.1** There were 35 unoccupied structures one of which was yet under construction. The remaining 34 might be broadly classified into three condition classes as habitable, repairable and in ruins. In Table 2 we give a classification of the unoccupied structures into these classes showing for each class their area and value. For structures in the last two classes, the area has been divided and shown separately as "under roof" and "not under roof."

Condition	No. of structures	Area under roof sq. ft.	Area not under roof sq. ft.	Value Rs.
(1)	(2)	(3)	(4)	(5)
Habitable Repairable	9 6	5500 1725 420	- 1136	20461 7039 5727
Total	34	7735	20426	33227

Table 2. Distribution of the Unoccupied Structures according to condition

**5.2** The basis of the valuation given in the last column and the rates used in valuation are given in a subsequent section. Briefly it might be noted that the quantities of various structural items such as foundation, masonry, doors, roof, etc., were worked out in each case by actual measurement. These were then valued at building rates prevalent in the neighbourhood. It should be clearly understood that the values are not the market values of the structures as they stand, nor the building costs at the time they were built. They are the present costs of building a structure of similar specifications in quantities of various items as they actually appear to-day. Thus the valuation is at present the building cost; it takes into account the quantitative depreciation in various structural items, but takes no account of the depreciation in quality or condition.

**5.3** Of the 9 habitable structures, 5 were A class structures, one was a B class and two were C class structures and the

remaining one was a hut of straw and bamboo. Descriptive details of this classification are given in a subsequent section. Considering the 9 habitable structures together, their value will be seen to work at about Rs.  $3\frac{1}{2}$  per sq. foot

of area. On this basis the value of the 6 structures which were repairable would work out to be-about Rs. 10,000 while their present value was about Rs. 7.000. The difference of Rs. 8,000 indicates the extent of quantitative deterioration of these structures and might be considered approximately the cost at which they could be made tolerably habitable. This of course presumes that all that was standing was useful and that there would be no need to dismantle and rework any part of it. This appeared to us largely true and in most cases the repairs consisted of putting on a roof on the uncovered area. On the other hand the structures in the next class were in total ruins and practically beyond repairs. On the basis of Rs.

 $3\frac{1}{2}$  per sq. foot of area their value would

be about Us. 69,000 while their value in their present state was only Rs. 5,727 which meant that even less than 10 per cent of their original quantities were now standing on the ground.

**5.4** The unoccupied structures might be classified according to the whereabouts of their owners. Considering first the 9 habitable structures, in 5 eases their owners lived in other houses of their own in the same village. In 2 cases the owners were living in farm-houses of their own while in the two remaining cases the owners were not living in the village. As to the whereabouts, of the owners of the 6 repairable structures, in two cases they lived in other houses in the village; in two other cases they lived in farm-houses and in the remaining two eases they did not live in the village. Of the 19 structures in ruins, owners of 8 lived in other houses in the village, owners of 4 lived in farm-houses and of 7 did not live in the village. Barring a few exceptions, most of the unoccupied houses were in undivided ownership. It is not, therefore, on account of subdivisions that they were either not occupied or were left uncared for and allowed to become inhabitable.

### 6. Residential Houses

6.1 We shall now describe the resi-

dential houses. There were in all 136 residential structures. We have classified them into four broad structural classes as follows:-

*Class A*: This comprises three separate types originally distinguished by our investigator as under:-*(i)* Solid structure-wide footing and walls of large dressed stone in mud with cement pointing. Roof of cut timber of good quality and iron sheets in good condition. (ii) Sound structure-wide footings and walls of rubble in mud. Roof of fairly good timber and in good condition. (iii) Medium structure-walls at rubble in mud. Roof of ordinary wood but in good condition.

*Class B:* Old structure with rubble walls and roof in depleted but yet habitable condition.

*Class C:* Old structure with rubble walls in good condition but without the original roof, made habitable by means of only a temporary roof.

*Huts:* Made of bamboo and straw in the main and of little permanent structural value.

In Table 3 we give a classification of the residential structures according to these classes, showing for each class the number of families staying in them, the total area of the houses and their value. We shall first describe only the houses in the first three classes and later describe the huts.

classified by the type of their ground plan There were five easily distinguishable types of ground plan. In Table 4 we give a classification of the houses according

6.2 The residential houses might be to these types.

Structural class	Number of houses	Number of families	Area sq. ft.	Value Rs.
(1)	(2)	(3)	(4)	(5)
А	24	51	28,980	1,25,700
В	38	56	24,200	18,814
С	40	68	20,052	69,423
Huts	34	46	10,154	10,666
Total	136	216	83,386	2,84,103

Table 3. Classification of residential houses according to structural classes

Table 4. Classification of residential houses in classes A, B, and C according to their ground plan

	Number of Houses				
Type of Ground Plan	Class A	Class B	Class C	Total	
(1)	(2)	(3)	(4)	(5)	
Rectangular (solid)	7	17	19	43	
Rectangular (hollow)	6	2	2	10	
L-shaped	7	12	8	27	
U-shaped	1	0	2	3	
Rectangular compound with small separate structures within	2	4	6	12	
Other types	1	3	3	7	
	24	38	40	102	

tioned the valuations of the structures various items as they actually appear surveyed by us. As we have earlier to-day." In the following we give the explained, by valuation is meant "the detailed rates at which different items present costs of building a structure of were valued.

6.3 In earlier sections we have men-similar specifications in quantities of

Rs. 22/- per 100 eft.
Rs. 15/- per 100 cft.
Rs. 75/- per 100 cft.
Rs. 40/- per 100 cft.
Rs. 35/- per 100 cft.
Rs. 16/8 per 100 cft.
Rs. 13/8 per 100 cft.
Rs. 110/- per 100 sq. ft. of covered
area
Rs. 190/"-
Rs. 235/"-
Rs. 285/"-
Rs. 17/- per 100 cft.
Rs. 27/- per 100 cft,
Rs. 60/- per 100 sq. ft.
Rs. 40/- per 100 sq. ft.

These were the current rates for new work. The valuation at these rates, therefore, does not give either the building costs when the structures were built or their present values. It gives the value of building new structures of similar specifications. As we have earlier noted it takes into account the quantitative depreciation in various structural items, but takes no account of the depreciation in quality or condition.

**6.4** In Table 5 we give a classification of the residential houses according to their valuation on the above basis.

Valuation Da	Number of Houses				
valuation Ks.		Class A	Class B	Class C	Tota
(1)		(2)	(3)	(4)	(5)
101 to 500		-	1	8	9
501 to 1000		1	8	6	15
1001 to 2000		4	12	15	31
2001 to 3000		3	9	2	14
3001 to 4000		3	6	4	13
4001 to 5000		3	1	2	6
5001 to 10000		8	1	3	12
Above 10000		2	-	-	2
	Total	24	38	40	102

Table 5. Classification of Residential Houses in Classes A, B, and C According to their Valuation

 Table 6. Classification of Residential Houses in Classes A, B and C According to number of Ownership Partitions

Number of partitions	Number of Houses				
Number of partitions	Class A	Class B	Class C	Total	
(1)	(2)	(3)	(4)	(5)	
1	12	26	19	57	
2	4	8	10	22	
3	5	1	7	13	
4	1	2	3	6	
5	1	-	1	2	
6	-	1	-	1	
7	1	-	-	1	
Total number of houses	24	38	40	102	
Total number of partitions	51	59	77	187	

**6.5** A number of these houses were partitioned between two or more joint owners. In Table 6 we give their classification according to the number of ownership divisions into which they were partitioned.

Thus it will be observed that the 102 residential houses were partitioned into 187 ownership divisions.

**6.6** Not all the owners however lived in their respective houses. In Table 7 we give a classification of the houses

according to the owner occupants.

Thus while the 102 houses were divided vacant. In Table 8 we give details of these into a total of 187 ownership divisions, cases. It will be seen that 25 out of a total only 144 owner-occupants lived in their of 187 tenements were actually vacant. 7 respective houses. The balance of 43 out of these, all belonging to class C, were ownership divisions were not thus in fact not in a habitable condition.

owner-occupied. In such cases, either the tenements were rented out or were left.

Table 7. Classification of the Residential Houses in Classes A, B and C According to Number of Owner **Occupants** 

Number of Owner Occupants	Number of Houses				
Number of Owner Occupants	Class A	Class B	Class C	Total	
(1)	(2)	(3)	(4)	(5)	
0	3	4	2	9	
1	10	25	25	60	
2	6	6	8	20	
3	4	3	4	11	
4	-	-	-	-	
5	-	-	1	1	
6	1	-	-	1	
Total number of houses	24	38	40	102	
Total number of owner occupants	40	46	58	144	

6.7 As pointed out above, 18 tenements occupants shared their tenements with not occupied by their respective owners tenants. Thus in all, there were 26 tenants, 21 families. In addition, 5 owner- different classes of houses.

were rented out. In them lived a total of In Table S we give these details for

	Class A	Class B	Class C	Total
(1)	(2)	(3)	(4)	(5)
Owner living elsewhere in the village-				
tenement vacant	3	4	8	15
Owner not in the village- tenement				
vacant	2	1	7	10
Rented out	6	8	4	18
Total	11	13	19	43

#### Table 8. Disposal of Tenements not Occupied by Owners

Table 9. Details of Tenant-Occupants in Residential Houses of Classes A, B and C

	Number of tenant-occupants				
-	Class A	Class B	Class C	Total	
(1)	(2)	(3)	(4)	(5)	
Staying in the absence of the owner	8	9	4	21	
Staying alongside with the owner	3	1	1	5	
Total	11	10	5	26	

**6.8** Thus there lived in all a total of 170 families in the 102 residential houses. Of these 144 were owner-occupants while 26 were tenants. In Table 10, we give a distribution of the houses according to the number of families staying in them.

**6.9** In Table 11 we give a classification of the resident families by the number of

rooms in their use. It should be noted that in the category of rooms we have also included *varandhas* closed only on three or sometimes even on two sides. It will be seen that one-third of the families were living in only one-room tenements and 75 per cent were living in either one-room or two-room tenements.

Number of Densilies	Number of Houses			
Number of Families	Class A	Class B	Class C	Total
(1)	(2)	(3)	(4)	(5)
1	1	26	25	61
2	7	8	9	24
3	4	3	5	12
4	1	-	-	1
5	1	1	1	3
6	1	-	-	1
Total number of houses	24	38	40	102
Total number of families	51	56	63	170

# Table 10. Classification of the Residential Houses in Classes A, B and C According to the Number of Families Living in Them

# Table 11. Classification of the families resident in houses of classes A, B and C according to the number of rooms in use

	Number of families resident in houses of				
Number of Rooms	Class A	Class B	Class C	Total	
(1)	(2)	(3)	(4)	(5)	
1	10	15	33	58	
2	25	27	19	71	
3	7	6	10	23	
4	6	6	1	13	
5	2	2	-	4	
6	1	-	-	1	
Total .	51	56	63	170	

**6.10** In Table 12 we give a classifica- in their use per person of their members. tion of the resident families by living area

Der nersen living area ag, ft	Number of Persons Resident in Houses of				
Per person nying area sq. it.	Class A	Class B	Class C	Total	
(1)	(2)	(3)	(4)	(5)	
Upto 25	1	3	9	13	
26 to 50	8	15	22	45	
51 to 75	15	7	13	35	
76 to 100	15	7	11	33	
101 to 150	5	16	5	26	
151 to 200	5	3	3	11	
More than 200	2	5	-	7	
Total	51	56	63	170	

Table 12. Classification of the Families Resident in Residential Houses of Classes A, B and C According to the Living Area Per Person

families in different classes of houses castes is clearly apparent in the categories of houses in which they reside.

6.12 Usually when two or more families lived in the same house they belonged to the same caste. There were a few exceptions. Thus there were cases of a houses. There were cases of a Maratha of those who were paying rents.

**6.11** A classification by castes of and a Mussalman, a Maratha and a Mali and a Nhavi and a Gosavi staying together might be of interest. This is shown in in Class B houses. There were two more Table 13. The social gradation of the cases of a Maratha and a Mussalman and a ease of Kumbhar and a Koli living together in class C houses. Thus it will be observed that it was quite common for a Mussalman to stay with a Maratha in the same house.

**6.13** Of the 26 families living in rented Maratha and a Mussalman, a Gujar and a houses only 11 families were paying any Brahmin, a Pant and a Sonar and a Pant rent. The remaining 15 were staying free and a Mali living together in Class A of rent. In Table 14 we give a few details
Casta	Number of Families Living in Houses of				
Caste	Class A	Class B	Class C	Total	
(1)	(2)	(3)	(4)	(5)	
Marathi	36	26	30	92	
Brahmin	1	-	-	1	
Gujar	2	-	-	2	
Sonar	1	-	-	1	
Pant	2	-	-	2	
Mali	1	6	1	8	
Dhor	4	7		11	
Mussalman	3	3	5	11	
Nhavi	-	2	-	2	
Vani	-	1	-	1	
Vadar	-	1	-	1	
Koli	-	3	1	4	
Lohar	-	1	1	2	
Gosavi	-	2	2	4	
Chambhar	1	-	4	5	
Mahar	-	4	10	14	
Kumbhar	-	-	1	1	
Dhangar	-	-	3	3	
Ramoshi	-	-	3	3	
Mang	-	-	2	2	
	51	56	63	170	

Table 13. Classification of Families by Caste Living in Different Classes of Houses

### Table 14.

Class of houses	No. of families	Total annual rent Rs.	Area occupied sq. ft.	Annual rent per 100 sq. foot Rs.	Valuation of the rented part Rs.	Annual rent per Rs. 100 of valuation Rs.
(1)	(2)	(3)	(4)	(5)	(6)	(7)
А	6	144	2925	4.92	12,598	1.14
В	3	60	1060	5.66	3,532	1.70
С	2	48	910	5.27	4,633	1.04
Total	11	252	4,895	5.15	20,763	1.21

It will thus appear that we might take the annual rental value of the houses to be about Rs. 5 per 100 sq. ft. of room area. This works out at about 1.25 per cent of the valuation of the houses.

**6.14** We shall now describe the last category of residential structures, namely, huts. As earlier mentioned, there were in all 34 huts and in them stayed 46 families. These huts varied in their structural design and value. Their average value per square foot of area was, however, no more than Re. 1/-. In the following, we give a brief description of a well built-hut.

**6.15** On all four sides of the hut is raised to 3 or 4 feet a stone and mud wall of about  $2\frac{1}{2}$  feet width. The stones are usually of irregular shape and size and sometimes are kept one on top of another without any mud binding. It is only afterwards that the rubble wall is plastered with mud and dung. In the centre are put three poles on which rests a beam. This beam and the surrounding walls support the roof made of straw. The straw roof is usually of 9 inches thick and is tied by coir to the perlins. There is usually no

proper door. Only an entrance of  $2\frac{1}{2}$  to 3

feet width serves the purpose. When all family members go out or at night, this entrance is covered by a shutter of straw and bamboo. The kitchen hearth is placed in the centre. At night a bare oil lamp burns on the kitchen hearth. A wooden box with a locker secures the better clothing and other valuables. During monsoon all members sleep inside the hut. Otherwise, the men usually sleep outside either on country cots or on the ground. Firewood is stored outside the hut.

**6.16** In Table 15 we give a classification of the huts according to their area per inmate and show for each class, the number of families staying in them, their total area and their total cost. Thus out of the 46 families living in huts, 34 families lived in huts with area less than 50 sq. ft. per person.

**6.17** Among the 46 families, 32 were Mang, 10 were Ramoshi, 2 Vadar, one Maratha and one Mahar. It is thus clear that the Mangs are the one community living in the poorest of housing.

Area per inmate sq. f	t.	No. of huts	No. of families	Total area sq. ft.	Total value Rs.
(1)		(2)	(3)	(4)	(5)
11 to 20		3	8	350	335
21 to 30		5	8	1125	1110
31 to 40		10	13	2844	1321
41 to 50		7	10	2330	2717
51 to 75		5	7	1640	1548
76 to 100		2	3	1100	1044
Above 100		2	2	765	701
	Total	34	46	10,154	10,666

Table 15. Classification of Huts According to the Area Per Inmate

# 7. Summary

**7.1** We might now bring together the above details in a summary table. In Table 16 we give the total real estate of the village in residential and other buildings.

 
 Table 16. Summary of Real Estate in Residential and Other Buildings

	Area under roof	Valuation Rs.
	in sq. ft.	10.
(1)	(2)	(3)
Public buildings	5,240	32,459
Non-residential structures	2,483	19,116
Unoccupied structures	7,785	83,227
Residential houses	88,886	284,103
Total	. 98,844	368,905

Thus there were nearly 100,000 sq. ft. accommodation with the higher classes. of area under roof with a total value Some expenditure on reconditioning or amounting to nearly Rs. 375,000, About replacing the roof would also make a 8 per cent of this area was unoccupied. number of habitable places truly habit-Further, as we have earlier noted, 25 out able. These are necessarily short-term

of a total of 187 tenements in the residential houses were vacant. In other words about 13 per cent of the available residential accommodation was not being utilised. However, more than the non-use of the available living space, what strikes most the eye of a city visitor to this village, as to many other villages, is the extremely depleted condition of most of the houses as also the heaps of ruin that lie all around the place. If the available space under the roof could be made available at a small charge, it might be possible to give relief to a number of poorer families at present living hi huts and improvised houses. Most of those, living in huts are, however, socially disabled and the caste system would probably prevent them from sharing accommodation with the higher classes. Some expenditure on reconditioning or replacing the roof would also make a number of habitable places truly habitmeasures but will, nevertheless give opportunity for thinking out the problem and assisting in evolving co-operative efforts in this field.

7.2 It was noted in the beginning that the survey included 6 new houses which were not existing at the time of the 1941 census. 3 of these were no more than temporary huts with a total area of 350 sq. ft. and valued at Rs. 320. The remaining three were newly built houses with a total area of 1,246 sq. ft. and valued at Rs. 3,828. Leaving aside the public buildings, the private buildings of all types add to a total of about Rs. 350,000. The value of new buildings since 1941 to 1947-48, that is within a period of about 7 years is nearly Its. 4,000 and is only slightly above 1 per cent. New construction during the ten-year period between the two censuses of 1941 to 1951 is therefore unlikely to be more than 1.5 per cent of the existing estate. Therefore, even if we assume a life of a hundred or even two hundred years to the kind of rural houses that we have described above, the rate of new construction is obviously too low to meet the annual depreciation. It appears that here is a concrete illustration of a population living by capital consumption.

### Acknowledgment

As noted in the introductory section, the principal interest of this study was methodological. Prom that point of view, a certain fact of our investigation deserves mention and notice. The entire investigation, including the actual measurements, drawings and quantity evaluations was done by a student of civil engineering, Mr. G.V. Joshi during his summer vacation. We sincerely thank Mr. Joshi for his painstaking and careful work and hope his efforts might direct the attention of the engineering students to problems of rural housing.

# **RATIONALE OF REGIONAL VARIATION**

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Three country-wide investigations in field agencies in different regions, from recent years, namely, the Agricultural bottom to near top, work, in large part in Labour Enquiry, the National Sample more or less isolation, this factor might Survey and the All-India Rural Credit have unsuspectedly large influence. Survey have brought to notice a surprising amount of regional variation between procedure, is the concepts used and the different parts of the country. For instance, the All-India Rural Credit Survey was conducted in a sample of 75 districts selected from all over the country. The Survey revealed large differences between the conditions existing in these districts in respect of a number of economic characteristics and quantities covered by the survey. Similar variation, though probably to a smaller extent, was found to exist within smaller regions. Thus the Rural Credit Survey showed differences between different villages selected for investigation within each selected district.

The questions might be posed in relation to such observed, differences. Firstly, are these differences real 7 Secondly, if they are, can they be explained 7 The first question has reference to investigational procedures employed and suggests that at least part of the observed variation is incidental to these procedures and, in that sense, not real. For instance, investigators are known to possess personal biases. In a country-wide investigation, where the questionnaires are used in their regional

Another aspect of the investigational manner in which questions are framed. Unless the concepts are fully defined making an exhaustive reference to all possible situations to be expected, they might mean different things in different conditions. The three investigations mentioned above, were all in a sense the first of their kinds. An exhaustive knowledge of widely varying conditions in different parts of the country could not, therefore, be expected from anycentral agency of direction. Hence, the possibility cannot be ruled out that certain concepts employed in these investigations in fact meant different things in different economic circumstances. The same is true of the form in which the questions are framed. It has been experienced that a certain sequence of questions is appropriate only under certain circumstances and that the same sequence fails to elicit similar responses under different circumstances. In certain condition, the questions are found inadequately detailed; in other conditions, the amount of detail in them is found to be only confusing. Sometimes when the

translations, the difference in the language is also likely to affect the content of the concepts and the form of the questions. This is likely to be true, though may not be found out, even when for the sake of an apparent uniformity, a uniform questionnaire, in English, is used; for after all, the investigator is bound to interview only in the regional language. Therefore the possibility of a certain amount of the observed variation being incidental to such details of the investigational procedure, cannot be ruled out. Incidentally, we might also mention, that while the above mentioned circumstances might cause, what might be called, investigation-technical variation, they might, on account of the formal and rigid uniformity imposed and also on account of the exigencies of subsequent mechanical tabulation of the data. also fail to bring out the regional difference that indeed exist. Here, we do not propose to examine these aspects of the investigational procedures employed, though undoubtedly their study would be important. It would be analogous to the occasional checking up of the instruments and apparatus used in a laboratory, which every laboratory worker must do.

We shall presume, therefore, that the observed differences are real, in the sense above described. Then the second question to be posed is whether the differences can be explained. Before attempting to answer this question, it might be useful to be explicit as to what is implied by an explanation in the present context. Variation is observed, between different regions, in respect of a large number of factors. Frequently, such variation in the several factors is only mutually concomitant. Hence, it is only by an arbitrary convention that some of them may be called the causes and the other, the effects. Such conventions are of course analytically convenient and do not always imply the same degree of arbitrariness. Usually they do not present many difficulties or much arbitrariness, upto a point; beyond that however, the element of arbitrariness becomes so large, that it is sometimes desirable not to make use of the cause-effect terminology.

In the present context, such a convention will enable us to list and order a number of factors which might cause variation in widely different regions. Whatever factors we might list in this way as initial or basic causes, must of course show large variation between different regions; but variation in them will not be deemed to require an explanation, at any rate in economic terms. Variation in them must be taken for granted and be supposed to cause variation in the other factors. Thus defined, the most initial or basic factor causing variation in different regions seems to be the differences in their natural environment and physical resources. Such differences may safely be placed outside the scope of economic explanation and hence might be supposed to cause variation in other factors.

Another similar factor is the social and political background of different regions. Tribal and backward classes form a substantial portion of the Indian population and in certain regions they live in larger concentrations. The social structure and background of these regions is, therefore, likely to be materially different from that of the rest. There are also a set of differences in social background arising out of the different land tenures historically prevailing in different parts of the country. The differences in the political background of different regions mainly flow from the existence, until recently, of a large number of Princely States. The political background in these states was very different from that in what was then the British India. Also between themselves, these states differed greatly in their political development. These differences, being age-old, naturally persist even now, in spite of the greater uniformity in government and administration achieved in recent years.

A third factor, which might be mentioned as causal, is the differences in the stage of economic development in different regions. These differences can, at least in part, be explained as arising out of the first two factors mentioned above. namely, differences in natural environment and physical sources and in the political social and background. However, its explanation in these terms would take us behind the back of the variations in the data available from current or recent investigations. It is convenient, therefore, to regard the present stage of economic development as a starting point and hence a causal factor explaining the variations in other factors.

It is in terms of these three factors that it seems an explanation has to be found of the large amount of variation between different regions in respect of a number of economic characteristics and quantities. We might list a few more factors but in the causal chain they would probably occupy a lower position. In the remaining factors, it will be difficult to postulate a one way cause-effect relationship. In their case, we should be content to study the concomittant variation in them and examine whether the concomittance appears harmonious, that is to say plausible on the basis of present knowledge. If not, the apparently incongruent or implausible concomittant variation in them will have to be regarded with doubt or else the current notions regarding the mutual relationships between these factors will have to be revised.

The initial factors mentioned above will however be useful only to explain the variation in widely different regions. Variation within smaller regions will probably need other explanation. We might take for instance, the kind of differences between villages within a district as are brought out by the Rural Credit Survey. Of course, even within a district, large differences in natural environment and physical resources may exist. In a number of districts. such differences are known to exist and sometimes they are as large and as distinct as might be found in widely distant parts of the country. Such differences might explain a part of the variation between villages within a district. There appear, however, other factors also causing variation between villages.

An important factor causing differences between villages even within a relatively homogeneous region, is the difference in the sizes of different villages. These differences are usually associated with differences in physical features such as nature of the terrain and communications. But with or without them, the mere large size of a village imparts to it certain exclusive features. A ferences between plots allotted larger village, therefore, usually differs different varieties become large which in

from a smaller village, in its economic structure. In fact, a larger village is often found to differ greatly even from its neighbouring smaller villages whose economy might depend on that of the nucleus large village. A larger village also often enjoys a greater advantage in political and administrative contracts; and they are important when a large official programme of development is in operation. For these several reasons, the size of the village becomes an important factor causing variation between villages of different sizes.

There is yet another reason which causes variation between villages within relatively homogeneous region. Its nature is somewhat technical and may best be illustrated by a common problem in agricultural field experimentation. Let us suppose, that an agronomist desires to conduct a field experiment to compare say 10 varieties of a certain crop. He will, therefore, need an experimental block of land with ten plots to sow the ten varieties. The problem that the agronomist then faces is to decide upon the size of the plot he should use. He aims at keeping his plots as small as possible; because with larger plots, the entire block of experimental land becomes large and incorporates within it larger heterogeneous elements. Consequently, the difto

turn increase the experimental error. He, therefore, aims at the smallest possible plot size consistent with the requirements of agricultural technique. The smaller plots are naturally accommodated in a smaller block of experimental land which may contain less heterogeneous elements within it. One might expect, therefore, that if the smallest possible plot size is chosen, the differences between plots allotted to different varieties would be the smallest. In fact this does not happen. With smaller plot size, the experimental block of land becomes smaller and more homogeneous; consequently the differences between plots also become smaller but only upto a point. If the plot size is further reduced, it is often found that even though this results in a smaller and hence more homogeneous block of experimental land, the differences between plots increase. This is an observable fact and can only be explained by supposing that when a block of land is divided into very small plots, the differences between neighbouring plots become of a compensating nature so that when they are combined into bigger plots, on account of the averaging out of the differences between them, the differences between larger plots so obtained, become less pronounced.

Returning to variation between villages within a district or within a small homogeneous region, it seems that some

such circumstances as described above might be operating. We have already made reference to the peculiar nature of the relationship that exists between the economy of a large village and those of a number of neighbouring smaller villages to which the larger village serves as a nucleus for many purposes. If this were so, it would follow that the differences between neighbouring villages might be indeed large. Let us consider a cluster of villages comprising, say, a nuclear large village and the neighbouring smaller villages dependent for certain purposes on the larger village. A weekly market, a grocer's shop, a higher school, a cooperative society, artisans such as a black smith. wholesale traders and moneylenders, these are the features of the larger village which also serve the needs of the neighbouring smaller villages. Besides, the larger village is usually a centre of communication, rail or road, post office and daily newspapers; it is a centre of administration because of the stationing of the village talati or patwari, an agricultural overseer or a group secretary of a number of primary societies; it also is a centre of social and political activity on account of annual festivals or fairs, the touring cinema and the bustle of local political or community leaders. It is for these several reasons that the economy of the larger village and those of the neighbouring smaller villages become mutually complementary.

For it is a two-way traffic; just as the smaller villages depend upon the grocer and the moneylender in the larger village, they in turn also depend upon their clientele in the smaller villages. It is also possible, though it is a matter for investigation, that in an undulating country such as is to be found in the Deccan, an open terrain on both sides of a river or of a smaller stream with consequently more fertile lands and more ample sub-soil or surface water resources are some of the conditions conducive to the growth of larger villages. In the surrounding hilly or upland country, the soil may be less fertile, water more scarce and communications more difficult. It could, therefore, give rise to only a number of smaller villages or habitations. If this were true, even the crop acreages in the larger village and in the neighbouring smaller villages, might be compensating to a certain extent. This might be true, for instance, in respect of the acreages under cereals and pulses, of garden and fodder crops and other commercial crops. With more intensive farming, the larger villages might often depend upon the neighbouring smaller villages for their supply of labour, for fodder supplies like stalks of cereal crops, open grazings and hay and also for supplies of firewood. It will thus be clear that the economy of the larger village and those of the neighbouring smaller villages are mutually complementary respects. in many

Consequently, even though there are large differences between the larger village and the neighbouring smaller villages, they compensate and cancel mutually. Therefore, if we group the villages in a district into a number of clusters around nuclear larger villages, it is possible that the differences between such clusters will appear smaller than the differences between single villages.

What is implied in the above description of a cluster of villages is that in some sense such a cluster comprises a better or a more complete organic whole than are the single component villages. It seems that with reference to a phenomenon under study, there would be an appropriate ultimate unit which, in the context of the phenomenon, evinces the properties of an organic whole. Therefore, in spite of the large differences between their component villages, the differences between such organic clusters would be much smaller; just as, even though the different limbs of an animal are very different, two whole animals look much alike.

In a discussion of the rationale of regional variation, we should, therefore, make a distinction between these two types of variation. One is the variation between distant parts of the country; the reason for it is that because of their

different natural environment and physical resources, different social and political background and different stages of their development, the distant parts of the country become different organic species. The other is the variation between villages within relatively even а homogeneous tract; this shows up because possibly by choosing the village as a unit, we come to study not an organic whole but its several parts.

Recognition of these large differences between different parts of the country is of course important. Their explanation has to be found ultimately in the differences in the initial factors mentioned above. Analysis of the prevailing conditions in a single region in terms of these factors might appear to be no more than a make-belief explanation. But when opportunity is presented for studying and comparing the conditions in a number of regions from all over the country, such an analysis would be meaningful. Such for instance are the data from the these country-wide investigations mentioned at the beginning. The study of regional variation is greatly facilitated when the investigation is concentrated in a few regions, as was done in the case of the Rural Credit Survey, than when it is scattered all over the country.

The differences that exist even within relatively homogeneous and compact regions are, as has been explained, in the nature of differences between component parts of a whole economy. They also are important or at least are well worth study. They may be studied from observed differences between villages selected from all over a district or from a relatively homogeneous region. But with such data, the differences can only be related vaguely to the size of the villages. For a proper understanding of their nature and particularly of their compensating character, it will be necessary to study a group of villages forming an organic cluster.

# NOTES ECONOMIC POLICY AND THEORY

# V.M. Dandekar

AN academician, like an artist, often suffers from self-doubt; whether his profession is useful or worthwhile. An Economist, or more correctly a student of Economics, is one of them. The selfdoubt from which he suffers becomes most pronounced when the social and economic structure of the society is in a condition of flux under pressure from new factors coming into operation. It is then that the so-called practical men appear to get along where the academician is merely left wondering and Instinct seems to get an upper hand over Logic. Such seem to be the present-day conditions in the Indian society. Some of the present policy-makers have had little systematic training in Economic Theory; and those who had, have often found it necessary to leave it far behind.

2. There is no denying that there is probably an unbridgeable gap between Economic Theory and Economic Policy. Even the most ardent theoretician discovers it, often to his dismay, as soon as he comes in contact with practical or day to day affairs. However, the statement that Theory is of little or no use in practice, is likely to be misunderstood. The misunderstanding arises from an insufficient appreciation, perhaps temporary, of what is expected of Theory. If this were appreciated, one would not wonder at the gap that exists between Theory and Practice. If Theory is to aim at something more than a successful practice, the gap seems inevitable.

3. The first and the most important reason why there is so much divergence between Economic Theory and Policy is that practical policy decisions necessarily involve a number of extra-economic. particularly sociological, political, psychological etc., considerations. This really means that the practical policy is not all Economic Policy or in other words that human society is not entirely governed by economic considerations. Therefore quite obviously such a policy, and for clarity let us not call it Economic Policy, will not directly follow from Economic Theory which by definition must be purely Economic. An Economist, as an Economist, may not therefore be supposed to possess an exclusive competence in the formation of such a policy. Collaboration with other scientific fields is necessary.

4. The second reason for the divergence between Economic Policy and

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Theory is that the theory is at present far from perfect. In its present development, the theory has been able to take into account only the simplest of the conditions such as the free market pricing process. Even here, for convenience of the theoretical development, the conditions are over simplified. This is not because the theoretician believes that such over-simplified conditions obtain in practice; but because it is a necessary stage in the development of theory. In its present form, the theory has not advanced sufficiently to take into account the more complicated realities, even purely economic realities such as the conditions of imperfect competition. There is no wonder therefore that the theory has often failed, in the sense that it has failed to explain adequately, an important, that is a frequently recurring situation. For instance, this is what has happened, as is generally believed, to the Theory of Imperfect Competition. But at worst, this means no more than that a particular analytical approach was not found fruitful.

5. Theory necessarily has to proceed by simplification of a practical situation because in the early stages of its, development, the analytical tools at its disposal are not competent enough to handle more complicated conditions. There is however another reason, and a more fundamental one, why Theory must aim at simplification. The basic purpose of Theory is not to offer an immediate and complete explanation of this or that particular situation. Its aim is to seek the largest measure of common ground in apparently widely varying situations and to try to explain as large a part of it as possible by means of the simplest of hypotheses. A theory has therefore to be simpler than the practical situations it seeks to generalise; because, if it is as complicated as the phenomenon under study, it will be no more than a description. Therefore, in its application to a specific situation a theory naturally falls short of a complete description; it is in the context of a large number of such situations that it aims at something more than a complete description.

6. There is a third reason why Economic Policy does not directly flow from Economic Theory. It is really an aspect of the same fact as is mentioned in the above; nevertheless, for clarity it might be mentioned as a distinct point. It concerns certain basic processes of science. A scientific process has two aspects: Analysis and Synthesis. In its initial development, Theory is largely analytical. It aims at simplification of a complicated situation by resolving it into several component factors and it proceeds by examining them and by following up their consequences severally. Synthesis involves wighing of these

several factors and combining them into an organic whole approximating a real situation. It is only in a very advanced stage of a science that one may hope to develop a theory of synthesis. Even then, it is highly improbable that it will ever cover the innumerable situations that one meets with in practical life. So long as this is so, synthesis remains an art and it is in this sense that application of theory is an art. Formation of policy concerning a practical situation therefore bears the same relation to theory as synthesis bears to analysis.

7. The term Art in the above has been used deliberately. When a theoretician, even when presenting a solution to a practical situation, pretends at objectivity or at eschewing value judgments or at not corporating in his solution extraeconomic phenomena, he will be found, on examination, to embody implicitly in his solution values or prejudices derived from his own individual or social experience. This may sometimes be done by a person who by no means is a theoretician, who in fact aims at formulating or affecting practical policy, because the apparent objectivity of his solution looks impressive. But by thus putting forward obviously untenable claims on behalf of Theory, he merely succeeds in pushing it into a vulnerable position. However, this is an individual failing, though of course it is not an

uncommon one. On the other hand, when a person sometimes makes an appearance of setting Theory aside, and instead of basing his solution to a practical situation on a detailed examination of the extraeconomic considerations, his solution is not likely to be any more objective than that of the psuedo-theoretician; for it is in the weighing of these several considerations and in combining them into a particular solution that a certain amount of subjective element becomes unavoidable. It is in this sense that synthesis is an art because it embodies implicitly a subjective element, values or prejudices derived from one's own individual or social experience. The choice between the one or the other form of presenting his solution that a policy-maker may adopt, depends upon what he thinks is likely to be more impressive or effective; that is a consideration which is inseparable from his role as a practical politician.

8. The fourth reason why Policy does not or need not follow from Theory arises out of this essentially subjective character of a policy decision. Because it is so, a policy decision may be right or may be wrong, as judged by any criteria. On the other hand, Theory has to be, if not right, at least correct. It is obvious therefore that there is no necessary relation between Policy decision and Theory.

9. Every new policy is essentially a new experiment. It is because of the need to experiment, urgency to take risks, and liberty to make mistakes, that, as is often pointed out, practical policy decisions run ahead of Theory. Under the circumstances, a theory aimed at a systematic explanation of economic functioning of human society, must seek explanation of the new policy as it must when new economic events take place or come to notice. In fact there is no reason to take the policy makers and their practical policy decisions outside the normal economic functioning of the society; they are as much a part of it as are, for instance wage earners, traders and moneylenders and are no more under obligation to know or obey economic laws and economic

theory than the others are. Theory nevertheless must endeavour to seek systematic explanation of their behaviour if they have deviated from known or established economic laws and to the extent that an explanation can be found in economic terms must re-formulate its earlier propositions. That is the process by which the earlier propositions break down and new ones emerge. But there is no reason to be surprised if during this search for explanation, it is sometimes discovered that the deviations of the policy-makers were not all founded on purely economic considerations. Existence of extra-economic factors such as sociological, political and psychological governing human behaviour and functioning of hum an society must be admitted and left to be studied by other social science disciplines.

# **RATIONALE OF THE AMBAR CHARKHA**

# V M Dandekar

scratch, as there does not exist any traditional small-scale industry for spinning. The All-India Khadi and Village Industries Board's Ambar Charkha the Village and Small-Scale Industries programme is expected to be completed Committee (briefly the Karve Commitby 1960-61 when a new small-scale tee), was appointed chiefly to examine industry on a village basis will have been the issues arising out of this policy established in the country, at a cost of Rs. 75 crores per annum in subsidy. The fairly fully the grounds on which it would capital cost of the programme, however, support such a decision. Briefly stated, will be small, only about half of the these grounds are as under: annual cost of the subsidy.

This process of developing upwards from the village base may be compared with the alternative of proceeding downwards from the existing centralised modern industry as recommended by the Textile Enquiry Committee. A modern spinning unit can be set up in every, important cotton growing centre, at no greater cost.

All-India Khadi and Village Industries

Ambar Charkha is a beginning from reserved to the village and small-scale industries and that the employment provided by these industries should progressively increase. A committee, called decision. The Committee has laid down

The basis of the above decision is not а general opposition to technical improvement such as is implied in the view, If held anywhere, that a less advanced technology is in it self the more desirable. Its main purpose is to rehabilitate, in their own occupations, persons possessing traditional productive equipment and skills; to protect those who are at present employed; and to offer The Ambar Charkha programme of the to the unemployed and the underemployed, additional or fuller employ-Board is founded on the policy decision, ment in their traditional occupations which is one of the cardinal principles of though their productive effort here will the Second Five Year Plan, that during be so meagre that it will have to be the Plan period, the bulk of the increased supported by direct and Indirect subsidies supplies of consumer goods should be to yield to them a minimum level of

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subsistence income. An advantage in such part relief employment within traditional occupations is that by its means existing capital equipment and trained personnel can be put to some use, howsoever uneconomic and be made to produce the needed supply of consumer goods.

Such a course is therefore to be recommended provided (1) the contribution of the productive effort in the traditional industry substantially lowers the cost of the relief and social security which would otherwise be necessary; and (2) recruitment into the relief programme of new persons who are net traditionally engaged in the industry or creation of new equipment which can provide no more than relief employment is avoided so that the fulfilment of the immediate objective may not hamper the future rational development of the industry.

## **Does it Reduce Burden of Relief?**

Let us now examine the Ambar Charkha programme in the light of these principles. To begin with, let us see to what extent the productive effort on the Ambar Charkha reduces the burden of relief. To do this we should work out the cost of production of yarn on Ambar Charkha and compare it with the cost of production of comparable mill yarn. On the basis of (i) a wage of 12 as a day to the spinner with a daily output of 8 hanks; (ii)) raw cotton at Rs 700 per candy for 20 counts, and Rs 600 per candy for 16 counts; (iii) a margin of about  $12 \frac{1}{2}$  per cent for wastage and (iv) handling charges, at  $6 \frac{1}{4}$  per cent of the costs, the Khadi Board has worked out the cost per lb of Ambar yarn of 16's, 18's, and 20's. (Report of the Ambar Charkha Enquiry

Committee: pp. 63). This is shown in the table below.

The Khadi Board proposes that this entire difference be met by direct subsidy, Thus, of the Rs 1-8-0 which is the spinner will earn on a lb. of 16's yarn Rs 1-0-3, which is more than two-thirds, will be met by a direct subsidy; of Rs 1-11-0 which he will earn on a lb. of 18's yarn, Rs 1-4-1 which is three-fourths, will be met by a direct subsidy; and of the - Rs 1-14-0 which he will earn on a lb. of 20's yarn Rs 1-6-3 which again is nearly three-fourths, will be met by, a direct subsidy. The contribution of the productive effort on Ambar Charkha is therefore between one-fourth and one-third of the total relief to be provided.

The Khadi Board expects that this difference will be somewhat reduced in the rural area since, the transport and other charges on the mill yarn will have to be added to the price of the mill yarn. Taking the instance of 18's yarn, the Board expects that the, difference of Rs 1-4-1 on this yarn, will be reduced to Rs 1-1-0 on this account. It Is doubtful whether the differential transport costs of the mill yarn will be as high as 3 as. per lb. But even if this is granted, out of the Rs 1-11-0 which the spinner will earn on a lb. of this yarn, Rs 1-1-0 that is nearly two-thirds will have to be met by direct subsidy.

# **Only by One-fourth**

On the other hand, In the above calculation of the production costs, no allowance is made for overhead costs. In reply to the questionnaire from the Ambar Charkha Enquiry Committee, the Khadi Board stated that "the overhead charges on the present traditional khadi are computed at 18  $\frac{3}{4}$  per cent; these are inclusive of establishment, transport,

	Cost of Amber Yarn		
	16's	18's	20's
Raw cotton	0-12-3	0-14-2	0-14-2
Wastage	0-1-7	0-1-9	0-1-9
Spinning wages	1-8-0	1-11-0	1-14-0
Handling charges	0-2-5	0-2-8	0-2-10
Cost per lb. of Ambar yarn	2-8-3	2-13-7	3-0-0
Price of comparable mill yarn	1-8-0	1-9-6	1-10-6
Difference in cost	1-0-3	1-4-1	1-6-3

insurance, etc. In the Ambar Charkha scheme, the Board expects a progressive reduction in the overhead costs from the present  $18\frac{3}{4}$  per cent to  $12\frac{1}{2}$  per cent. By

what stages this reduction will be effected and by how much are points that cannot now be indicated." Further in explanation of the handling charges, the Board stated that it "contemplates a thorough revision of its earlier Ambar Charkha Programme and directly undertaking the manufacture of cloth from yarn produced on the Ambar Charkha. The question of handling charges or its appropriate percentage to total costs may not, therefore, arise."

Taking the most favourable view of these expectations of the Board, we may suppose that the total overhead charges will be  $12\frac{1}{2}$  per cent including handling charges if any. In the above computation of the production costs of Ambar Charkha yarn, only handling charger at  $6\frac{1}{4}$  per cent have been allowed. The cost of production will have therefore to be raised by at least another  $6\frac{1}{4}$  per cent or

by anything between 2 to 3 annas per lb. As a result it will appear that the difference between the costs of the Ambar and mill yarns will be at least three-fourths of the wages payable to the spinner on Ambar Charkha. Let us therefore suppose that the spinner, with a daily production of 8 hanks, will earn 12 as. as wages of which nearly, 9 as will have to be met by a direct subsidy.

### **Cost Under-estimated**

The Khadi Board's view, which also was the basis of the above computations

of production costs, that a spinner working on the Ambar Charkha can produce, on an average, 8 hanks of 20 counts per day of 8 hours, from carding of cotton to spinning, has not been accepted by the Ambar Charkha Enquiry Committee. The majority view of the Committee, after considering all available data including the data from the field tests conducted by the Khadi Board, was that the Ambar Charkha can give a daily production of 6 hanks on the average; the minority view placed this figure lower still.

What happens if this view turns out to be correct and the average production does not come to 8 banks a day? Either the spinners will earn less than 12 as a day or else, a higher proportion of their wages will have to be met by direct subsidy. Thus supposing that the spinner is able to produce on an average only 6 banks instead of 8 banks, he will be able to earn only 9 as a day if the cost of yarn is not to rise further. On the other hand, if it is decided that, in any case, an average spinner must earn 12 as. a day, the cost of yarn will increase by an addition of one-third of the spinning wages shown in the above computations. Thus taking the average case of 18's yarn, the spinning wages per lb. will be Es 2-4-0 Instead of Rs. 1-11-0. The difference in the cost of the Ambar and mill yarn of this count,

will be Rs. 1-13-1 which more than 80 per cent of the wages payable to the spinners.

Thus the productive: effort on the Ambar Charkha cannot be expected to contribute more than one-fourth of the total relief. Whether this may be regarded as substantial is a matter of opinion.

### **Basic Condition Violated**

The Ambar Charkha programme does not also satisfy the second requirement laid down by the Karve Committee, namely, that the programme should not involve the recruitment of new persons who are not traditionally engaged in the industry or the creation of new equipment which can provide no more than relief employment. For, as it happens, there is not presently in existence in the country, any large traditional handspinning industry with recognisable capital and labour structure, either unemployed or underemployed which has to be rehabilitated. The findings of the Pilot Survey of the handspinning industry at Tirupur conducted by the Khadi Board, as well as the experience of the organizers of the industry in all the 512 khadi production centres in the country show

> "(i) over 90 per cent of the spinners are women from the lower middle class families whose social status prevents them from going out in

search of any other alternative occupation as a means to supplement their family's meagre Income"; and that

"(ii) retired, superannuated Government and other service personnel constitute a substantial portion of the total number of male spinners." - All-India Khadi and Village Industries Board: Common Production Programme for Cotton Textile Industry-page 13.

It is obvious therefore, that the existing hand-spinning industry is not traditional but is entirely artificially created. Also, the classes of persons which are attracted to this industry, are certainly not those whose claims on social relief are most urgent.

### **No Long Term Rational Programme**

Is it then possible to regard it not as a short-term relief operation but as loneterm rational programme of development of the textile industry in this country?

The Karve Committee has laid down the following considerations in this connection:,

In the long-term development of an industry, on a rational basis, a decentralised economic structure consistent

with а progressive development at a fairly rapid rate should be accepted as a socially desirable goal. The bias towards decentralisation would mean that in the future programme of technical improvement, the techniques adopted are appropriate to the decentralized pattern and further that continuous effort is made to adjust existing improved techniques for particular production activities which are centralized in modern economies to a decentralized mode of operation or to invent or to discover decentralized substitutes for them.

Thus it seems that there are two distinct routes to effect the deliberate transition from the traditional small-scale industry to an improved modern but decentralized industry. One is by discovering or inventing decentralized substitutes for the existing centralized techniques. The other is by continuous effort to adjust the existing centralized techniques to a decentralized mode of operation. In the first, the progress will be from the village base upwards around small towns and existing small centres, of urban life. In the second, the progress will be from the large industrial centres downwards by

economic spreading small industrial units among ate should the small towns located all over the rable goal. country.

#### **Base for Future Development?**

In the case of hand-spinning, as there does not exist any traditional small-scale industry with which to make a start, a logical procedure is to begin by setting up a spinning industry in the small-scale and village industries sector so that its future development may proceed on a rational basis from the village upwards. The All-India Khadi and Village Industries Board proposes to do this by manufacturing and installing 25 lakh Ambar Charkhas which are estimated to produce about 400 million lbs of yarn annually. This will involve a capital expenditure of Rs 32.5 crores calculated at Rs. 130 per Charkha and will provide full time employment to about 36 lakh spinners. These calculations are based on the Board's estimate that a man working on the Ambar Charkha can produce, on an average, 8 hanks of 20 counts per day of 8 hours. As mentioned earlier the Ambar Charkha Enquiry Committee was of the opinion that the production might be much lower say only 6 hanks. In that case, the proposed 25 lakh Ambar Charkhas may not be able to produce the expected 400 million lbs of yarn but much less, say only 300 million lbs.

There is also another reason why the actual production in the Ambar Charkha programme may fall much below the expectations. Ambar Charkhas will be widely distributed and the production will be highly decentralised; that in fact is its principal social goal. It is unlikely therefore that the Charkhas will be fully employed over the whole year. Therefore in order to supply the estimated requirements of 400 million lbs of yarn, there may be necessary a larger number, say 30 lakhs of Ambar Charkhas. The capital expenditure may in that case amount to about Rs 40 crores. Of course this will be compensated by the fact that the programme will offer increased employment, say to 44 lakh spinners instead of the estimated 36 lakh only.

### **Pre-condition for Productivity**

The programme is expected to be completed by 1960-61 when a new small-scale industry on a village basis will have been established in the country. Among other features of the traditional industry, it will have the import ant characteristic that employment in it will be of a part-relief nature. Thus on the basis of 12 annas a day, the 44 lakh spinners will earn a daily wage amounting to Rs 33 lakhs, of which more than three-fourth or say Rs 25 lakhs will be in the nature of relief payment to be provided in the form of a direct subsidy. Calculated for 300 days of the year, this will amount to Rs 75 crores per annum. In comparison with this, the capital cost of the programme appears indeed small amounting to only about half of the annual cost of the subsidy.

Once the hand-spinning industry is so established, its future development may proceed on a rational basis as laid down by the Karve Committee. As and when the existing capital and labour structure of the Industry is found to be fully employed and the demand for its product continues to rise beyond its full capacity, conditions will be regarded ripe for the introduction of superior methods of production. It is to be hoped that when such conditions arise, the principles laid down by the Karve Committee will be borne in mind and that no further expansion of the industry on the present lines will be attempted. At the same time, it will be incumbent to see that only such technical improvements are adopted as will not greatly disturb the locational and social set-up of the persons employed in the industry and also not cause any unemployment or under employment among them. For Instance, it is only when the per capita consumption of cloth rises to 25 per cent above its level in 1960-61, that such technical improvements in the Ambar Charkha will be permitted as will

enable a worker, working for 8 hours, to produce 10 hanks, rather than the present 8 hanks, of yarn.

### **Developing from Village Base**

It should be clearly understood that there is no prejudice against technical improvement as such and that there is no objection in principle to even the productive efficiency of the modern industry provided the same can be attained in a decentralised pattern of production. But if the productive efficiency of the modern industry is say 20 to 25 times that of the traditional industry, as it will be in the case of spinning industry, it should be aimed at and attained only when the per capita demand for the products of the traditional industry rises to 20 to 25 times its present level.

This process of developing up-wards from the village base may be compared with the alternative of proceeding downwards from the existing centralised modern Industry. It does not run against the principles laid down by the Karve Committee whenever there does not exist any traditional industry, as in the case of hand-spinning. The course was also recommended by the Textile Enquiry Committee. This Committee recommended that all additional yarn requirements should be met by setting up new spinning units of the modern industrial type. According to its recommendations, the additional requirements of 400 million lbs of yarn will require 2 million additional spindlage on the basis of production of 5  $\frac{1}{2}$  oz per spindleshift,

working two shifts a day and for 25 days in a month on average of 20's count. These may be provided by setting up, for example, 100 units of 20,000 spindles each. At a cost of Rs 40 lakhs each, these will involve a capital expenditure of Rs 40 crores which is not greatly in excess of what will be required for the Ambar Charkha programme. Such a proposal as this is also not opposed to the social goal of a decentralized industry. Thus with 100 units to set up, there can be a spinning unit in every important cotton growing centre.

### Decentralisation

There is also no reason why decentralisation may not be carried still further by setting up even smaller units. Progressing along these lines, the effort will be to adapt the modern machine spinning industry to a decentralized pattern and to set up all over the country small but efficient spinning units which will always be in a position to adopt or adapt future technical improvements leading to further increase in productive efficiency. A disadvantage of this course is that it will not offer employment on a scale comparable with that offered by the Ambar Charkha programme. But it should be under stood that as there exists no traditional industry in hand-spinning, such a procedure as outlined above will also not create any unemployment or under employment in any traditional industry. As for the large volume of relief employment which the Ambar Charkha programme promises to create, it is worthwhile examining the implications and advisability of such a course in view of the heavy burden of subsidy and relief that it will almost permanently throw on the economy.

# **NOTES AND NEWS**

# NATIONAL FOOD RESERVE - AN INSTRUMENT OF AGRICULTURAL POLICY

# V.M. Dandekar

The functions of a world food reserve, its scope and limitations, have been very fully set out in the FAO Commodity Policy Studies No. 10. Though there are many differences between the proposals for a world food reserve, which the FAO study examines, and the much simpler concept of a national food reserve, the need for which has now come to be generally accepted in this country, a reading of the FAO study naturally gives rise to thoughts on the functions of a national food reserve. These are briefly set out in the following:

In spite of better and more statistics, the present position regarding our internal supplies of foodgrains remains a mystery. But experience in recent years suggests that possibly we have turned the corner and have seen the end of a permanent and chronic deficit in foodgrains. Nevertheless. quite obviously. we continue to be on the margin and will have to face frequent shortages and occasional small surpluses. The situation is, therefore, ideal for the operation of a national food reserve.

Owing to the very low short-term elasticities of demand for foodgrains, even small fluctuations in their yields tend to be associated with large variations in their prices. Moreover, once wide fluctuations in prices become common, speculative stock movements tend to further exaggerate the instability of prices. Ever since the derationing and price decontrol of foodgrains, their prices fluctuated widely. It is not clear to what extent these fluctuations in prices were accounted by variations in annual yields and to what extent they were due to speculative stock movements, and further, to the extent that they were due to the variations in yields, what could be the approximate sizes of these physical surpluses or shortages. On an answer to these questions, depends the size of the national food reserve necessary to make it an effective instrument of agricultural policy.

The national food reserve will operate by absorbing in times of relative abundance and by releasing them in times of relative scarcity. It will thus attempt to even out the fluctuations in annual supplies and also to keep within limits the

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fluctuations in prices. The effectiveness of its operations will depend upon the size of its resources, both in terms of finance and physical storage capacity, in comparison with the resources of stockholders and market operators. It must be clearly borne in mind that these latter will do their utmost to counter the operations of the national reserve until its power is proved.

So long as the possibility of speculative stock movements exists which will attempt to counter the operations of the national reserve, particular care will have to be exercised when, in times of scarcity, the national reserve releases its supplies on the market. It may in fact turn out that the national food reserve may have to build its own net work of retail distributing agencies all over the country. The existence of such an agency will also facilitate frequent rotation of stocks. which may be found necessary both to prevent quality deterioration of stocks and also to moderate seasonal fluctuations in prices even in normal years.

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The national food reserve will primarily operate with a view to lessening price fluctuations and to that extent may have a certain destabilising influence on producers' incomes. In the absence of any such operating reserve, the producers are usually compensated in years of low production yields by higher prices for the produce and by low prices in years of high production yields, though the fluctuations in prices may often be more than proportionate. With the stabilising influence on prices owing to the operation of the national reserve, the producers may tend to have relatively large incomes in years of good yields and very low incomes in years of bad yields. Such destabilising influence of the operations of the national reserve can be countered only by an efficient agricultural credit system.

An adequate storage capacity, an efficient retail distributing agency and an effective agricultural credit system thus seem to be essential for a successful operation of a national food reserve. Rather than an isolated agency, the national food reserve, therefore, appears to be an integrated part of a comprehenagricultural development prosive gramme covering co-operative credit, warehousing and marketing. So conceived, it will undoubtedly prove to be an effective instrument of agricultural policy.

# STABILISATION OF FOODGRAINS PRICES

# V.M. Dandekar

To achieve the stabilisation of food prices which it considers to be the primary objective of food policy, the Foodgrains Enquiry Committee has proposed the creation of a Foodgrains Stabilisation Organisation to engage in buffer stock operations.

The main function of open market purchases at fixed prices will be firm and effective support to prices, but it is not so obvious that this will enable the FSO to build up adequate buffer stocks. Compulsory procurement raises other problems and would imply a failure of the FSO to achieve its objectives through open market operations. In relation to sales, releases of stocks by the FSO to wholesale traders may not help the situation, if the supplies thus released do not find their way into the retail market.

THE Foodgrains Enquiry Committee has laid down the stabilization of foodgrains prices as the primary objective of food policy. For this purpose, it recommends the setting up of what it calls a Foodgrains Stabilization Organization. This will be a large trading body, benevolent in character, whose main function will be to counteract the fluctuations in foodgrains prices by undertaking what are called buffer stock operations, namely, purchasing when and where prices tend to fall and selling when and where prices tend to rise. In normal circumstances, or in theory, the free trading system is supposed to operate in about the same manner buying and selling in the different circumstances noted above, It is, therefore, necessary to be clear about why the free trade can hot be trusted to perform this function for food the modus operandi of the buffer stock

In India today. The special feature of the food situation is that foodgrains are an essential commodity and that our present supplies of them are marginal and are likely, to remain so for a long time. Under such circumstances, it is in the nature of free trade, motivated by private profit, that speculation and cornering become important elements In its operation. Therefore, when prices tend to fall, private traders tend to refrain from making even the normal purchases they would otherwise make, thus hoping to depress prices still further. Similarly, when prices tend to rise, private traders refrain from making even the normal sales they would otherwise malts thus hoping to push up the prices still further.

The Committee describes as follows

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operations it proposes the Foodgrains Stabilization Organization should undertake.

(i) The prices at which the FSO will be prepared to buy should be economic prices and should be kept reasonably stable to give confidence to the producers;

(ii) It should generally try to complete its purchases within three months of the harvest;

(iii) It should sell that part of its stock which requires early turn over and also a part of its surplus stock either in the lean season of the same year in which it buys or in a subsequent year when there is a short crop;

(iv) In the main, It should sell in the open market at a price approximating the market price;

(v) it should have no responsibility for retail distribution though it may sell to State Governments for distribution through modified ration shops; however; it is the open market sales which will be the more important for counteracting fluctuations in prices.

It is clear from this that the fair price shops or the modified ration shops are not conceived as a part of the FSO and that,

therefore, these shops or the State Governments maintaining them are not to be regarded as agencies of the FSO for retail distribution. In fact, the FSO has to have no responsibility for retail distribution.

If the reasons for not trusting the job to the free trade are what they have been stated in the opening paragraph above, it may be asked what the chances are of the open market operations of the FSO being effective. The purpose of this article is to examine the modus operandi of the, proposed FSO from this standpoint.

Let us begin with the open marcation of the failure of the FSO. They have a two-fold purpose. One is to support prices when they tend to fall. The other is to build up buffer stocks so that they may become available for releasing on the market if and when prices tend to rise. The two purposes are apparently in harmony. Nevertheless it will be seen that in the details of the purchase operations, they may conflict. As mentioned above, the committee stipulates, and rightly so that the prices at which the FSO will be prepared to buy should be economic prices and should be kept reasonably stable to give confidence to the producers. But this has two implications. One is that having announced a purchase price, the FSO must accept all deliveries offered at that price so that the prices may be effectively supported at that level. The

other is that having announced a purchase price, the FSO must avoid revising it upwards at a subsequent date. The FSO may be tempted to attempt an upward, revision of an announced price if it has failed to make enough purchases at the price earlier announced. But once this is done and the practice is established of the FSO revising its purchase price frequently to enable it to purchase enough stocks from the open market, producers may tend to delay their deliveries to the FSO expecting the FSO to raise its purchase price still further. It will also enable traders to earn margins by purchasing in the open market when the FSO purchase price is lower and selling it subsequently to the FSO when, it has revised its price upwards. Hence, once the purchase price is announced, it seems imperative that the FSO should not revise it even though this may mean that it is unable to purchase adequate stocks in the open market. The main function of open market purchases or of the offer to purchase in the open market at an announced price will therefore be a firm and effective support to prices. It is not obvious that it will also enable the FSO to build up adequate buffer stocks.

With the condition that purchases shall be made only at a single announced price, i.e., without entering into competition with traders, it seems the FSO will face the danger of being outbidded by traders in the open market. One can only leave it to future experience to judge whether under these conditions the FSO will be able to purchase adequate stocks in the open market. The Committee is of the opinion that the FSO may be able to purchase adequate quantities of millets and also of wheat because of the easing of the wheat situation on account of the large imports which will be possible for some time to come. However, it feels that this may not be possible in the case of rice and hence recommends some form of compulsory procurement.

### **Compulsory Procurement**

The Committee also recommends, more generally, some form of compulsory procurement in a period of rising prices. However, the modus operandi in this respect does not appear to be clear. For instance, when do we recognise the existence or emergence of a situation requiring a scheme of compulsory procurement? Ordinarily, such a situation may arise under two rather different circumstances. It may do so first in a year of crop failure when a price rise may become apparent soon after harvest. It may do so, however, also in a year when crops are not so bad but when traders have been able to purchase a large part of the marketed produce and have decided to corner it. Under these conditions, the price rise will become apparent only after

most of the stocks have passed from the market operations. There is also an hands of the producers into the hands of traders.

Under both these circumstances, any form of compulsory procurement seems hardly feasible. The Committee too does not appear certain in its mind whether such a moment is the most opportune to initiate any scheme of compulsory procurement. For instance, it mentions that procurement gives a spurt to the price level which does not get fully corrected when the procured quantity is released. In fact, In a period of rising prices, it seems more inclined to recommend larger imports because, as it points out, from the point of view of the food administration import has a certain advantage over procurement. Too obvious of course!

It is also clear that compulsory procurement, whether as a normal measure in the case of rice for some time to come or as an emergency measure in the case of wheat and millets, is not a part of the functions of the FSO, True, the Committee mentions that the simplest method of compulsory procurement will be to cordon off certain areas and make the FSO the sole buyer in these areas for export purposes. Nevertheless, compulbecome part of the proper functions of the FSO namely, the carrying out of open

important distinction between stocks which the FSO acquires through its open market purchases and those it may acquire through any scheme of compulsory procurement. The former are indeed a part of the buffer stock and the FSO will be free to operate on them as such and in particular to sell them in the open market when necessary. But the stocks acquired through compulsory procurement cannot be so operated, upon and cannot be sold it the open market.

### **Distribution of Procured Stocks**

As the Committee rightly points out, some control over distribution of such stocks will be necessary to ensure that supplies which have been specially procured at reasonable rates are made available to the needy consumer at such rates. In other words, such stocks will have to be distributed through fair price shops or modified ration shops. As we have earlier pointed out, these shops are to be maintained by the State Governments and are not conceived as part of the FSO. Hence, in any scheme of compulsory procurement, the FSO may at best act as an agent of the State or Union Governments for purposes of procurement. After the stocks are procured, it sory procurement in any form does not must hand them over to the Government concerned for distribution through appropriate channels.

Compulsory procurement of foodgrain and distribution through modified ration shops cannot thus be considered as belonging to the proper functions of the FSO. In fact, they would constitute an indication of the failure of the FSO to achieve its objective through open market operations. Further whether within or outside the functions of the FSO, a scheme of compulsory procurement, unless it is a regular feature as is suggested in the case of rice, is unlikely to succeed once open market purchases have failed and prices have begun to rise.

## **Open Market Sales**

Let us now consider the open market sales by the FSO. When prices tend to rise, the FSO is expected to release appropriate quantities of its stocks on the open market. Such a situation will usually arise only after producers' stocks have passed from their hands into the hands of traders, so that the price rise will be largely it the retail market. When the FSO releases its stocks on the open market, presumably they will be purchased by wholesale traders. This will be effective in checking the rise in prices in retail markets only if, as a result of the releases by the FSO, the wholesale traders release larger quantities than previously on the retail market. What is the guarantee that this will happen and that the wholesale traders will not merely buy up the FSO releases and sit tight over them?

Further, because the FSO will be a public body, the position of its stocks and its policy will all be public knowledge and the wholesale trade will know exactly what to do if it decides to buy up the FSO. This is a real danger and the net effect will be that all the stocks painstakingly built up and held by the FSO will be handed over, at a critical moment, to the wholesale trade which can be least trusted to use them in the interests of the community.

# **Licensing of Traders**

The Committee mentions the regulation of the wholesale trade by meats of a licensing system, Let us examine this system which is regarded as a key measure necessary to make the proposed system work successfully. Under it all traders and big producers in the country, who may deal in and stock more than 100 maunds of foodgrains, will be required (i) to take a licence; (ii) to make fortnightly returns of their stocks, sales and purchases; (iii) to restrain from purchasing or selling in a district if and when the Government so directs; (iv) to confine their sales and despatches to particular areas if and when the Government so

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directs. The Committee hopes that these powers may not have to be used ordinarily.

For, our present purpose the important point is that even if all the powers are used, they will prove inadequate to meet the kind of situation which we have envisaged above, when the major stocks are all in the hands of the wholesale traders or big producers (who for the present purpose need not be distinguished from traders) and when the releases by the FSO in the open market have not been effective in bringing down prices because no additional stocks were released on the retail market. The regulatory powers proposed will be ineffective in a such situation for there is no power to compel the licensed traders to sell. Even if stocks are truthfully reported, the Government may know all about them without any power to release them on the retail market. At the same time, this will not be the moment to initiate any scheme of compulsory procurement. Under the circumstances, there will be no alternative but to requisition stocks from traders and distribute them through appropriate channels of retail distribution. It would be an ironic situation if soon after releasing the stocks of the FSO, the Government were obliged to requisition stocks from traders for retail distribution.

# **Maintenance of Reserve Stocks**

There is another proposal which the Committee makes which deviates to some extent from the functions of the FSO as an open market operator. In addition to the buffer stock operation, an important function proposed for the FSO is to build up and maintain adequate reserve stocks. The Committee recommends that:

- (i) Such reserve stocks should be maintained at certain special points, such as, ports and metropolitan areas, chronically deficit areas, areas generally affected by floods and drought, and important centres of transport.
- (ii) Adequate arrangements should be made for revolving this stock in a manner such that it may not unduly upset the market.
- (iii) The turnover will be facilitated by the maintenance of a large number of fair price and modified ration shops.

The need to maintain fair price and modified ration shops also arises in another context. In a period of rising prices, one of the measures suggested by the Committee is to cordon off big cities like Calcutta Bombay and Madras, ban all movements of foodgrains by traders into and out of these cities and meet their requirements entirely from Government stocks or imports. Let us presume that by Government stocks are meant the FSO stocks at least inclusively. The Committee suggests that such cordoning off of the big cities at short notice will be greatly facilitated if all individuals in these cities are provided with identity cards and a large number of modified ration shops is maintained in all the cities. It recommends that the State Governments should maintain such shops as a normal measure. Now if we put the two proposals together, we get a unified proposition as follows:

- (i) The State Governments should maintain in all the big cities, and as a normal measure, a large number of modified ration shops.
- (ii) The FSO should utilise the agency of these shops for the purpose of the turnover of its reserve stock.

However, this is not the same thing as saying that the FSO should use the agency of the modified ration shops for the purpose of releasing its buffer stocks on the market. The Committee apparently makes a distinction between the reserve stocks and what it calls "the buffer stocks that the FSO may build up from operational considerations". The Committee's position therefore seems to be that the releases from the buffer stock will mainly be in the open market, while the turnover of the reserve stock will be through the modified ration shops maintained by the State Governments.

### **Buffer Stocks and Reserve Stocks**

The Committee has not explained the distinction between the two. Let us, therefore, try to see what can be the distinction between the reserve stock and the "buffer stocks which the FSO may build up from operational considerations". What are the operational considerations for which the FSO may have to build a buffer stock? The crucial consideration appears to be that at any moment when the prices show a tendency to rise, the FSO must not be found wanting in buffer stocks which it may release on the market in an effort to bring down the prices.

As mentioned earlier, a contingency of rising prices may arise broadly under two different circumstances. One is in a bad year when the crops are short. In such circumstances prices may begin to rise almost immediately after the harvest or in fact as soon as the prospects of a bad season become apparent. The release of the buffer stocks, therefore, will have to be quite early and much before any purchases can be made from the current harvest. In fact, in more severe cases, no fresh purchases at all may be possible. Hence the stocks to be released will have

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to be those carried over from the previous harvest. As the prospects of a subsequent harvest will always be uncertain, it is obvious that the FSO must have with it adequate buffer stocks at the beginning of each harvest or at least until the prospects of the harvest appear sufficiently certain. This seems to be the principal operational consideration for which the FSO will have to build buffer stocks. The other situation of price rise will be in a not-so-bad year when it will be mainly because of the cornering of the stocks by the wholesale trade. In such a situation, the price rise will usually occur after stocks have passed from the hands of producers into the hands of traders. The FSO may also have made its normal open market purchases by this time. In this situation, therefore, stocks from current purchases will be available for release.

The Committee has obviously these two situations in mind when it prescribes that "the FSO should sell that part of its stock which requires early turnover and also a part of its surplus stock either in the lean season of the same year in which it buys or in a subsequent year when there is a short crop". This appears in the Committee's description of the buffer stock operation. Hence we presume that both these types of sales are regarded as sales from the buffer stock and not from the reserve stock.

Thus, it seems that the FSO must have, at the beginning of each harvest, a buffer stock adequate enough to meet the contingency arising out of a subsequent harvest turning out to be unsatisfactory. For instance, if we suppose that our normal annual production at present is just sufficient to meet our demand and that in a bad year we may suffer a shortage to the extent of five million tons, it means that at the beginning of a harvesting season, the FSO must have a buffer stock of nearly five million tons appropriately divided between the two main harvesting seasons. The figure of five million tons is only illustrative and need not be taken as hard and fast. The point is that at the beginning of each harvesting season, the FSO must have a buffer stock adequate to meet what are considered to be not too infrequent short falls in the outrun of a harvest. This may be regarded as the buffer stock which the FSO must build from operational considerations.

### F S O Operations

Let us now follow the operations of the FSO beginning with such a buffer stock at the beginning of a harvest. The opening, buffer stock is that which is carried from the previous harvest and let us suppose, for simplicity of the argument, that storage considerations make it advisable that the stock should be rotated

annually as far as possible. This will require the release of almost the entire opening stocks during the course of the year. These stocks will be replenished by means of purchases during the current year. In a normal year, that is one in which current production is just adequate to meet current demand, the FSO should be able to purchase nearly as much as it has released on the market so that the opening stock position for the next harvest will remain unaffected. In a bumper year, the FSO might be able to purchase much more than its releases and the opening stocks at the next harvest will be larger. In a bad year, the FSO will not be able to purchase as much as it has released and the opening stocks for the next year will be smaller.

If it is true that our production during a normal year is adequate to meet our current demand, then beginning with an adequate buffer stock and operating it in the way described above, a normal succession of good and bad years should leave the FSO with at adequate stock at the beginning of each season. However, an unfortunate succession of bad years, which does occur, may deplete the buffer stocks below the level of adequacy and will have to be replenished by imports.

above is that it gives enough notice for the imports to arrive before the beginning of the next season.

Starting on the hypothesis that our normal production is adequate to meet our present demand, the main function of the buffer stock operation is to effect a net withdrawal from the market supplies to the extent of the surpluses in good years and to make, a net addition to the market supplies to the extent of the deficits of bad years. In both the cases, the reference is to the retail market. From operational considerations, as explained above, the best method to do this seems to be for the FSO to sell on the market a fixed quantity, say, five million tons, every year and to make purchases of varying quantities according to the character of the season. In a very bad year, when the deficit might be as large as say five million tons, the FSO might not be able to make any purchases whatever. In a bumper year, with a surplus of, say, five million tons, the FSO should be able to purchase to the extent of ten million tons after it has released its own stock of five, million tons. The important point of this operational procedure is that the FSO sales will be of a fixed quantity while its purchases will vary from year to year. Also, the FSO The merit of the operation as described sales will be in the nature of turnover of its opening stocks. It will be necessary, as the Committee points out, that this turnover should be carried out in such a way as not to upset the market unduly. The best way of doing this, again as suggested by the Committee, is to release such stocks through a large number of modified ration shops which the State Governments should maintain in all the big cities as a normal measure. The fact that the FSO sales will be of a fixed quantity makes them eminently suitable for releasing through the modified ration shops.

Now if this is how the buffer stock operation is conceived, there is little need for any reserve stocks outside this. It seems that this is a difference of terminology and no more. What we have described above as the opening buffer stocks, which become necessary from the operational considerations, the Committee, probably refers to as the reserve stocks. If that is so, it seems that the buffer stock operation as described above is what is conceived by the Committee and that the turnover sales out of the buffer stock are intended to be made through the modified ration shops on the retail market and not in the open wholesale market, The additional point gained by the above analysis is that the FSO need not make any more sales that are involved in the turnover of its beginning stock. We may therefore avoid altogether the operationally wasteful sales on the open market which, if they are acquired and held by the traders, will fail to achieve their purpose.

### Conclusion

If we, now put together these several propositions, the **modus operandi** of the FSO appears to be as under:

- (i) In each harvest season, a fixed price will be announced at which all deliveries to the FSO will be accepted
- (ii) If subsequently, the prices rise very much above this level and the FSO finds it impossible to make open market purchases, a ban will be put on purchases by licensed traders, the FSO continuing its purchases at the announced price. (A form of compulsory procurement.)
- (iii) A fixed quantity of stock, say five million tons, will be released on the retail market through the agency of modified ration shops to be maintained by the State Governments in all the big cities as a normal measure.
- (iv) In case it is found impossible to release the given quantities through the modified ration shops on
account of competition by traders, the big cities will be cordoned off and made inaccessible to the private trade.

(v) If in any year after purchases have been completed, it appears that the opening stocks for the next year will be less than the given quantity, say, five million tons, arrangements will be made for imports to meet the deficit.

It is true that the Committee has not framed its policy recommendations on

these lines. In fact, on some points, the Committee's proposals appear to be at variance with the modus operandi described above, such as, for instance, its proposal that the buffer stock sales by the FSO should be mainly in the open market. Nevertheless, the purpose of this analysis is to show that if one puts together the several propositions contained in the Report, the above is what emerges as a coherent policy and it is hoped that the Committee will not disown it.

# RESERVE BANK OF INDIA ALL-INDIA RURAL CREDIT SURVEY DISTRICT MONOGRAPHS POONA

# (BOMBAY STATE)

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#### FOREWORD

This is one of the series of District Monographs of the All-India Rural Credit Survey organised by the Reserve Bank of India during 1951-52 and relates to the District of Poona in the Bombay State. The fieldwork was done during November 1951 to July 1952 and was conducted under the central direction of the Committee of Direction. Shri D.P. Apte acted as Districts Inspector under the general Supervision of myself as the Regional Controller for the seven districts where the Survey was administered by the Gokhale Institute of Polities and Economics, Poona. The Monograph has been prepared in accordance with the Synopsis approved by the committee of Direction with Some minor modifications of arrangement. Shri D.P. Apte assisted me in drafting to an extent justifying his joint authorship of the Monographs. The Monographs is, therefore, being forwarded under our joint authorship. The last chapter entitled "Review of Situation" where an integration of the different parts of the report and a general appraisal of the situation is intended remains undone. It is hoped to complete it in the near future.

Poona 10th June, 1953. V.N. Dandekar

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## **POONA DISTRICT**

### I. INTRODUCTORY

(1.1) Poona district is one of the central districts of the Bombay Deccan. The area of the district is approximately 6,000 square miles and the 1951 population about 19,51,000. Poona is the headquarters of the district is and has a population of about 5,40,000. For administrative purposes, the district is divided into thirteen talukas and one Mahal. They are:-

- (i) Khed, Junnar, Ambegaon;
- (ii) Maval, Mulshi;
- (iii) Velhe Mahal, Bhor;
- (iv) Poona city, Haveli, Purandhar, Sirur;
- (v) Indapur, Dhond, Baramati.

(1.2) Talukas mentioned in the first three groups from the western region of the district bounded on west by the western ghats. The talukas in the three groups lie, respectively, in the north, middle and south of this regions. Here the country is undulating and intercepted by numerous spurs of the western ghats which break off in the south-westernly direction. The talukas in the fourth group form the central regions of the district and those in the last group form the eastern region where the country is plain. The Bhima and its tributaries form the north-east boundary while the Nira forms the southern boundary of the district.

(1.3) The area in the western region is hilly and the soil is shallow. There is a considerable area under forest growing good quality timber and supplying firewood. The soil in the central and eastern regions is a mixtures of black and red soils. The black soil is more retentive of moisture and hence suited to both the Kharif and Rabi crops. The red soil is more coarse and is suitable only for the Kharif crops.

(1.4) The district receives its rainfall from south-west as well as the north-west monsoons. The regular monsoon breaks ordinarily in early June in the west and gradually extends over the district. It closes in September and is followed by the north-east rains which give the moisture necessary for rabi crops in the central and eastern regions. The north east rains close in November. Occasional heavy showers in December or after are abnormal and harmful. The rainfall varies considerably in different parts of the district. There are three rainfall sores. The rainfall is heavy and certain in the western parts of the district. It is moderate in the central belt and in the eastern belt it is both inadequate and uncertain. The average rainfall in the three belts is 165", 30" and 20", respectively. On account of the irregular and inadequate rain the eastern parts of the district are liable to frequent droughts and famines. However, rainfall in 1951-52 was adequate and the season satisfactory in the whole of the district. As in other parts of the Bombay Deccan, there are two agricultural seasons, the Kharif that is, the rainy season, and the Rabi, that is, the winter season. Kharif extends from June to the middle of October and Rabi from the middle of October to the and of February.

(1.5) In table 1.1 are shown the area and population of district divided into five natural region.

(1.6) The high density in the central cial crops like sugarc region is due to the inclusion of the city vegetables are small. I of Poona in that region. The density of table are given the pro population in that region exclusive of under different crops:-

Poona city is comparable with that other regions. The rather low density in the south-west region is due to the extreme hilly character of that region while the low density in the eastern region must be ascribed to the frequent droughts to which that region is liable.

(1.7) For the district as a whole, 8 per cont of the area is under forest, about 50 per cent under different crops and remaining 42 per cont as cultivable waste, current and permanent fallow, etc. The high percentage under the last category is mainly due to the physical features of the district. The principal food crops are Jowar and Bajri. Areas under commercial crops like sugarcane, chilies and vegetables are small. In the following table are given the proportionate areas under different crops:-

		Area in square miles	1951 Population	Population per sq. miles	Population of taluka H. Qrs.	Population of taluka H. Qrs. as % to total
North- West	Ambegaon Junnar Khed	1474	3,65,624	232	30,114	8
Middle West	Maval Mulshi	767	1,67,270	218	4,428	3
South-West	Velhe Bhor	521	1,01,102	194	8,232	8
Central	Poona Haveli Purandhar Sirur	1620	9,81,243	606	5,98,381	61
Eastern	Dhond Baramati Indapur	1621	3,35,737	204	40,894	12
		6,003	1,950,976	324	6,82,049	35

Table 1.1.

Crop	% to the total Cropped area
Jowar	55
Bajri	26
Rice	6
Wheat	2
Gram	3
Other Pulses	3
Sugarcane	1
Other Crops	4
Total	100

Table 1.2. Important Crops in the District

(1.8) Between Jowar and Bajri, Jowar is more important in the central and eastern zones while Bajri becomes comparatively more important as we go from south-east to north-west. Rice is important only in the western region when the rainfall is heavy. It is particularly important in the middle-western region. Gram is concentrated in Junnar and Khed talukas of the western zone while other pulses are concentrated in parts of the north-west, central and eastern zones.

(1.9) There are about 2,75,000 plough cattle, mostly bullocks, in the district which gives an average of about an animal for every 6 or 7 acres of cropped area. There are about 1,68,000 cows which is only a little more than half of the number of bullocks and about 60,000 shebuffaloes which is nearly fifteen times the number of he-buffaloes. It is clear,

therefore, that while the plough animal is the bullock, the milch animal is the buffalos. There are in the district about 2,63,000 sheep and an equal number of goats.

(1.10) The number of plough in the district is about 83,000 which gives on an average one plough for every 22 acres of cropped area. There are about 42,000 bullock carts which gives almost a cart for every 30 persons in rural area. Of the more expensive equipment, which is mainly reported in Baramati and Indapur talukas of the eastern zone, there are reported to be only 48 tractors, 776 sugarcane crushers, 1,279 oil engines, 361 oil presses and 7 electric pumps in the district.

(1.11) The principal rivers of the district are the Bhima which originates in the western ghats and flows through the middle of the district towards the east and the Ghod which flows through of the northern talukas and later forms the eastern boundary of the district until it flows into the Bhima. The rivers Bhima and Indrayani are other principal tributaries of the Bhima and flow through the central region. From the point of view of irrigation, however, the most important rivers are the Nira, Mutha Mula all of which flow into the Bhima from the south. The water of these rivers is being used by canals for irrigation purposes.

The total area under government canal well irrigation under these rivers is about The 1,24,000 acres. In addition, about 6500 irri

well irrigation is found in all other parts. There are about 29,000 wells which irrigate about 1,12,000 areas of land. Area irrigated by other sources such as tanks, etc., is small - about 3,000 areas.

(1.12) Other important source of irrigation is wells. Except in the middle-west and south-west zones which are hilly,

acres are irrigated by private canals,

mostly in the central and eastern regions.

(1.13) In the following table is shown the area irrigated in different regions:-

	Region	Talukas irrigated	Area under canals (acres)	Area under other sources (acres)	Total irrigated acres (acres)
I.	Middle-west	Maval Mulshi	-	753	753
П.	North-west	Khed, Junnar, Ambegaon	5,311	27,414	32,725
III.	South-west	Velhe and Bhor	226	357	583
IV.	Central	Haveli, Poona city, Purandhar and Sirur	37,497	37,243	74,740
V.	Eastern	Indapur, Dhond and Baramati	87,377	49,594	1,36,971
	Tota	1	130,411	1,15,361	245,772

(1.14) Maratha is the principal agricultural community. Moneylenders and traders are mostly Marwaris, Jains and in some places Gujarathi Vanis. Practically every village in the district has a Marwari trader-cum moneylender and all important marketing centers in the districts are

dominated by them.

(1.15) Besides the seasonal migration to Bombay in search of industrial employment, there is apparent considerable migration towards the sugarcane tracts within the district as well as

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to the neighboring sugarcane areas of the Sholapur and the Ahmednagar districts. As earlier stated, the eastern region of the district is liable to frequent drought and famines. In times of scarcity there occurs considerable migration to less affected neighboring areas.

(1.16) There are a number of industrial establishments in the district concentrated round about Poona City. Among the larger establishments are a textile mill, an oil engine manufacturing factory, a paper mill, an rubber-products factory, a biscuits factory, etc. There is a glass manufacturing factory at Talegaon, cotton textile and mills and varnish factories at Bhor. Form the point of view of industrial employment that they Provide. Mention should be made of the Government Ammunition and High Ex-plosive factories at Kirkee and Dehu Road near Poona. Sugarcane is the only important crop giving rise to agricultural processing industries in the district. There is a sugar factory at Walchandnager in Indapur taluka and there are several small establishments in the eastern and central regions engaged in the manufacture of gur. The industry is naturally seasonal and provides only seasonal employment. Though groundnut and safflower are grown in considerable scale in the eastern region, there are no large establishments engaged in oil pressing.

(1.17) As already indicated, western regions of the district possess considerable forest yielding good quality of timber, firewood and other forest produce. There is, however, no large scale industry engaged in the processing of forest produce except a few saw mills situated at Poona.

(1.18) Thus Poona city appears to be the most important industrial center offering considerable employment. Poona is the district headquarter with a population of about six lakhs within the Principal Corporation limits. Indapur, Dhond and Baramati are other Places of some industrial importance; they are headquarters towns of the respective talukas and have populations between 15,000 to 20,000.

(1.19) It will be thus seen that the district does not have any major industries offering sizable perennial employment, and except in the sugarcane growing areas of the central and eastern region, possibilities of even seasonal industrial employment are meagre. In the western region, they are almost absent.

(1.20) Among the cottage or village industries of the district mention should be made of the hand-loom weaving and oil pressing industries. There are over 2,000 workers engaged in hand-loom weaving. The prominent weaving centers are Poona, Junnar, Manchar, Saswad and Baramati. Salis and Koshits are the two main communities engaged in this industry.

(1.21) There are over 360 bullock driven oil presses mainly concentrated in Khed and Junnar talukas of the north-west region, Sirur taluka of Central region and Indapur and Dhond takukas of the eastern region. Telis from the main community engaged in this industry.

(1.22) Poona is an important railway junction, and by natural setting is situated in the heart of the district. The district is well-served by railroads. Poona-Bombay, Poona-Sholapur, Poona-Miraj and Poona-Baramati via. Dhond are the four important rail-routes of the district. Talegaon, about 20 miles from Poona is important railway an station on Bombay-Poona line. Vegetables, fruits and other agricultural produce of the North-west region pass to Bombay Via. Talegaon. Dhond is another important rail junction in the Poona-Sholapur route and enables transportation of Gur from Baramati and other markets to Poona as well as to Manmad and to Sholapur sides. Dhond-Baramti route is very important from the point of view of transportation of Gur from Baramati market to other markets in the state. Nira is a railway station on the Poona-Satara route and is

important from the point of view of transport of gur and other commodities from Nira and neighboring markets. The railway routes also enable the cultivators to bring milk and dairy products to Poona city's consumer market.

(1.23) The district is well served by motorable roads and almost all talukas except the hilly regions in the western parts are connected to the district headquarters and important places in the districts. From the point of view of its connections outside the districts, it is connected by metalled roads to important markets like Bombay, Nasik, Ahmednagar, Sholapur and Satara. The total length of the metalled roads in the district is about 635 Milles while that of unmetalled roads is about 220 miles. Except western hilly region in the the communications are generally good. Nevertheless there remain large areas without direct connections with important markets. For instance three hundred square miles of fruits and vegetable growing area in the north-west and central region has no direct outlet to Bombay market except by the round about way by road up to Talegaon and by thence rail to Bombay. A new and shorter route via Naneghat is proposed and is under active consideration.

(1.24) From the point of view of marketing, sugarcane is the only important crop in the district. Baramati and Nira, both in the eastern region, are the two important markets for gur; the former is regulated under the Bombay Agricultural produce Markets Act. Other important crop is potato which is grown on some scale in the north-west region of the district. Manchar, Khed and Chakan, all in that area, are the important markets for potato; all these are regulated. Poona, which is the district headquarters, has a large number of branches of the commercial banks. There are also a few branches of commercial banks at other places in the district. The banking facilities generally are adequate. Cooperative movement in the district is well established and developed. There are about 420 primary co-operative societies with a total membership of 32,000, and about a 100 multipurpose societies with a total membership of 10,000. There are also a few sale and purchase societies.

(1.25) To sum up, from the point of view of agricultural economy, the Poona district presents wide variety of conditions. On the one hand we have the western region with heavy rainfall and rise economy and consequent lack of employment in the rabi season. At the other extreme, we have the famine-liable area of the eastern region with only a stretch of canal-irrigated sugarcane area. The central region, which is often referred to as the transition tract, has a comparatively stable agriculture but except for some potatoes, fruits and vegetables, it grows mostly food grains. The cooperative movement is well established but mainly due to the fact that now for more than ten years, the trading in food grains was monopolised by government, has yet to prove its efficacy in financing the food grain economy under normal circumstances. With the lifting of the food grains control, the movement will soon face the situation and so much depends on the imagination with which this is done.

#### **II. THE SELECTED VILLAGES**

(2.1) For purpose of the field survey directed towards assessing the requirements of agricultural credits, eight villages were selected in the district. With a view to comparing conditions in this respect in villages having and not having co-operative credit societies, four of the villages were selected from among those not served by any co-operative credit society. The villages were selected by a strict process of random sampling giving each such village a chance of being selected in proportion to its size, that is, its 1951 population. The other four villages were selected from among the villages having credit societies.

(2.2) The geographical distribution of the selected villages has, however, been somewhat unfortunate. Of the five natural regions into which we divided the district in the preceding chapter, we have no villages selected from two of them the middle-west and the south-west region. The absence of a villages from these two regions might, perhaps, be excused, because in the first instance, though these regions cover more than one fifth of the area of the district, their population is only about 14 per cent of population of the district. the total Secondly two of the selected villages, one

from the north-west region and the other from the central region are quite close to middle-west and south-west regions, respectively, so that they might be expected to represent the conditions in these hilly regions. All other regions are very well represented by the remaining six selected villages.

(2.3) In the following table are given the particulars of the selected villages. In the paragraphs that follow we give brief descriptive notes on each of the selected villages.

Village	Taluka	1951 Population	No. of families	Remarks
Kusegaon	Dhond	1,101	157	Without society
Salumbre	Haveli	340	55	Without society
Shindavane	Haveli	1,110	160	Without society
Waghu	Khed	240	40	Without society
Donde	Khed	1,603	254	With society
Mahalung Padwal	Ambegaon	2,585	409	With society
Nimbut	Baramati	2,658	459	With society
Waghapur	Purandhar	1,330	223	With society
		10,967	1,757	

Table 2.1 - Villages se	lected in the distric
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(2.4) Kusegaon is a village from Dhond taluka in Poona district. It is about five miles from Patas station on the Poona-Dhond railway route. The total land of the

land revenue amounts to Rs. 980. Rainfall in this part of the district is uncertain and scanty. The main crop is Jowar. The 1951 population of the village was 1,101. village measures about 4,980 areas of According to our canvass, we enumerwhich 2,992 acres are cultivable. The ated 157 families of which 120 were cultivators and 37 were non-cultivators. The cultivators owned 258 bullocks.

There are 55 wells in the village. Well water is used for drinking purposes. There are seven temples in the village. Bhanuba is the main deity. There is an annual fair in the month of Margashirsha every year in this temple.

The village does not have a cooperative society or a post office or a dispensary. The local labour supply is more than sufficient to meet the demands of the local cultivators. Some of the families migrate to the neighboring villages as well as to distant places like Baramati and Akluj to find employment in sugar manufacturing concerns.

(2.5) Salumbre is a village from Maval taluka of then district and is situated at a distance of about three miles from Dehu Road railway station near Poona. The village lies in the hills and the river Pawna flows by the side of this village. The village lands measure 932 acres and the land revenue amounts to Rs. 1,273. The major land uses are as under:-

Cultivable area	803 acres	
Uncultivable area	6 acres	
Area under rivers & streams	37 acres	
Area under village site, House, e	etc. 7 acres	
For other public uses	42 acres	
Forest	37 acres	
1	Fotal 932 acres	

The main crop is Jowar Pulses are also sown along with the main crop. The crop yield is usually six to eight annas in a rupees.

The price of the land varies from Rs. 200 to Rs. 500 per acre. The land is not quite fertile. Rainfall is also insufficient and uncertain. Therefore, most of the villagers consider farming as a subsidiary occupation and they seek employment in factories nearby.

Of the six wells in the village, only one is used for irrigation, another is used for drinking water purposes. The remaining four wells are not useful for either of the purposes.

In the following are the details of livestock as in 1950-51:-

Working bullocks	65
Cows in milk	15
Cows not in milk	24
Buffaloes in milk	2
Buffaloes not in milk	70
Cattle (1-3 years)	27
Other Young stock	62
Goat-female	11
Poultry birds	160

The number of working bullocks gives a pair of bullocks per cultivator for about

24 acres of holding. Of the 19 ploughs in use, 15 were wooden ploughs and the remaining were iron ploughs.

The 1951 population of the village was 340. According to our own canvass we enumerated 55 families of which 27 were cultivators and 28 were non-cultivators.

There is a voluntary primary school with 25 students. The main deity of the village is Wagheshwari and an annual fair is held on the full moon day in the month of Magha. Being a small village there is no co-operative society or dispensary or a post office in the village. For their purchases, the villagers go to market at Talegoan which is about eight miles from here.

Local labour is sufficient to meet the demand of the cultivators. The rate varies from Rs. 1 to Rs. 1-8-0 per day. Many of the cultivators have milch cattle and as such they retain about one-third of their holding as current fallow for grazing. The village suffers from shortage of fodder supply and the demand is met from outside purchases.

(2.6) Shindawane is a village from Haweli taluka of the district. It is situated at a distance of about three miles from Uruli railway station on the Poona-Dhond railway line. The village is situated on a higher level and is surrounded by hills. There are three streams flowing from south to north by the side of the village. The village lands measure about 4,964 acres and the land revenue amounts to Rs. 2,423. The major land uses are as under:-

Cultivable area	3,800 acres
Area under streams	51 acres
Uncultivable area	300 acres
Area under village site (houses, etc.)	17 acres
Area under roads, etc.	60 acres
For other public uses	145 acres
Forest	591 acres
Total	4,964 acres

Jowar, Bajri, Arher and other pulses are the important crops. Sugarcane, onion and wheat are the irrigated crops. About 300 acres are under well irrigation. There are 39 pucca and 11 kachha wells for irrigation and 22 wells for drinking water purposes. The remaining 11 wells are out of use. In the following are the details of live stock as in 1950-51:-

Working bullocks	379
Cows in milk	57
Cows not in milk	105
Buffaloes in milk	12
Buffaloes not in milk	10
Cattle (1-3 years)	50
Other young stock	13
Sheep	451
Goat-female	312
Poultry	753

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The 1951 population of the village was 1,110. According to our own canvass we enumerated 160 families of which 98 were cultivators and 62 were non-cultivators.

There is a school upto Vernnacular seventh standard. There are ten temples in the village. The main deity is Vithoba and an annual fair is held in the month of Chaitra. There is a small grocer's shop in the village, but the villagers usually make their purchases at Uruli which is a weekly market. There is a cattle market. There is a cattle market at Yowat about ten miles from here.

Local labour supply is adequate. Male workers are paid Rs. 1 to Rs. 1-8-0 per day and the female workers are paid Rs. 0-3-0 to Rs. 0-10-0 per day. Local fooder supply is inadequate and about 20,000 bundle of Kadba are imported from outside.

(2.7) Waghu is a village from Khed taluka of the district and is situated in the Sahyadri. It is about the miles from Kadus and is approachable by bullock carts through the hilly track. A small river, the Bhima, flows by the side of the village. The village lands measure 1,164 acres and the land revenue amounts to Rs. 735. The land is inferior black and red and only 316 acres are cultivable. There is no irrigated land in the Village. The dry lands are valued at Rs. 100 to Rs. 500 per acre. There is a heavy and regular rainfall and paddy is, therefore, the main crop. Nachni and pulses are the other crops. The crop yield is usually six to eight annas in a rupee.

The 1951 population of the village was 240. According to our own canvass we enumerated 40 families of which 32 were cultivators, and 8 were non-cultivators.

There is a voluntary school in the village, but there is no post office or a co-operative society in the village. Local labour is paid at Rs. 1 to Rs. 1-8-0 per day and is sufficient to meet the demand of the cultivators. There is a large area under forests and grassing pastures and as such fodder shortage is never felt. Ahire is the nearest market for the village. Bhairavanath is the main deity and an annual fair is held in the month of Magh.

Thus, the village is a typical small village in what is known as Maval area of the district.

(2.8) Donde is a village in Khed taluka, about four miles form Khed, the taluka headquarters. It lies on the road joining kadus with Khed and the river Bhima flows by the side of the village. The village lands are red and fertile and measure about 2.039 acres. The land Out of the total of 1.639 acres, about 160 revenue amounts to Rs. 2,821. The major land uses are as under:-

Cultivable area	1481 acres
Uncultivable area	51 acres
Area under village site (houses,	24 acres
etc.)	13 acres
Area under roads, paths Forest	425 acres
Total	2,039 acres

It will be seen that over one-fifth of the area is under forest. In the following is the area under different crops in the year 1950-51:-

Crops		Acres
Kharif Jowar		144
Rabi Jowar		24
Bajri		618
Paddy		5
Wheat		29
Arhar		6
Gram		63
Urid		39
Hulga		29
Math		15
Other pulses		32
Potato		76
Groundnut		168
Sesamum		18
Corriander		11
Chillies		11
Citrus fruits		33
Other crops		15
Grass		303
	Total	1,639

acres are double cropped and hence 1,479 acres can be considered as double cropped area. The commodities sent outside the village for sale are food grains, groundnut, pulses, potato and oilseeds. There is no wholesale trader. commission agent or a moneylender in the village. The value of irrigated land - varies from Rs. 3,000 to Rs. 5,000 per acre. There are about 60 wells in the village in current use for irrigation purposes and about 20 wells which are not in use at present. River water is used for drinking purposes.

In the following are the details of livestock as existing in 1950-51:-

Working bullocks	384
Cows in milk	39
Cows not in milk	-
Buffaloes in milk	22
Cattle (1-3 years)	73
Cattle under one year	36
Goat-female	162
Sheep	325
Horses	2
Poultry birds	221
Figs	55

The ploughs in use are mostly wooden ploughs. There were 116 wooden ploughs and 25 iron ploughs. There were 58 bullock carts, 4 oil-presses and one sugarcane crusher.

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The 1951 population of the village was 1,603. According to our own canvass we enumerated 254 families of which 178 were cultivators and 76 were non-cultivators.

There are four small grocers' shops in the village. They do not stock all the provisions and the villagers mostly depend upon the weekly market and the traders at Khed. There is a primary school of the District Local Board in the village. Wagheshwari is the main deity in the village. An annual fair is held in the month of Chaitra. The villages has a co-operative society which has been registered about 25 years back; but it does not meet the credit requirements of the cultivators. Traders and money lenders at Khed and other markets are the important private agencies on which the cultivators depend for the credit supply. There is no dispensary in the village but at Khed there are a few doctors. There is also a branch of the Bombay Mothers' and Children's Sangopan Sanstha at khed. Besides, the Ambulance car of the Health Training School visits the village once in a week.

During the digging season of groundnut and harvest of Bajri, local labour supply is found to be inadequate. Male labour is paid Rs. 1- 8-0 to Rs. 2-0-0 per day while female labour is paid Rs. 0-10-0 to Rs. 1-0-0 per day during this season. Normally they are paid Rs. 1-0-0 and Rs. 0-8-0, respectively. The village also finds shorts of fodder supply and about half of the total requirements is met from outside purchases. Ploughing and other agricultural operations are done against payment in kind. As regards ploughing with iron plough, the charges are about Rs. 30 per acre.

(2.9) Mahalung Padwal is a village in Ambegaon taluka of the district and is situated about seven miles from Manchar which is an important market in the district. It is about four miles by a Kachha road from Kalamb which lies on Poona-Nasik road. The villages is surrounded by hills on three sides and a small stream flows by the remaining side of the village. The village lands are red and fertile. They measure about 6,614 acres and the land revenue amounts to Rs. 4,982. The major land uses are as under:-

Cultivable area	5,026	
Uncultivable area	558	
Area under rivers & stream	112	
Area under roads and paths		19
Area under village site	24	
Free grassing	36	
For other public uses	25	
Forest		814
	Total	6,614

It will be thus seen that about oneeighth of the area is under forest. The main forest products are Hirda, Shikekai, other miscellaneous products, timber and firewood.

In the following is the area under different crops during 1950-51:-

Kharif Jowar	33 acres
Rabi Jowar	769 acres
Bajri	2,042 acres
Paddy	3 acres
Wheat	6 acres
Gram	12 acres
Arhar	3 acres
Urid	35 acres
Hulga	12 acres
Math	120 acres
Other pulses	5 acres
Ghas	10 acres
Citrus fruit	44 acres
Chilies	15 acres
Groundnut	78 acres
Sesamum	57 acres
Grass	163 acres
Potato	215 acres

Foodgarins, potato and groundnut are the main commodities which are sent to outside markets for sale. The village records show that is the year 1950-51 the total cultivated area was 5,163 acres of which double cropped area was 213 acres, thus leaving net cropped area of 4,950 acres. The current fallow land for that year was 76 acres. Thus the total cultivable land amounted to 5,026 acres.

There are 100 pucca and 60 kachha wells in the village for irrigation purposes and only three wells for drinking water purposes. About 35 wells are not in use at present.

This is a Rayatwari tract and most of the cultivators are land owners. Landless and hence pure tenants will be very few. Nevertheless share renting is frequent. The common practice is that under the tenure, one-third of the produce is given to the landlords as share rent. However, all the expenses in cash and kind such as for seed, manure, etc., are to be shared by the landlord and the tenant in the same proportion as their share in the gross produce. It is only when team labour is required that the tenant alone shares the burden.

As already mentioned, the lands of the village are rich and fertile. The values for irrigated land very form Rs. 3,000 to Rs. 5,000 per acre. In the following are the details of the livestock as existing in 1950-51:-

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Working bullocks	533 Nos.
Cows in milk	58 Nos.
Cows not in milk	394 Nos.
Buffaloes in milk	46 Nos.
Buffaloes not in milk	33 Nos.
Cattle (1-3 years)	66 Nos.
Cattle under one year	99 Nos.
Goat- female	553 Nos.
Sheep	686 Nos.
Horses	16 Nos.
Poultry birds	672 Nos.

The number of working bullocks given 2 to 3 bullocks per cultivator and hence a pair for 18 acres of cultivated holding. The ploughs in use are mostly wooden and drawn by a pair of bullocks. There were 175 wooden ploughs and 25 iron ploughs. There were 45 bullock carts and 4 oil-presses in the village.

The 1951 population of the village was 2,585. According to our own canvass we enumerated 409 families of which 243 were cultivators and 166 were non-cultivators.

There are in the village four small grocers' shops, but they do not stock all the provisions and the villagers mostly depend upon the weekly market and the traders at Manchar. There are about a dozen temples in the village. There is no post office for the village though the letters are delivered everyday from the post office at Manchar. Manchar is an important market and there is a branch of the Poona central co-operative bank at this place. There are a number of traders and commission agents dealing mainly in potato and groundnut. Railway booking facilities for fruits and vegetables for transport to Bombay and other places on the central Railway are available at Manchar. The market is shortly going to be regulated under the B.A.F.M. Act.

There is a co-operative society in the village which was stated in 1948. The society runs a ration-shop and also supplies potato-seed and manure. The village has a primary and secondary school upto vernacular seventh standard. The school has its own building.

(2.10) Nimbut is a village in Baramati taluka from Poona districts. It lies on the border of the Purandhar and Baramati talukas. It is about 48 miles from Poona and about 2 miles from Nira on the Poona-Baramti road. Nira is an important market in the district. The village is situated on the plain and the river Nira flows by the side of the village.

The lands of the village measure 6,458 acres and the land revenue amounts to Rs. 2,638 The major land uses are as under :-

Cultivable area 5428 act			
Uncultivable area	ea 613 acres		
Area under canals	173 acres		
Area under roads and paths 29 acres			
Free grassing	46 acres		
Area under village site	90 acres		
Area under roads and paths	paths 4 acres		
Forest	prest 75 acres		
	Total	6,458 acres	

In the following is given the area under different crops in the year 1950-51:-

Crops		Acreage		
Jowar dry		1083		
Jowar irrigated		752		
Bajri	555			
Paddy		150		
Wheat		126		
Maise		3		
Arhar		25		
Gram		214		
Other pulses		50		
Fodder		56		
Onion		44		
Chilies		12		
Grapes		11		
Sugarcane		256		
Groundnut		22		
Citrus fruit		22		
Oranges		5		
Safflower		35		
Other fibers		10		
	Total	3,431		

The 1951 population of the village was 2,658. According to our own canvass we enumerated 459 families of which 313 were cultivators and 146 non-cultivators.

These cultivators owned 471 bullocks. There are 72 wells in the village. Some of the fields get water supply from the Nira Left Bank Canal which flows by the side of this village. Sugarcane, fruits and in some cases food grains are the main irrigated crops.

The population of the village is spread over a number of hamlets. The village has a secondary school up to vernacular seventh standard. There are a few temples in the village. Bhairavnath is the main deity. There are a few small grocers' shops in the village, but the villagers make most of their purchases at Nira which is a big market. There is a post office, a bank and a railway station at Nira.

As regards the labour supply, the village suffers from shortage during the Rabi season. Agricultural laborers from the neighboring villages migrate to this village. Some skilled laborers, who specialise in the manufacture of gur also stay in the village during the crushing season.

An important feature is that there are four co-operative societies in this village. The oldest amongst them is a multipurpose society which was started in 1911. This society mainly serves the members in the village proper. It has a

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number of activities and it caters efficiently to the needs of the cultivators. The other three societies are established mainly for the three important hamlets of the village. Nira is the market for the purchase and sales. Quick transport facilities are available from here both by rail and by road. There is also a branch of the Poona Central Co-operative Bank and the Nira Canals Co-operative Societies Purchases and Sale Union of Baramati. There a number of wholesale traders and commission agents and moneylenders as Nira. The villagers are active and recently they have completed a scheme of bringing the water-logged areas under cultivation. A Drainage Society, first of its kind in this area was formed and the work was successfully executed there by bringing under cultivation more than 100 acres of land.

(2.11) Waghapur is a village in Purandhar taluka of the district. The village is surrounded by hills on all sides. Rajewadi railway station about 24 miles from Poona on the Southern Railway is the only convenient approach for this village. A kachha road of about a mile and a half connects the village with the railway station. There is no river near by and the villagers have to depend upon the supply of well water for drinking purposes. Rainfall is uncertain and scanty. The village lands measure about 2,772 acres and the land revenue amounts to Rs. 1,470.

The major land uses are as under:-

Cultivable area		2171		
Uncultivable area	152			
Free grassing	Free grassing			
Area under roads and	paths	10		
Area under village site	17			
Area under railway ro	24			
Area under rivers and	28			
streams	294			
Forest				
	Total	2,772		

The area under different crops in the year 1950-51 was as under:-

Crops		Acres
Rabi Jowar		1061
Bajri		630
Paddy		1
Wheat		8
Arhar		8
Nath		63
Hulga		14
Other pulses		7
Onion		20
Chilies		14
Vegetables		7
Green Gram		6
Figs		16
Pomegranates		8
Sugarcane		8
Mango		20
Tamarind		15
Grassing Pastures		427
	Total	2,333

Thus about 160 acres are cropped is no shortage of labour supply. Male twice during the year.

The land is reddish and of medium fertility. There are about 150 walls in the village. Some of the wells get dried up in summer. Garden crops like figs and pomegranates are grown on the irrigated land. Jowar and Bajri are the important food crops. The crop yield is normally annas eight to annas ten in a rupee. The irrigated land is valued at Rs. 2,000 to Rs. 3,000 per acre. Dry lands are valued at Rs. 100 to Rs. 400 per acre. The land are ploughed with wooden or iron ploughs with 4 to 8 bullocks. There are five oil engines in the village.

In many of the fiends, the soil is coarse. Besides there is uncertainty and inadequacy of rainfall. Hence but a few cultivators depend entirely on agriculture. The remaining seek employment in the railway line maintenance work. Some of the members of some families have permanently migrated to places like Poona, Sholapur, Bombay, etc. Naturally, there two visits to each village.

workers are paid Rs. 1-8-0 per day and female workers are paid Rs. 0-8-0 Rs. 0-10-0 per day.

The 1951 population of the village was 1,330. According to our own canvass we enumerated a total of 223 families of which 145 were cultivators and 78 were non-cultivators. There are a few temples in the village. Wagheshwari and Bhairavanath are the main deities. There is a school upto vernacular seventh standard. There are about 400 students in the school. The school holds night classes also for adults. The post office is situated in the school building. The village has a co-operative society which also runs a ration shop. There are a few grocers shops in the village but the villagers make most of their purchases at the weekly market at Rajewadi.

(2.12) The selected villages were visited by our investigators. In the following table (table 2.2) we give the dates of the

		First visit	Second visit
1.	Kushegaon	6-2-52 to 12-2-52	2-6-52 to 9-6-52
2.	Salumbre	23-1-52 to 26-1-52	10-6-52 to 15-6-52
3.	Shindavane	23-2-52 to 2-3-52	2-6-52 to 9-6-52
4.	Waghu	20-2-52 to 26-2-52	26-4-52 to 5-5-52
5.	Donde	27-12-51 to 9-1-52	19-5-52 to 22-5-52
6.	Mahalung Padwal	6-12-51 to 26-12-51	23-5-52 to 27-5-52
7.	Nimbut	8-11-51 to 3-12-51	18-4-52 to 24-4-52
8.	Waghapur	16-11-51 to 29-11-51	11-4-52 to 17-4-52

Table 2.2

#### **III. CULTIVATED HOLDING**

(3.1) A Schedule, called the General Schedule, covering certain broad items of information was filled in for all the resident families the selected villages. As a principal classifying items, information was obtained regarding the size of the cultivated holdings of the families concerned and along with the size of the holdings was also obtained the number of their plough cattle. In this chapter, it is proposed to present the related data. Not all the families were, of course, cultivators. In the following table (table 3.1) we give for the selected sight villages what proportion of their families were cultivators and the average size of their cultivated holdings. In the adjoining column is given the average number of plough cattle per cultivator.

Village	Proportion of cultivating families to the total families in the village	Average size of holding in acres per cultivator	Average No. of plough cattle per cultivator
1. Kushegaon	76	15.7	2.4
2. Salumbre	49	14.7	2.4
3. Shindwane	61	18.4	3.3
4. Waghu	80	3.7	1.6
5. Donde	67	5.6	2.2
6. Mahalung Padwal	39	11.2	2.1
7. Nimbut	68	10.1	1.7
8. Waghapur	64	9.8	2.2
District Average	66	11.0	2.3

Table 3.1.

cultivated holdings differs considerably average is, however, greatly affected by there are in the village can or two very 3.2)

(3.2) It is obvious that the average size of big cultivators who pull up the average of the village, without, of course, benefitin different villages. An arithmetic ting, the other cultivators in any manner. A fuller statement of the size of their extreme cases so that a large holding in cultivated holding in different villages one village might not mean more than that might, therefore, be given as under. (table

Table 3.2. Ranges of Cultivated Holdings in Acres in Different Strata of Families in the Selected Villages

Per cent of cultivators having holding larger than	Kushegaon	Salumbre	Shindwane	Waghu	Donde	Mahalung Padwal	Nimbut	Waghapur
10	70.0	70.0	54.0	21.0	40.0	120.0	266.0	121.0
20	35.0	30.0	40.5	7.0	13.0	22.5	20.0	17.0
30	24.0	22.5	25.0	5.0	9.0	18.0	13.0	14.0
40	20.0	14.5	20.0	3.5	6.0	12.0	9.0	10.0
50	15.0	11.0	17.0	3.0	4.0	10.0	6.0	8.5
60	12.0	9.0	13.0	2.0	4.0	8.0	5.0	7.0
70	10.0	7.0	10.0	2.0	3.0	7.0	4.0	6.0
80	8.0	4.5	8.5	2.0	2.0	5.0	3.0	4.0
90	6.0	3.5	6.0	1.0	2.0	4.0	2.0	3.0
100	4.0	2.5	4.0	1.0	1.0	2.0	1.0	2.0

The table reads as follows:- In the village Kushegaon, the largest holdings was 70 acres; 10 per cent of the cultivators had holdings larger than 35 acres; 20 per cent had it larger than 24 acres, etc.

(3.3) The manner in which the villages were selected makes a simple average of any items of the 1,757 families interviewed, not particularly appropriate as a

district average. It will be remembered that in selecting the villages, they were given chance proportional to their population, which means that the larger village were given a greater chance of being selected. This given an over representation to larger villages. In the case of this district, the sample seems to be fortunate and the villages are equally distributed in two groups. Four of the

villages have a population of about 1000 each and the other four have above 1,300 each. Another bias is that while in the sample we have four villages with societies and four villages without societies, in the district, the number of villages with and without societies is not equal. According to our information, the number of villages with societies in the district was 285 and their 1941 population was 4,22,903. On the other hand the number of villages without societies was 1,234 and their 1941 population was 6,76,621. In order to obtain an appropriate district average, therefore, it is necessary to "weight" the society-village and the non-society-village averages in proportion to the population staying in such villages. The appropriate weights in the present case are 0.48068 and 0.76932, respectively. The proportion of the cultivating families and the average size of their cultivating holding appearing in table 3.3 are so derived. Henceforward all the district averages and percentages based on the General Schedule data have been similarly obtained after appropriate "weighting".

(3.4) Thus considering the district as a whole, about 66 per cent of the families were found to be cultivators. The average size of the cultivated holding was about 11 acres, which of course included both the owned and tenanted lands cultivated

by the family. On an average, each cultivator possessed about 2 to 3 plough cattle, which were mostly bullocks. The ratio of the cultivated area to plough cattle, namely, about five acres per animal is nearer to the district figure given earlier.

(3.5) The range of variation in the size of cultivated holdings of different cultivators might be indicated by such considerations as under. As is done in table 3.2 we might arrange the cultivators in each village by the size of their cultivated holdings in a descending order. When they are so arranged and the first ten per cent, that is the ten per cent biggest cultivators in each of the villages, are considered together, their average cultivated holdings turns to be as much as 36 acres. The ten per cent second biggest cultivators in different villages grouped together give an average cultivated holding of 19 acres, and for the ten per cent third biggest, the average is 14 acres. Compared to the corresponding average holdings in other parts of the country, the cultivated holdings in this district appear to be smaller in size. At the extreme the ten per cent smallest cultivators in different villages when grouped together give an average of only one acre of cultivated holding which is nearly one tenth of overall average 11 acres. The ten per cent cultivators immediately above this group have an average of only two

acres and the next group of ten per cent cultivated holdings in the ten group of has an average of four acres. The average cultivators are shown in table 3.3.

Stratum of families	No. of fami- lies	Average size of cultivated hold- ings (acres)	Percent of total land cultivated by cultivators in this group	Percent of culti- vators owning plough cattle	Per cent of total plough cattle owned by the cul- tivators in this group
Decile					
Ι	65	36	32.2	98	20.0
II	70	19	18.3	98	17.0
III	67	14	12.9	88	10.8
IV	70	10	9.9	86	11.8
V	67	8	7.7	89	10.3
VI	67	7	6.4	72	7.4
VII	67	5	5.0	83	8.8
VIII	63	4	3.6	71	6.0
IX	62	2	2.5	52	4.2
Х	62	1	1.5	50	3.7
Total cultivating families	660	11	98.8	79	99.3
Total non- cultivating families	340	45	1.2	1	0.7

Table 3.3. Average cultivated holdings in the ten groups of cultivators.

(3.6) The inequalities in the distribution of the cultivated holdings can be brought out in yet another manner and perhaps more strikingly. Considering the group of the ten per cent biggest cultivators described above and which has an average of 36 acres of cultivated holding, it works out that the cultivators in this group cultivate nearly on-third of the total cultivated land. Similarly, the cultivators in the ten per cent second biggest cultivators having an average of 19 acres cultivate

about one-fifth of the total cultivated land. Thus the two groups together, which form only the first twenty per cent cultivate about fifty per cent of half of the total cultivated land. At the other extreme, the 20 per cent smallest cultivators have only four per cent of the total cultivated land. In the fourth column of table 3.3 are shown what percentage of the total land is cultivated by the cultivators in each group.

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(3.7) Perhaps a more simple summing up of the situation would be as follows:- If we arrange all the cultivators in a village by the size of their cultivated holdings in descending order and divide the list into three equal divisions, then it works out that on an average, the first division forming the one third biggest cultivators command nearly two-thirds of the cultivated land, while the last division, forming the one-third smallest cultivators command only about nine per cent of the total cultivated land.

(3.8) It should be noted that this form of analysis does not bring out fully the extent of inequalities that exist. For instance, the first division above, does not consist of the one-third cultivators who are the biggest in the district; they are one-third who are biggest in their own villages and they command two-thirds of the total cultivated land. It is obvious, therefore, that if we could group together the one-third cultivators who are biggest in the district, they would command considerably more than two-third of the total cultivated land.

(3.9) The position regarding the variation in the ownership of plough cattle, namely, bullocks, is naturally very similar, though a little less extreme. The relevant data are shown in the last column of table 3.3. For instance, the twenty per cent biggest cultivators who command 50 per cent of the total cultivated land. possess only about 37 per cent of the total plough cattle. On the other hand, the twenty percent smallest cultivators who cultivate only four per cent of the total cultivated land possess about eight per cent of the total plough cattle. Thus, the variations in the ownership of the plough cattle are seen to follow the case pattern though the variations are little less extreme. A part of the inequalities of distribution of the plough cattle are found in the extreme circumstances that some of the cultivators do not possess any plough cattle. The per cent of cultivators owning plough cattle in each group is shown in the last but one column of table 3.3. Thus in the district as a whole 79 per cent of the cultivators are seen to possess plough cattle. This percentage is higher among the bigger cultivators; among the first two groups it is 98 per cent; in the next three groups it is nearly 90 per cent. But among he smaller cultivators the percentage is smaller, until in the last group comprising of the smallest ten per cent cultivators only 50 per cent owned plough cattle. The remaining must largely depend upon hired plough cattle.

#### IV. INVESTMENT EXPENDITURE AND SOURCES OF FINANCE

(4.1) In the General Schedule which was filled in for all the resident families in the selected villages, an attempt was made to inquire in to the annual expenditure of families on a number of specific items. Most of these items were in the nature of capital investment both in agriculture and non-agriculture business and also in financial assets. A few items of family expenditure were also included; they covered what might be called expenditure on durable consumer goods as also on certain items of social expenditure. A few items or ordinary family expenditure such as medicine, education and clothing were also included, but major items of family expenditure, i.e., food, etc., were specifically omitted.

(4.2) The total annual expenditure reported on these items came to about Rs. 551/- per family and between principal categories it was distributed as under. (table 4.1)

(4.3) As was pointed out earlier, about 66 per cent of the families were cultivators. Nevertheless, of the total expenditure reported, 85 per cent was reported by those families. Almost the entire capital expenditure in agriculture should, of course, be reported by the cultivating families only; and it is not surprising that this was so. A few cases where the noncultivating families reported have expenditure on items in this category are explained by the fact that come of the families, though nor cultivators, were land owners and in other cases, purchases of livestock which was classified as an items of capital expenditure in agriculture was not indeed so. However, when we the reported capital expenditure in non-farm business, we should normally expect a proportionately larger expenditure among the non-cultivating families than among the cultivating families. That this was not in fact so, is perhaps a little surprising. 60 per cent of such expenditure was reported by the cultivating families which formed about 66 per cent of the total families. This suggests that even among the artisan classes, the nonfarm business is often combined with cultivation and that there are only a few cases of families which are purely engaged in non-farm business. The position in regard to other items of expenditure is very similar; thus 89 per cent of the additions to the financial assets, 81 per cent of the durable consumer expenditure which was mostly construction and repair of residential houses, 74 per cent of the expenditure on marriages and other ceremonies and 82 per cent of the expenditure on medicine, education and clothing was reported by the cultivating families who farmed about 66 per cent of all families.

# Table 4.1. For family AnnualExpenditure in Rupees

1.	Capital investment in Agriculture	176
2.	Capital investment in Non-Agricultural business	8
3.	Additions to financial assets	4
4.	Repayment of debt	56
5.	Durable consumer expenditure	22
6.	Marriage, Death and Other ceremonies	47
7.	Medicine, education, clothing and litigation	238
	Total	551

(4.4) As already stated the annual expenditure on items in the nature of capital investment in agriculture was about Rs. 176 per family. However, as was to be expected, such expenditure was almost entirely reported by the cultivating families. These formed only about 66 per cent of all the families so that if we relate the capital investment in agriculture to only the cultivating families, the

per family expenditure would be naturally larger. It actually turns out to be Rs. 257 per family. There are two observations to be made in this connection. Firstly not all the cultivators would annually incur expenditure in the nature of capital investment. For instance about fifty per cent of the cultivators reported such expenditure. Secondly, such expenditure would not be incurred equally in all strata of cultivators. We would normally expect proportionately large investment expenditure among bigger cultivators than among the smaller ones, both because proportionately large numbers among them would incur such expenditure and when they did, they would do it in larger amounts. These points are briefly brought out in the following table:-

Cultivators arranged by the size of the cultivating holding in village in descending order		Percent of cultivators reporting expenditure	Expenditure per reporting cultivator in Rupees	Expenditure incurred by this group as percentage of total expenditure incurred by all cultivators
First	10%	70	1204	33
Second	10%	53	693	15
Third	10%	68	521	14
Fourth	10%	56	473	11
Fifth	10%	36	367	5
Sixth	10%	52	314	7
Seventh	10%	43	300	5
Eighth	10%	38	191	3
Ninth	10%	32	321	4
Tenth	10%	37	236	3

**Table 4.2 Capital Investment in Agriculture** 

(4.5) Thus only about half of the cultivating families reported capital investment in agriculture during the year, with an average expenditure of about Rs. 524. The first group consist of the 10 per cent biggest cultivators from each village while the last group consists of the ten per cent smallest cultivators in each village. Other groups are similarly constituted. In the first group of cultivators about 70 per cent of the cultivators reported an average of Rs. 1204 of capital expenditure in agriculture; in the last group of the ten per cent smallest cultivators, on the other hand, only 37 per cent of the cultivators reported this expenditure and that was only Rs. 236 per reporting family. The proportion of families reporting investment expenditure as we move from the biggest to the smallest cultivators goes on decreasing. Amount of investment expenditure shows, more or less, the same trend.

(4.6) The main items or capital investment in agriculture were purchases of land, livestock and implements and also some miscellaneous types of land improvement including reclamation and bunding of land, digging, repair and development of wells and other irrigation sources. In the following table (table 4.3) is shown the comparative importance of the different items of capital investment in agriculture.

Item	Expenditure on the item as % to the total capital investment in agriculture by cultivators
Purchase of land	23
Purchase of livestock	26
Purchase of implements	11
Reclamation of land	4
Bunding and other land	10
Well digging repairs, etc.	13
Development of other irrigation sources	6
Other miscellaneous land improvements	7
Total	100

Table 4.3. Table Showing Comparative Importances of Different items of Capital Investment in Agriculture

(4.7) The extent to which expenditure on different items was reported and the magnitude of the reported expenditure might be judged from the following table (table 4.4) where we show the proportion of all cultivators who reported expenditure incurred by each such family. Only a per cent of the cultivators reported purchases of land during the year at an average expenditure of Rs. 753 per reporting family. Land improvement seems to be the most frequent items of expenditure. Among the items of expenditure on account of land improvement, will digging and repairs is the item on which largest expenditure was reported. It was Rs. 472 per reporting

cultivator. However, the expenditure suggests that most of it was on repairs of wells as construction of wells requires a bigger expenditure. Next in importance is the expenditure on bunding and land improvement. Eight per cent of the cultivators reported Rs. 347 per reporting cultivator on this account. 24 per cent of the cultivators reported an expenditure Rs. 107 per reporting cultivator. Miscellaneous land improvement which consist of laying of new orchards, construction of cattle-sheds, etc., were reported by only six per cent of the total cultivators.

Table 4.4. Capital Investment in Agriculture by Cultivators

Item	% of cultivators reporting expenditure on this item	Average expenditure per reporting family
Purchase of land	8	753
Purchase of livestock	26	263
Purchase of implements	8	355
Reclamation of land	3	304
Bunding and other land improvements	8	347
Well digging repairs, etc.	7	472
Development of other	15	107
irrigation sources		
Other miscellaneous land improvements	6	294

(4.8) for a group of families while interpreting purchases of land, livestock and instance as items of capital investment, the sales by the same group of families of the respective items should obviously be taken account of. For instance, considering all families together, if all sales and purchases of land were to take place, only between cultivators, no net investment by way of purchase of land by cultivators could be expected. In fact, however, some sales and purchases take place between cultivating and non-cultivating families. To that extent, the sales and purchases of land by cultivators would not be equal. If cultivators purchased more land from non-cultivators than they sold to them, it would result in more land coming in to the hands of the cultivators and consequently what might be termed a not investment by cultivator in purchases of land. The position would be otherwise if the cultivators sold more land to noncultivators than they purchased from them. The purchases of land by cultivators are more than the reported sales of land thereby suggesting a net investment. The sales of land by cultivators form 74 per cent of their purchases so that the balance of 26 per cent might be regarded as not investment by cultivators in land. However as between different strata of cultivators, there is no clear indication that either the bigger or the smaller cultivators are making net purchases of land. In the are following table are shown the purchases and sales of land by different strata of cultivators:-

Sti	atum	Purchases of land value in Rupees	Sales of land value in Rupees	Sale as per cent of purchase
First	10%	6,720	3,590	53
Second	10%	10,230	1,230	12
Third	10%	9,310	490	5
Fourth	10%	2,090	6,310	302
Fifth	10%	1,970	4,680	238
Sixth	10%	1,030	1,130	110
Seventh	10%	4,820	3,890	81
Eighth	10%	670	3,230	482
Ninth	10%	1,230	3,390	276
Tenth	10%	330	370	112
Total for all cul	tivators	38,400	28,310	74

Table 4.5. Purchases and Sales of land by Different strata of cultivators

(4.9) The position regarding the purchases and sales of livestock is some what different. In the first instance, the sales are not relatively as numerous though their value forms nearly 63 per cent of purchases. Not all the sales of livestock could be considered as liquidation of capital assets. Sale of sheep and goat as also of young stock of plough and milch cattle are often in the nature of sale of produce rather than liquidation of assets. As between different strata of cultivators, there is little regularity in the reported sales and purchases of livestock and the reported excess of purchases over sales and is not confined to either the bigger or the smaller cultivators. In the following table (table 4.6) are shown the purchases and sales of livestock by different strata of cultivators.

(4.10) The values of sales of livestock is nearly there tines the purchases of livestock in the case of non-cultivators suggesting that there are in this district families engaged in the rearing and marketing of livestock.

(4.11) In the following table (table 4.7) are shown the details of expenditure on purchases of implements As will appear, a large part of the expenditure on implements and machinery was reported by the bigger cultivators who reported 87 per cent of it. The ten per cent biggest cultivators reported about 60 per cent of such expenses. Taking into consideration their holdings which account for nearly 32 per cent of the total cultivated holding,

Stra	tum	Purchases of livestock value in Rupees	Sales of livestock value in Rupees	Sale as per cent of purchase
First	10%	5,810	5,700	98
Second	10%	3,990	2,980	75
Third	10%	6,250	2,980	48
Fourth	10%	9,650	2,550	26
Fifth	10%	2,510	2,170	86
Sixth	10%	6,310	2,850	45
Seventh	10%	2,320	3,940	170
Eighth	10%	2,550	2,840	111
Ninth	10%	2,170	1,650	76
Tenth	10%	3,400	880	26
Total for all cultiv	vators	45,040	28,540	63

Table 4.6. Purchases and Sales of Livestock by Different Strata	of Cultivators.

Table 4.7. Purchases of im	plements and Machiner	y om Different Strata o	f Cultivators

	Strat	ta	Percent of cultivators reporting expenditure	Expenditure per reporting cultivator in Rupees	Expenditure incurred by this group as percent of total expenditure incurred by all cultivators
Fir	st	10%	20	808	58.2
Sec	cond	10%	13	233	11.6
Thi	ird	10%	9	185	6.1
For	urth	10%	8	167	5.5
Fif	th	10%	7	200	5.5
Six	th	10%	9	262	8.7
Sev	venth	10%	4	57	0.9
Eig	ghth	10%	1.5	100	0.5
Nir	nth	10%	1.5	340	1.9
Tei	nth	10%	1.5	200	1.1
All Cultiv	ators		8	355	100.00

the expenditure on implements and machinery appears to be rather high. No details are available regarding the type of the machinery purchased. Taking in to account the amount spent on this item per family, there is some indication of additions of improved machinery. The average amount of expenditure on this item per family incurring such expenditure was about Rs. 360 and the same in the group of biggest cultivators was about Rs. 860. This disparity perhaps supports the above suggestion. Sale of implements by cultivators were few and negligible so that the expenditure might be regarded as net.

(4.12) If purchases of land, livestock and implements are netted for respective sales, the relative importance of the different items naturally looks very different from the one earlier shown. This is shown in the table below. (table 4.8)

(4.13) Thus there appears to be a major share of investment on account of expenditure on land improvement. The investment on account of land is small and that on account of livestock and implements also form a small proportion as compared with that on account of land improvement. (4.14) capital investment in non-farm business was reported by less than one per cent of all families and average expenditure incurred by these families on such items was about Rs. 1500 per reporting cultivator and Rs. 240 per reporting non-cultivator. No further details of this expenditure are available.

 Table 4.8. Capital Investment in Agriculture - Net

 of Disinvestment through sales

Item	Percentage to Total
Purchase of land net of sales	9
Purchase of livestock net of sales	15
Purchase of implements - net of sales	16
Reclamation of land	6
Bunding and other land	16
improvements	
Well digging repairs, etc.	19
Development of other irrigation sources	9
Other miscellaneous land	10
improvements	
Total	100

(4.15) Expenditure resulting in addition to financial assets of the families was reported by a few families, only about four per cent of the total, and the average amount incurred by them was only Rs. 91. Among the cultivating families the proportion of families reporting such expenditure was only slightly higher, only five per cent and the average expenditure was almost the same. A major part of this addition to the financial

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assets was made by the ten per cent largest cultivators who reported about 64 per cent of the additions by the cultivating families. Additions to financial assets were not considerable on other strata but surprisingly the ten per cent smallest cultivators accounted for about, ten per cent of the total additions to financial assets by the cultivators. Non-cultivators reported about 21 per cent of the total addition to the financial assets. Most of such addition was in the form of fresh deposits in post office savings bank account and of co-operative societies. Deposits with co-operative societies accounted for 55 per cent of the total additions to financial assets.

(4.16) Additions to financial assets by the cultivators were mainly in the form of the shares of the co-operative societies, being about 63 per cent of the total additions to financial assets. No additions to financial assets in the form of purchases of National Savings Certificates or treasury bonds were reported. A negligible amount of sale of shares was reported so that the whole of the expenditure on this item might be regarded as investment. Expenditure on purchases of shares of co-operative societies appears in all strata of families as it is obligatory to purchases shares at the time of borrowing while additions to deposits appear only in the case of the ten per cent largest cultivators.

(4.17) Finally, we might examine the expenditure on such items as construction and repair of residential houses and other buildings, and purchases of household utensils, furniture, etc. These items can be considered as expenditure on consumer capital or durable goods. As already noted, the average expenditure per family on these items was Rs. 21. However, only about eight per cent of all families reported this expenditure, the average amount incurred by these families being Rs. 254. In the case of the cultivating families the average is Rs. 270 while the average for the non-cultivating families is Rs. 210. As was found in the case of other items of expenditure, cultivating families who are nearly 66 per cent of the total families accounted for about 80 per cent of expenditure on this items. As for the cultivating families, about 27 per cent of the total expenditure of cultivating families was reported by ten per cent largest cultivators. The next thirty per cent largest cultivators reported about 39 per cent of it. The remaining 34 per cent of it was reported by other cultivators. Their share in the total went on decreasing according to the size of their holdings.

(4.18) Most of the expenditure under this item was on construction and repair of residential and other buildings and this accounted for 92 per cent of the total expenditure. The remaining 8 per cent of
it was incurred for the purchases of utensils and furniture. The reported sales of houses and buildings or of utensils formed only a negligible amount and as such expenditure on this item might be regarded as not investment, net not of course of depreciation.

(4.19) We shall now proceed to examine the sources from where these various items of capital expenditure are financed. The principal sources of finance are usually current income, post savings, sale or liquidation of assets and finally borrowing. Past savings are often difficult to distinguish from current income as the flow of current income is not regular in agricultural occupation. They were also not defined in sufficient detail to distinguish them from current incomes even as a matter of technical distinction. We do not, therefore, propose to distinguish them in the following.

Item of Expenditure	Per cent of current income and past saving	Total financed by		Total
		Sale of assets	Borrowing	
Purchase of land	86	5	9	100
Purchase of livestock	39	16	45	100
Purchase of implements	50	16	34	100
Reclamation of land	54	3	43	100
Bunding and other land improvements	31	-	69	100
Well digging repairs, etc.	50	2	48	100
Development of other irrigation sources	76	2	22	100
Other miscellaneous land	79	-	21	100
improvements				
Total	76	6	18	100

Table 4.9. Sources of Financing Different items of Capital Expenditure in Agriculture

the different sources of financing different items of capital investment in agriexpenditure in agriculture. Of the total

(4.20) In the table (table 4.9) are shown reported to be financed by either current income or past savings, 6 per cent by sale of assets and the remaining 18 per cent culture. We shall begin with capital by resort to borrowing. About 86 per cent of the expenditure on the purchase of land expenditure on this item, 76 per cent was was met from current income or past

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savings while in the case of purchases of livestock and implements the proportion was 39 per cent and 50 per cent, respectively. Borrowings to meet the above there items of capital investment in agriculture were 9 per cent, 45 per cent and 34 per cent, respectively. Need for the purchases of livestock and machinery is seasonal or accidental and it is but natural that a fair portion of it is financed by recourse borrowing. The small percentage of borrowing for the purchase of land is notable and indicates the preference of the cultivators for the land a form of investment of their savings. The part played by the sale of assets in financing these items is 5 per cent in the case of purchases of land and 16 per cent each in the case of purchases of livestock and implements.

(4.21) We have already noted that about 80 per cent of the expenditure on nonfarm business was reported by the cultivating families. However, more than 72 per cent of the total non-farm business expenditure is reported to be financed by borrowing and the remaining 16 per cent from the current income, past savings, etc. This high rate of borrowing reflects upon the lack of funds with the cultivators which they could use for purposes other than agriculture. (4.22) As regards the expenditure an additions to financial assets, most of it was financed from current income or past savings as was to be expected. However, about 31 per cent of the expenditure on the purchases of shares of co-operative societies, etc., was reported to have been met by borrowing. It is clear, therefore, that to this extent the purchases of shares of cooperative societies do not represent forms of savings and investment, they are only procedures necessary to qualify the persons for borrowing from the societies.

(4.23) As regards the expenditure on repair and construction of houses and buildings, about 21 per cent of it was reported to have been met by borrowing and the rest from the current income of past savings.

(4.24) only 2 per cent of all the families reported expenditure on death ceremonies. The average expenditure was Rs. 131 per cultivating family. The reported expenditure on this item by noncultivating families was about Rs. 160. About 20 per cent of such expenditure was financed by borrowing and the rest from current income or past savings. The proportion of borrowing in the total expenditure seems to be reasonable as this is an accidental expenditure and is very likely to be met by borrowing.

(4.25) Average expenditure per family on account of marriage ceremonies was about Rs. 44. But only eight per cent of all families reported such expenditure as such the average for reporting family was about Rs. 527. The expenditure on this items per family decrease from the bigger cultivators to the smaller cultivators. About 51 per cent of such expenditure was met from the current income or past savings, about 15 per cent from the sale of assets and the rest by borrowing. Comparatively higher percentage in this particular item of the sale of assets for meeting the expenditure suggests that the cultivators who could not manage to borrow, or in whose case the expenditure was out of their budget had to sell their assets to keep their status in the society.

(4.26) Large expenditure has been reported on some other items of family expenditure. The per family expenditure on different items included in the questionnaire was as under:-

Table 4.10.

Item		Per family expenditure in Rs.	
Medicine Education Clothing		13 7 201	
	Total	238	

Of these items, expenditure on medicine and litigation involved borrowing to the extent of 21 per cent and 31 per cent, respectively. Education and clothing are necessities and the expenditure on these items is usually spread over the year. Hence, there is a very little scope for borrowing for meeting the expenses. Hardly one per cent of the total expenditure on these two items was met by borrowing. Clothing, however, involves sizeable expenditure during marriage and other ceremonies and there is a likelihood of some borrowing having taken place. But this might have been reported under the total expenditure on marriage.

## V. BORROWING AND INDEBTEDNESS

(5.1) we now proceed to examine the borrowings during the year. The average comes to Rs. 140 per family. However, only 22 per cent of the total families had reported borrowing during the year and as such the average per reporting family was Rs. 645. We have earlier examined some of the occasions and purposes for which families borrowed and the extent to which they did so on these accounts. Two important purposes for which borrowing takes place were then left out of consideration, nearly current farm and family expenditure. Of the total reported borrowing by the cultivators, 43 per cent was for capital investment in agriculture, about 27 per cent was borrowed for current farm expenses and about 14 per cent

was for family expenditure. The principle items of capital expenditure in agriculture for which borrowing takes place and the relative share of those items were as under:- (table 5.1)

(5.2) Among the items of current farm expenses for which borrowing takes place, the most important items are the purchases of seed and nature which account for more than 27 per cent each of the borrowing on this account. Other items and their relative shares were as under (table 5.2)

Item	Percentage of borrowing for capital investment in agriculture	
Purchase of land	6.1	
Reclamation of Land	5.6	
Bunding and other land improvements	21.0	
Well-digging, repairs, etc.	18.0	
Development of other irrigation	0.2	
sources	3.6	
Other land improvements	34.7	
Purchase of livestock	10.8	
Purchase of implements		

Table 5.1

# Table 5.2. Percentage of borrowing for current farm expenditure

Purchase of manure Payment of wages	27
Other	37
Total	100

(5.3) Of the borrowing to meet the family expenditure, the most important item of borrowing is as earlier indicated, the marriage ceremonies which accounts for 58 per cent of the borrowing on this account. The most important items and their relative shares were as under:-

Table 5.
----------

Item	Percentage of borrowing family expenditure
Construction and repair of residential and other buildings	18
Marriage and Death ceremonies	61
Other expenditure	21
	100

(5.4) The incidence and the extent of the borrowing for different purposes is different for different strata as it is different between the cultivating and noncultivating families. For instance while 28 per cent of the cultivating families reported borrowing during the year, only 9 per cent from the non- cultivating families reported borrowing. A difference is also noted in the average size of the borrowing of these two categories. In the former case, the average was more than Rs. 681 while in the latter it was only about Rs. 417. The purposes for which borrowing takes place were naturally different in the above two cases; in the case of the cultivating families only 27 per cent of the borrowings were for meeting family expenditure while in the

as high as 78 per cent. It is true that a large number of the non-cultivating families would be landless labour and hence poorer than the cultivating families. It is not, however, on that account that the family expenditure accounts for so large a proportion of the borrowing by the non-cultivating families. The other two important purposes for which cultivating families borrow are the capital and current farm expenditure and these simply do not exist for the non-cultivating families; it is for this reason that family expenditure appears so large an item among the borrowings of the noncultivating families. There is no indication, however, that the extent of borrowing on account of family expenditure is any less than among the non-cultivating families. Thus, as noted above, the borrowing per borrowing cultivator was more than Rs. 680, more than one-fourth of which was for meeting family expenditure. This gives an average of about Rs. 180 per borrowing cultivator for meeting family expenditure. On the other hand, the borrowing non-cultivating families borrowed an average of Rs. 417 only, about threefourths of which were for meeting family expenditure. If we now remember that the proportion among the cultivators who borrowed during the year is three times as high as that among the non-cultivating

case of the non-cultivating families it was needs of the cultivators or at any rate, their effective demand to meet their family expenditure are much higher than those of the non-cultivators.

(5.5) This is also true as between different strata of cultivators. In this following table (table 5.4) are shown details of borrowing by cultivators in different strata of families. Thus, if we consider the ten per cent biggest cultivators, both the incidence and the extent of borrowing among them are much larger than among the cultivators as a whole. In this group of biggest cultivators about 46 per cent of the cultivators reported borrowing during the year as against the 28 per cent of all cultivators. Taking all cultivators together, the average amount borrowed by the borrowing families works out to be Rs. 681 per family. In the group of the ten per cent biggest cultivators this average is Rs. 1,482. A large part of this borrowing naturally takes place to meet capital and current farm expenditure; about 38 per cent and 34 per cent, respectively of the total. Only 28 per cent of the borrowings are to meet the family expenditure, but even that gives and average of more than Rs. 415 per borrowing family which is much larger than Rs. 193 for all cultivating families and a little more that for the non-cultivating families. It should be noted further that these averages are per borrowing family families, it would be clear that the credit in different groups and that while only

nine per cent of the non-cultivating families and 28 per cent of all cultivating families borrowed during the year, as many as 48 per cent of the big cultivators borrowed, so that if the comparison were to be made on the basis of per family in the different groups, it would appear that

in order to meet the family expenditure, the big cultivators borrowed on an average more than four times the borrowings of an average cultivator and nearly six times as much as did an average noncultivating family.

Stratum		Percent of	Amount	Perce	Percent of total borrowings		
		borrowing borrowed - families per borrowing family	for capital farm and non-farm expenditure	for current farm expenditure	for family and other expenditure		
First	10%	46	1482	38	34	28	
Second	10%	23	928	41	35	24	
Third	10%	31	546	48	25	27	
Fourth	10%	31	713	55	19	26	
Fifth	10%	22	536	40	35	25	
Sixth	10%	27	772	66	12	22	
Seventh	10%	25	352	33	26	41	
Eighth	10%	25	259	60	19	21	
Ninth	10%	26	317	49	14	37	
Tenth	10%	26	242	51	21	28	
All cultiva	ators	28	681	46	27	27	
Non-culti	vators	9	417	13		78	
All families		22	645	43	9	32	

Table 5.4. Borrowing during the year by cultivators in different strata and by non-cultivators

(5.6) We could illustrate the same point during the year, which is a little less than by considering another group of cultivators. Consider, for instance, the twenty per cent smallest cultivators. These ilies. The average amount borrowed by naturally come closest to the non- these borrowing families is Rs. 279, cultivating families. In this group about which is again smaller than the average one-fourth of all families borrowed for the cultivating families. In this group,

average for all cultivators but more than the average for the non-cultivating famabout 64 per cent of the total was borrowed for capital and current farm expenditure. The remaining which comes to about Rs. 100 per borrowing family was for meeting family expenditure.

(5.7) The conclusion, is therefore, inescapable; as we pass from the noncultivating to the cultivating families and within the cultivating families from the smaller cultivators to the bigger cultivators, the incidence, that is the proportion of families who borrow and the extent, that is the average amount borrowed, both increase. Part of this increased borrowing among the better off families is explained by their credit requirements to meet the capital and current farm expenditure, but that does not explain the whole of it. Their borrowings on account of family expenditure also are substantially larger than those of the smaller cultivators and those of the smaller cultivators are in their turn larger than those of the non-cultivating families.

(5.8) The amounts borrowed for meeting the capital and current farm expenditure might be related to the cultivated holdings of the families. This is done in the following table:-

 Table 5.5 Borrowing for capital and current farm expenditure per acre of cultivated holding in different strata of cultivators.

Stratun	n	Average cultivated holding in acres	Borrowing for capital farm expenditure per acre Rs.	Borrowing for current farm expenditure per acre Rs.
First	10%	36	7.1	6.5
Second	10%	19	4.6	3.9
Third	10%	14	5.8	3.0
Fourth	10%	10	9.1	4.0
Fifth	10%	8	5.6	5.0
Sixth	10%	7	13.7	3.4
Seventh	10%	5	5.4	4.2
Eighth	10%	4	9.5	3.0
Ninth	10%	2	12.2	3.9
Tenth	10%	1	17.9	7.5
All Cultiv	ators	11	7.7	4.9

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average amount borrowed for capital farm expenditure, works out at Rs. 8 per acre of cultivated holding and the amount borrowed for meeting the current farm expenditure at Rs. 5 per acre of holding. Considering the ten per cent biggest cultivators, their borrowing on capital account is about Rs. 5 per acre of the cultivated holdings, the borrowing on current account is Rs. 7. As we pass from the bigger cultivators to the smaller cultivators, borrowing for capital investment in agriculture is found to increase. In the group of the 10 per cent smallest cultivators it is as high as Rs. 18 per acre for capital expenditure on farm and Rs. 7.5 for current farm expenditure. Thus the smaller cultivators on a per acre basis of their holdings seem to borrow more for capital expenditure than do the bigger cultivators.

(5.9) Wherefrom do these families raise all this credit is an important point to be considered now. In the following table (table 5.6) we give the relative shares of different agencies in supplying the credit.

(5.10) Thus the Government, Cooperative Societies and the Banks together supply almost one-third of the total credit. The purposes for which finance from those institution available are naturally restricted. Thus, the finance from Government is usually available

Considering all the families together, the only for capital investment in agriculture. It was about 89 per cent for capital investment in agriculture and about 5 per cent for current farm expenses and a balance of six per cent being equally made available for family expenditure and other expenditure. As regards the co-operative finance, it was available mainly for two purposes- Capital investment in agriculture and current farm expenses. About 39 and 47 per cent of the total cooperative finance was for these two purposes, respectively. Only about eight per cent was available for family expenditure and the balance for other purposes. 33 per cent of the finance from the banks was for capital investment in agriculture and 47 per cent for current farm expenses. Only 7 per cent was available for family expenditure and the balance for other purposes. In table 5.7, we show the distribution by purposes for which credit is available from different agencies.

Table 5.6.

Creditor	Percent of total borrowing
Government	10
Co-operative Societies	20
Banks	3
Traders and Commission Agents	9
Private Moneylenders	29
Agricultural Moneylenders	4
Relatives	16
Zamindars	1
More than one creditor	8
Total	100

Creditor	Percent of total credit for			
	Capital farm and non-farm expenditure	Current farm and farm expenditure	Family and other expenditure	
Government	88.7	5.0	6.3	
Co-operative Societies	41.3	47.1	13.6	
Banks	32.5	47.2	20.3	
Traders and Commission Agents	32.5	60.7	6.8	
Private Moneylenders	41.9	23.8	34.3	
Agricultural Moneylenders	67.9	0.8	31.3	
Relatives	42.0	11.7	46.3	
Zamindars	24.0	24.8	51.2	

Table 5.7.

expenditure, the main dependence is on private agencies, such as traders and commission agents, professional and agricultural money-lenders and relatives of the borrower. These agencies supply more than half of the total credit and more than 24 per cent of their credit is for financing the current family expenditure of the borrower. About 17 per cent of the total credit is for meeting the current family expenditure and more than 80 per cent of it comes from private agencies. The hold of these agencies is naturally firm upon the poorer classes. While they supply nearly fifty eight per cent of the credit raised by the cultivators, they supply an almost equal proportion in the case of non-cultivators. If we consider the borrowings of the 20 per cent smallest taken of the repayment of loan made

(5.11) For credit to meet the family to them is supplied by private agencies. Among the private agencies, it is the private moneylender who is active amongst the non-cultivators and small cultivators and accounts for more than 44 per cent of the credit received by them. The canvass of the co-operative societies is considerably restricted to the comparatively bigger cultivators. Thus, of the total credit advanced by co-operative societies, more than 38 per cent goes to the ten per cent biggest cultivators, more than 27 per cent goes to the next 20 per cent biggest cultivators; on the other hand 20 per cent smallest cultivators receive only four per cent of it.

(5.12) Along with the borrowings made during the year, account should also be cultivators, about 75 per cent of the credit during the year. In the following table

(table 5.8) we show the position regard- year and debt outstanding at the end of ing borrowing and repayment during the the year in different strata of families.

Table 5.8. Borrowing and Repayment during the year and debt outstanding at the end of the year in
different strata of families.

Stratum	l	Borrowing per family in Rs.	Repayment per family in Rupees	Outstanding indebtedness per family in Rs.
First	10%	684	317	1097
Second	10%	212	82	570
Third	10%	171	82	357
Fourth	10%	224	61	499
Fifth	10%	120	51	263
Sixth	10%	207	43	387
Seventh	10%	89	55	376
Eighth	10%	66	15	261
Ninth	10%	82	36	299
Tenth	10%	62	16	164
All Cultiva	ators	193	76	430
Non-Cultiv	vators	37	16	130
All familie	es	140	55	328

increased indebtedness of the families, beginning of the year was nearly Rs. we shall expect that there would be a 244/-. Thus the net increase substantial amount of repayment of indebtedness during the year is seen to be loans, approximately as much as fresh about 34/- per cent. The agricultural borrowings during the year. While the fresh borrowings during the year amounted to Rs. 140/- per family, the average repayments amounted to Rs. 56/only. There has, therefore, been a net increase of Rs. 84/- per family in the average indebtedness of the families. The average indebtedness at the end or the (5.13) As already pointed out, the average year was about Rs. 328/- per family. The indebtedness at the end of the year was net increase of Rs. 84/- during the year Rs. 328/- per family. Nearly fifty per cent

Under circumstances not loading to means that the indebtedness at the in season was not bas and unless the repayments were under-reported, the net increase in indebtedness might be explained as due to the fact that as much as 40 per cent of the borrowing during the year was for capital expenditure.

of all families were in debt and their average debt was Rs. 667/- per indebted family. The incidence and the extent of indebtedness varied considerably both as and between the cultivators noncultivators as also within the different strata of cultivators. In the following table (table 5.9) is shown the position in different strata of families. Among the non-cultivators only about 29 per cent were in debt with an average of Rs. 443 per reporting family. Among the cultivators about sixty per cent of the total cultivators were in debt and the average debt per reporting cultivator amounted to about Rs. 725.

 
 Table 5.9. Percent of indebted families and average indebtedness per indebted family

Stratum	Percent of indebted families	Average debt per indebted family in Rupees
Ι	72	1,516
II	51	1,108
III	63	569
IV	61	812
V	64	410
VI	51	763
VII	76	494
VIII	44	588
IX	64	463
Х	45	363
All cultivators	59	724
Non-cultivators	29	443
All families	49	667

Both the incidence and extent of borrowing was higher in bigger cultivators than among the smaller cultivators. Thus among the ten per cent biggest cultivators, about two thirds were in debt with an average debt of Rs. 1,516 per reporting family. In the second group of ten per cent bigger cultivators, nearly half of then were in debt with an average debt of Rs. 1,108. If we combine these two groups we find that 20 per cent of the total cultivators were in debt to the extent of 40 per cent of the total debt. On the other hand the share of the 20 per cent smallest cultivators in total indebtedness of cultivators was about 10 per cent. In this group, 55 per cent of the persons were in debt with a debt of Rs 422 per indebtedness family.

(5.14) we shall, therefore, conclude by pointing out that borrowing and indebtedness are not phenomena either confined or even more prevalent among the smaller cultivators and landless labour. They are in fact, more extensive among the bigger cultivators. Smaller cultivators and landless labour borrow less and are indebtedness to a smaller extent, not because their credit needs are smaller, but because being less credit worthy their demand is less effective.

(5.15) Having examined the share of different credit agencies in the supply of credit, we shall study their dues in the total outstanding at the end of the year.

Table 5.10. Debt outstanding at the end of the year

Creditor	% of total debt due
Government	12
Co-operative Societies and Banks	16
Traders and Commission Agents	13
Private Moneylenders	44
Agricultural Moneylenders	-
Relatives	15
Total	100

It is the shares of the Government and the private moneylender which are much larger in the outstanding debt then in the borrowing during the year. We have already seen that the government finance is to a very large extent available for capital expenditure and consequently most of it is of longer term. A substantial portion of the advances from private

moneylenders go to finance the family expenditure of the borrower and though intended to be strictly short-term, actually remains standing over a longterm particularly because the private moneylender is more accommodative and not always interested in recovering the advances. On the other hand the advances from societies and banks largely finance the current farm expenditure and are strictly of short-term. Advances from traders and commission agents are often against the produce and of very short-term. The business of the agricultural moneylender as earlier indicated is largely among the small cultivators and the landless labour, and lend mostly to meet the family expenditure of the borrower; by the nature of his clientele he would not therefore allow many overdues. Advances from relatives are interest free, by our definition and usually are in the nature of short-term accommodation. Their share in the outstanding due is nearly the same as in the annual

#### VI BALANCE OF INVESTMENT AND DISINVESTMENT

(6.1) The discussion in the previous chapters might be summarised by

bringing together what might be called investment expenditure and disinvestment receipts of the families. The items are as under:-

Disinvestment receipts	Rs.	Investment expenditure	Rs.
1. Sale of assets	66	5. Agri. investment	176
2. Borrowing	140	6. Non-Agri. investment	8
		7. Financial Investment	4
		8. Durable consumer expenditure	22
3. From Current A/c.	60	9. Repayment of debt	56
4. Total Receipts	266	10. Total Payments	266

Table 6.1.

two sides of the capital account of an average family. The balance between the receipts and expenditure, which in this case amounts to Rs. 60, has therefore, been shown as item 3 on the Receipts side and termed "from current Account". It is in fact a measure of how much from the current account is transferred to the capital account by way of investment. The item has obvious similarity with the concept of net capital formation and should for that reason be clearly distinguished from the latter. It should be noted that the above statement is restricted only to actual capital transactions. From it are excluded firstly all imputations regarding appreciation and depreciation of assets both through physical changes and through price changes; secondly.

Thus presented, the items are indeed the also changes in cash balance including other liquid assets are excluded. These are, of course, matters or definition of the scope and content of concepts. But even with the restricted concept, there are a couple of short-comings in the above statement. One is minor and might be neglected. It is that while on the receipts side, under sale of assets, sale of bullion, etc., are included, the corresponding item on the expenditure side, namely, purchase of bullion ornaments, etc., has not been included. For obvious reasons purchase of bullion, etc., was not asked about. The item, however, is small, only worth Rs. 2 per family and a partial corrections for the omission of the item on the right hand side would be to drop it from the left hand side as well. In doing so, we shall be merely treating bullion changes in the inventories of stocks as and ornaments on par with cash and other liquid assets.

(6.2) The other omission is serious. Borrowing appear proportionately on the receipts side and the repayments on the investment expenditure side. We have omitted, however, an analogous pair of receipts and payments; they are the receipts by way of recovery of loans on the one hand and payments by way of making of loans on the other. As we shall see, this omission is rather serious and detracts much from the value of balancing item 3 appearing in the above statement. From the point of an individual perhaps, repayment is the counter-part of borrowing and recovery that of landing. But in relation to the account of a group and in relation to a point of time or a period of time, it is lending which is the counterpart of borrowing and recovery that of repayment. However, that is an academic point and so long as both borrowing and recovery appear on the receipts side and lending and repayment on the payments side, the statement would be unobjectionable from this point of view. This omission of both lending and recovery, however, causes serious difficulty. As it was thought difficult to obtain reliable information, no information was obtained on these points and that leaves the statements necessarily incomplete.

(6.3) An attempt might be made to fill in these serious gaps in the above statement. We would note to begin with, that all borrowing by individuals is not from individuals but that part of it is from institutions such as Government, cooperative societies, banks, etc. On the other hand lending by individuals to institutions is small and has been included under other categories of financial assets such as deposits, etc. For this reason, it is obvious that the landing by individuals, which should appear on the right hand side of the above statement would be smaller than the borrowing by the individuals. For the same reason, recoveries by individuals would be smaller than the repayment by individuals. There is a further reason why in the above statement lending would be smaller then the borrowing and recoveries smaller than the repayments. Even when individuals have borrowed from individuals, the creditors would often be person not belonging to the group of individuals to which the above statement is supposed to refer. Such for instance are moneylenders and traders who would be mostly residents of larger towns and marketing centres which the sample of villages does not cover or represent. In fact, if we refer to our classification of creditors, it appears that, it is the agriculturist moneylenders and the relatives of the borrower, who would be the

persons included in the group of individuals covered by the above statement. Agriculturist moneylenders are in most cases cultivators themselves and the relative of the borrower would not be different from himself. Some of them of course, would be urban workers. But as will appear from the Farm Business data presented in subsequent chapters, the receipts from remittances to the cultivators in the district were small. There is, therefore. little evidence of the agriculture at home being subsidized by workers in cities and other urban canters. It seems likely that the credit received by the village people from their city relatives would also be small. At any rate there is no immediate possibility or find this out we shall, therefore, neglect the point. As we earlier noted, out of the total borrowing of Rs. 140 per family, four per cent was from agriculturist moneylenders and 16 per cent from relatives. Thus we might say that 20 per cent of Rs. 140 which is about Rs. 28 were borrowed by the families within the group they represent. If, therefore, we were to have an items of "landing" on the right hand side, it would be approximately Rs. 28.

pointed out earlier, the receipts on that as under:-

account would be smaller than the repayments appearing on the right hand side. Repayments during the year amounted to Rs. 56 per family. We have no knowledge of the creditor composition of repayments. As a first approximation we might take the same percentage, namely, 20 per cent as having been repaid to individuals belonging to the group under discussion. That would be about Rs. 11. However, we are inclined to believe that the actual share of individuals in the repayments during the year would be very much smaller. As will appear, the repayment during the year are about 40 per cent of the borrowings during the year. As it happens, the share of co-operative societies in the borrowings is very large and is as much as 20 per cent of the total. It is clear, therefore, that under the circumstances, the share of the individuals in the recoveries could not considerable. Any guess is by its nature bound to be arbitrary, but we are inclined to believe that not more than ten per cent of the repayment were to individuals belonging to this group. Therefore, we put this figure at about Rs. 6 per family.

(6.5) if we are now permitted to enter (6.4) regarding recovery of loans, as these items, the statement would appear

Disinvestment receipts	Rs.	Investment expenditure	Rs.
1. Sale of Agri. Assets	64	9. Agri. Investment	176
2. Sale of Non-Agri. Assets	-	10. Non-Agri. Investment	8
3. Liquidation of financial assets	-	11. Financial Investment	4
4. Sale of other assets	-	12. Durable consumer expenditure	22
5. Borrowing	140	13. Lending (borrowing from Agr. moneylenders and relatives)	28
6.Recoveries (approx.)	6	14. Repayments	56
7. From Current A/c.	84		
8. Total Receipts	294	15. Total Payments	294

Table 6.2.

Thus, the resulting investment surplus which we show as the transfer from the current to the capital account is Rs. 84 per family. This investment surplus of Rs. 84 per family includes the expenditure on durable consumer goods which amount to Rs. 22 per family. Some might choose to include this item under "investment". Therefore, if it is omitted, the surplus is reduced to Rs 62 per family.

(6.6) if we now confine our attention to the cultivating families only, the above statement per cultivator appears as under:-

Disinvestment receipts	Rs.	Investment expenditure	Rs.
1. Sale of Agri. Assets (land, live- stock, etc.)	86	9. Agri. investment	256
2. Sale of Non-Agri. Assets	-	10. Non-Agri. Investment	10
3. Liquidation of financial assets	-	11. Financial Investment	5
4. Sale of other assets	-	12. Durable consumer expenditure	25
5. Borrowing	193	<ol> <li>Lending (borrowing from Agricultural moneylenders and relatives)</li> </ol>	40
6.Recoveries (approx.)	6		
7. From Current A/c.	127	14. Repayments debt	76
8. Total Receipts	412	15. Total Payments	412

Table 6.3.

In this statement lending has been put equal to borrowing by all families from agricultural moneylenders plus borrowing by cultivators from their relatives. This seems to be reasonable. On the other hand, the recoveries will have to be put somewhat arbitrarily. We propose to proceed on the assumption that the recoveries amounting to Rs. 6/- per family which we entered in the previous statement, were all recoveries accruing to cultivators. This will, if anything be an overestimate of this item and we shall be safer in the sense of not overestimating the investment surplus. The resulting surplus is Rs. 127/- and is a little larger than the average for all families.

(6.7) It is to be expected that the investment surplus will be larger with the bigger cultivators than with the smaller ones. It would be useful, therefore, to prepare similar investment and disinvestment statements separately for the ten groups cultivators. of However, even an approximate estimation of the two items of lending and recoveries separately for the ten groups of cultivators seems to be difficult. As we put them in the previous section, the lending and recoveries per cultivator were Rs. 40/- and Rs. 6/-, respectively. The problem now is to divide these total estimated lending and recoveries of all cultivators, among the

ten groups. There is no direct way to do this indirectly. Though we have not so far made use of the information, we have in the General Schedule asked each family regarding its outstanding dues. In the following table, we give the reported outstanding dues for the ten groups of cultivators and also for the noncultivating families. In a parallel column we give the indebtedness owing to agriculturist moneylenders and relatives:-

If the reported outstanding dues were reasonably complete, the total dues should approximately be equal to the total indebtedness owing to the agriculturist moneylenders and relatives. As it is the outstanding dues that are much smaller than the relevant indebtedness and it is obvious that the outstanding dues are underreported. That was, of course, expected and in fact it was for this reason that we did not so far use the reported data on dues. If this reporting were reasonably complete, we had thought that we might as an approximation describe the total estimated lending by all cultivators among the ten groups in the same proportions as their reported outstanding dues. In view of the under-reporting of the dues, this does not seem possible.

Stratum of families	Outstanding dues in Rupees	Indebtedness owing to Agr. money lenders and relatives Rupees					
1	9,890	9,470					
2	1,970	3,730					
3	1,100	3,350					
4	3,850	4,750					
5	500	2,860					
6	-	5,530					
7	2,900	3,240					
8	1,700	2,600					
9	660	2,230					
10	340	2,980					
All Cultivators	22,910	40,740					
Non-cultivators	2,670	8,680					
All Families	25,580	49,420					

Table 6.4

(6.8) In comparing the investment lowing table we give in summary form and the disinvestment expenditure receipts of different groups of cultivators, we shall not, therefore, take account of the lending and recoveries. In the fol- tors. (table 6.5).

the receipts and expenditure per cultivator in different groups of cultiva-

Stratum	Sale of Assets Rs.	Borrowing Rs.	Total receipts Rs.	Investment expenditure Rs.	Durable consumer expenditure Rs.	Repayment of debt Rs.	Total expenditure Rs.
1	103	684	793	699	69	317	1085
2	61	212	273	418	34	82	534
3	55	171	226	359	9	82	450
4	130	224	354	269	51	61	381
5	105	120	225	134	5	51	190
6	60	207	267	197	51	43	291
7	118	89	297	133	39	55	227
8	98	66	164	79	26	15	120
9	83	82	165	109	7	36	152
10	20	62	82	94	7	16	117
All Cultivators	20	193	279	271	25	76	372

Table 6.5

Item

Table 6.6.

Purchase of land net of sales	48
Purchase of livestock net of sales	1
Purchase of implements net of sales	161
Land improvements	
Other Investments in agriculture	516
Total investment in agriculture net of sale	726
Minus borrowings for capital investment in agriculture	257
Investment in agriculture net of borrowing	469
Capital investment in non-agricultural business	
Additions to financial assets	29
Consumer capital expenditure	69
Repayment of old debt	317
Total	884
The disinvestment items which could not be set off against any of the investment	
items are:	
Sale of ornaments and bullion	12
Borrowing for current farm expenditure	236
Borrowing for family and other purposes	191
	439

(6.9) For a comparison between the bigger and the smaller cultivators, we might concentrate our attention, as we have earlier done, on the first group namely that of the ten per cent biggest cultivators and the last two groups, namely, the groups of the 20 per cent smallest cultivators. Considering the group of ten per cent biggest cultivators, we give in the culture against the total of much expen-

(table 6.6), principal investment and disinvestment items per cultivator in this group. Some of the disinvestment items could obviously be set off against corresponding disinvestment items; thus we might set off sale of land against the purchases of land of the borrowing made to meet the capital investment in agri-

Per family expenditure

diture. In the following table (table 6.6) wherever possible, the investment items have been so noted for the corresponding disinvestment items.

(6.10) thus, there is an investment excess of Rs. 445 per cultivator in this group. It should be remembered that we have neglected both lending and recoveries. If we take in to account their lending and recoveries, the actual investment surplus would appear a little larger than that appearing above. Secondly, we have earlier suggested that sale of ornaments and bullion might be omitted from the disinvestment side, as we have no knowledge of the corresponding item on the investment side. In comparing the big and the small cultivators, we have thought it desirable to present the reported sales of bullion. In the above table, we have, therefore, entered on the disinvestment side, sale of ornaments and bullion as Rs. 12 per cultivator. There is no corresponding entry on the investment side. In this group of cultivators, the expenditure an marriage has been as much as Rs. 146 per family, and there is no doubt that a considerable part of this expenditure must be an purchases of bullion and making of ornaments. Remembering that here we are considering only the cash expenditure on marriage ceremonies, ten per cent of the total seems to be a very conservative estimate of expenditure an this item so that the

purchase of bullion if included in the statement would result in showing a larger investment surplus.

(6.11) It might be reminded that the investment items are not net of depreciation and replacement; these are particularly important in the case of livestock, implements and buildings. We have no data on the basis an which depreciations allowances might be made. Nevertheless we shall return to this point when in the next chapter we shall study the farm business accounts of the cultivators. The same is true of the large disinvestment items, namely, borrowing for current farm expenditure. It seems necessary to examine more closely its contents and the reasons why most of it could not be set off against equivalent repayment. We hope to do this in the next chapter. Borrowing on family account is also substantial. Part of it is, of course, for the capital expenditure, consumer particularly, construction and repair of buildings. Expenditure on this account is about Rs. 70 per family and about onefifth was financed by borrowing. Therefore, even if we make on allowance for consumer capital expenditure, it is clear that substantial borrowing takes place for meeting the family expenditure. We have already commented on this point earlier. The only additional point which we now wish to make is to draw

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attention to the fact that this large borrowing on family account takes place side by side with substantial excess on investment side. This might partly be explained by the fact that the group of families is not altogether homogeneous in the sense that the families incurring the investment expenditure might not all to the same as these who borrowed on family account. There is no doubt, however, that the group of bigger cultivators vestment items wherever possible.

present some intriguing characters. We hope that when in the following chapters, we study their farm business, some more light could be thrown on these features.

(6.12) Against this group might be contrasted the conditions in the group of the 20 per cent smallest cultivators. In the following table we give their investment items noted for corresponding disin-

Item	Per cultivator in the group of 20% smallest cultivators
Purchase of land net of sales	-17
Purchase of livestock net of sales	25
Purchase of implements net of sales	42
Land improvements	34
Total investment in agriculture net of sale	46
Minus borrowings for capital investment in agriculture	-34
Capital investment in agricultural business net of borrowing	12
Capital investment in non-agricultural business	3
Additions to financial assets	3
Consumer capital expenditure	7
Repayment of debt	26
	51
The disinvestment items are:-	
Sale of ornaments and bullion	-
Borrowing for current farm expenditure	12
Borrowing for family and other expenditure	25
	37

#### Table 6.7

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Thus, there results a small surplus of Rs. 14/- per cultivator. The smaller cultivators have sold more land than they have purchased. Their land improvement seem to have been financed by borrowing.

(6.13) We shall conclude this discussion by once again drawing attention to the contract which the two groups of cultivators show. On the one hand, borrowing even on family account, is larger with the bigger cultivators. But there, side by side with considerable the borrowing, investment takes place, more than onethird of which is financed by further borrowing and which, in spite of the large borrowing on family account results in a net surplus on the investment side. In the case of the smaller cultivators, they borrow less on family account and more on account of capital investment in agriculture. Sales of land have resulted in lowering the investment balance. It seems, therefore, that larger borrowing, or for that matter, even larger borrowing on family account does not necessarily indicate any unfavorable or undesirable situation. Use of credit by the creditworthy is natural and perhaps also desirable. The distinction between the farm and family accounts is, however, an accounting distinction and at source when and where credit is drawn upon, it is not always obvious and is often artificial.

#### VII. FARM BUSINESS SURVEY

(7.1) The discussion in the previous chapters was based on the information

collected through the General Schedule and as such could not be related in more than general way to the economic circumstances of the families concerned. This would need more detailed information regarding the occupation, income and expenditure of the families concerned. This could not, of course, be attempted for all the 1,757 families covered by the General Schedule. It was, therefore, in the first instance, to restrict ourselves only to the cultivating families and secondly, even among cultivating families, to investigate on more detail, only a small sample. A sample of 120 cultivators, 15 from each one of the 8 selected villages was, therefore, selected for a study of their farm business. Information on the principal items of farm expenditure and receipts was obtained by means of two visits to them. In the first visit period from, April, 1951 to September, 1951 was covered; in the second visit the period from October, 1951 to March, 1952 was covered. It might be noticed that these two periods roughly corresponded to the Kharif and Rabi seasons, respectively of the agricultural year.

(7.2) In selecting the sample the sample of 15 cultivators from each village, care was taken to make the sample representative of the cultivators in the village. Attention might invited to the manner in which the cultivators in each village after

their cultivating holdings, were divided into ten equal groups. The range of the size of the cultivating holdings for different groups in each village were, for instance, given in table 3.2. From each one of the first five groups, which together comprised half the bigger cultivators, two cultivators were selected; on the other hand from each of the latter five groups consisting of the smaller cultivators, only one cultivator was selected. This gives a total of 15 cultivators from each village. The reason for choosing a large number of bigger cultivators was the possibility that there would be more variety in their farm business. Within each group the selection was made in accordance with an appropriate random procedure.

(7.3) A great deal of detailed information was obtained regarding various items of farm business of these cultivators. In table 7.1, we give a few summary items for each one of the 120 cultivators. We have presented them in ten groups from which they were selected from their respective village. Thus, the first group of 16 cultivators, two from each village, are those selected from the ten per cent biggest cultivators from their respective villages. The first five groups thus consist of 16 cultivators each while the latter five groups consist of eight cultivators each. At the end of each group the average for

arranging them in a descending order of all items for these groups are give. These averages, it should be noted are not simple average of the cultivators appearing in each group. In section 3.3, we had explained the kind of biases by which our villages sample was affected. The first bias arose out of an over representation of the larger villages. In the present sample of cultivators this bias is corrected by taking the same number, namely, 15, of cultivators from each village, whether large or small. In fact it is for this reason that in selecting the villages, they were given chance proportional to their population. The second bias was on account of the equal representation of the society and nonsociety villages. In the sample of cultivators this bias remains and has to be corrected by the same procedure as explained in section 3.3. The average for each group of cultivators are, therefore, though not simple averages, are "weighted" to remove only the society and non-society bias. At the end of the table a summary is given. It contains the averages of all the items for the cultivators in the first five groups in the last five groups and for all cultivators taken together. We might for convenience call the cultivators in the first five groups, the bigger cultivators and those in the latter five groups the smaller cultivators. The averages for these are obtained by simply averaging the averages of individual groups. The average for all cultivators,

appearing in the last line of the table is again a simple average for the bigger and the smaller cultivators. As we have explained, the 120 cultivators consisted for 80 bigger and only 40 smaller cultivators, though the original groups of bigger and smaller cultivators, as they were constituted, were numerically equal. To remedy this, the general aver-

- 1 Value of owned land and buildings (in Rs. '80s)
- 2 Value of owned livestock and implements (in Rs. '80s)
- 3 Area own in across (correct upto one decimal place)
- 4 Cash receipts by sale of produce in Rs.
- 5 Other cash receipts by sale of produce in Rs.
- 6 Unsold produce by sale of produce in Rs.
- 7 Total receipts by sale of produce in Rs.
- 8 Cash expenditure by sale of produce in Rs.
- 9 Expenditure in kind by sale of produce in Rs.
- 10 Total expenditure by sale of produce in Rs.
- 11 Balance in cash by sale of produce in Rs.
- 12 Balance in kind by sale of produce in Rs.
- 13 Capital investment in agriculture by sale of produce in Rs.
- 14 Borrowing during the year by sale of produce in Rs.
- 15 Repayments during the year by sale of produce in Rs.
- 16 Total outstanding debt at the end of the year by sale of produce in Rs.

(7.5) As will appear from the last item of table 7.1 the average size of the cultivated holding of the selected families was 12 acres and the average number of plough cattle was about two. These agree very well with the average for all cultivators obtained from the General Schedule and suggest that the sample of cultivators selected for detailed study formed a good and representative sample of all cultivators. It should be possible, therefore, to discuss on the basis of this sample of cultivators, aspects of the problem which, for lack of more detailed information could not be discussed in the previous chapters. We propose to do this in the following chapters.

age is obtained as a simple average of the average of the averages of the bigger and smaller cultivators, whereby the two groups are placed on an equal footing.

(7.4) The items included in table 7.1 are as under and appear in column bearing respective numbers:-

Decile I.

Table 7.1.

Village	S.S. No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	6	146	33	395	230	_	945	1175	630	1086	1716	-400	-141	1300	400		412
1	10	112	40	412	403	60	985	1448	1166	1249	2405	-693	-264	900	-	45	500
2	1	83	14	323	415	_	1308	1723	1325	482	1807	-910	826	_	-	_	_
2	3	177	55	312	72	3500	1062	4634	1322	767	2589	1750	295	5000	4000	-	-
3	6	137	46	545	1125	230	-340	1015	519	850	1369	836	-1190	600	-	2500	2356
3	10	57	19	198	1190	325	-698	817	655	273	928	860	-971	340	-	-	1000
4	1	122	31	221	2169	20	1476	1712	261	572	833	-25	904	1630	-	400	3371
4	3	82	12	80	6	-	672	768	889	184	1073	-793	488	1125	-	1400	1062
15	6	433	15	255	1217	-	279	1496	1479	646	2125	-262	-367	325	-	-	2650
15	16	86	23	148	160	100	804	1064	885	742	1627	-625	62	-	1000	-	1015
16	6	220	8	453	14	200	857	1071	758	493	1251	-544	364	185	300	-	318
16	23	314	23	148	-	200	907	1107	1715	253	1968	-1515	654	130	700	-	1074
17	6	350	61	555	48	1500	1830	3378	3081	2017	5098	-1533	-187	-	650	82	1212
17	23	198	16	327	-	200	682	882	1040	422	1462	-840	260	250	200	-	224
18	6	345	19	382	-	-	678	678	408	420	828	-408	258	1318	500	70	660
18	8	448	25	304	480	605	128	1213	905	233	1138	180	-105	100	-	-	-
Weigh- ted	Average	188	28	31.5	380	453	1369	2202	1052	672	1724	-219	697	1034	499	342	1014

### Decile II.

Village	S.S.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	No.																
1	15	84	15	170	1440	-	-810	630	1375	243	1618	65	-1053	450	200	200	850
1	21	88	25	236	758	-	-27	731	1035	237	1272	-277	-264	-	-	-	-
2	5	159	39	205	292	6600	924	7716	3817	322	4139	2975	602	4600	4000	2000	2000
2	6	101	29	224	85	4500	896	5481	1920	465	2385	2665	431	95	-	-	-
3	11	99	26	407	551	100	135	786	317	350	667	334	-215	1300	-	-	-
3	19	128	21	505	439	225	-340	315	596	113	709	68	-462	365	300	300	579
4	5	55	7	70	120	-	772	892	229	182	41	-109	490	90	60	75	105
4	6	54	19	65	240	-	292	532	247	180	427	-7	112	-	-	100	-
15	21	204	36	188	1095	-	-415	680	2585	1747	4332	-1400	-2262	500	200	-	807
15	34	39	8	146	744	70	-416	398	665	465	1130	149	-881	324	-	-	-
16	43	166	17	166	1996	-	-1148	848	1366	423	1789	630	-1571	3200	700	600	1200
16	46	197	12	205	822	-	-760	62	530	473	1000	292	-1233	-	450	-	465
17	50	165	4	195	-	160	150	310	62	30	92	98	120	-	-	-	100
17	53	60	41	240	23	240	675	938	661	588	1249	-398	87	1250	-	50	80
18	16	163	18	260	64	-	176	240	216	228	444	-152	-52	-	200	250	150
18	24	203	19	220	-	810	264	1074	503	142	645	307	122	150	-	-	195
Weigh- ted	Average	116	21	22.3	530	933	851	2314	1050	359	1400	413	492	792	425	240	416

Decile III.

Village	S.S.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	No.																
1	6	146	33	305	230	_	0/15	1175	630	1086	1716	-400	-147	1300	400	_	412
1	10	112	40	412	403	- 60	685	1//8	1156	1240	2405	-400	-2648	900	400	45	500
2	1	83	14	323	415	-	1308	1723	1325	482	1807	-910	2826	-	_	-	-
2	3	177	55	312	72	3500	1062	4634	1822	767	2589	1450	295	5000	4000	_	-
3	6	137	46	545	1125	230	-340	1015	519	850	1369	836	-1190	600	-	2500	2356
3	10	57	19	198	1190	325	-698	817	655	273	928	860	-971	340	-	-	1000
4	1	122	31	221	216	20	1476	1712	261	572	833	-25	904	1630	-	400	3371
4	3	32	12	80	96	-	672	768	889	184	1073	-793	488	1125	-	1400	1062
15	6	433	15	255	1217	-	279	1496	1479	646	2125	-262	-367	325	-	-	2650
15	16	86	23	148	160	100	804	1064	885	742	1627	-625	62	-	1000	-	1015
16	6	280	8	453	14	200	857	1071	758	493	1251	-544	364	185	300	-	318
16	23	314	23	148	-	200	907	1107	1715	253	1968	-1515	654	130	700	-	1074
17	6	350	61	555	48	1500	1830	3378	3081	2017	5098	-1533	-187	-	650	82	1212
17	23	198	16	327	-	200	682	882	1040	422	1462	-840	260	250	200	-	224
18	6	345	19	382	-	-	678	678	408	420	828	-408	258	1318	500	70	669
18	8	448	25	304	480	605	128	1213	905	233	1138	180	-105	100	-	-	-
Weigh- ted	Average	188	28	31.5	380	453	1369	2202	1052	672	1724	-219	697	1034	499	342	1014

Village	S.S.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	No.																
1	37	61	14	304	928	_	1130	2058	1284	278	1562	-356	852	55	_	_	_
1	38	65	25	101	20	_	001	001	66	680	746	-66	311	-	200	200	_
2	11	112	23	06	0	1600	504	2202	720	165	005	200	420	1000	200	200	1775
2	11	112	24	90	9	1000	394	2205	720	105	005	009	429	1000	/00	-	1//5
2	12	12	27	140	205	7800	886	8891	2958	304	3262	5047	582	4500	4500	2500	2000
3	32	25	7	201	15	100	468	577	161	230	391	-46	232	200	-	100	112
3	34	52	11	203	218	240	665	1123	208	235	443	250	430	175	175	-	180
4	11	18	3	30	-	100	192	292	125	96	221	-25	96	200	-	-	-
4	12	25	24	40	600	440	160	1200	563	136	699	477	24	1312	-	200	252
15	69	72	6	71	130	-	784	914	304	259	563	-174	525	350	160	110	563
15	70	3	4	62	88	150	290	528	187	138	325	51	152	-	-	-	-
16	88	179	6	121	40	-	882	922	182	253	435	-142	629	-	-	-	354
16	96	81	7	128	290	-	765	1055	906	417	1323	-616	348	150	-	300	-
17	117	51	14	110	-	420	162	582	480	160	640	-60	2	-	-	-	-
17	121	40	9	110	-	121	1276	1397	1100	809	1909	-979	467	-	1300	-	1375
18	45	183	8	213	1400	-	270	1670	1789	148	1937	-389	122	205	1050	1000	2750
18	51	24	9	142	-	260	278	538	96	28	124	164	250	-	-	40	240
Weigh- ted	Average	58	13	13.9	246	837	617	1700	711	270	981	372	347	606	688	300	586

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Weigh- Average 44

9.0

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314 354

314 464

210 210

478 168

218 386

160 1139

-979

-18

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Village	S.S.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	No.																
1	52	57	8	80	600	-	603	1203	349	161	510	251	442	150	-	-	700
1	58	39	3	118	-	-	416	416	63	349	412	-63	67	-	700	-	868
2	13	72	7	92	-	100	404	504	23	78	101	77	326	-	-	-	-
2	15	63	5	39	11	125	315	451	97	94	191	39	221	-	-	200	300
3	42	68	17	159	1135	20	745	1900	255	933	1188	900	-188	-	300	-	309
3	44	19	10	160	317	30	704	1051	234	589	823	113	115	50	-	110	937
4	16	17	3	25	192	-	264	456	-	114	114	192	150	-	100	-	50
4	17	16	5	20	144	-	180	324	-	76	76	144	104	-	100	50	50
15	75	40	3	68	922	-	134	1056	434	136	570	488	-2	-	-	103	-
15	82	35	2	56	-	500	414	914	331	233	564	169	181	-	-	-	-
16	101	82	21	115	-	-	275	275	656	87	743	-656	188	685	-	250	506
16	107	16	8	107	171	100	726	997	598	337	935	-327	389	-	-	200	570
17	137	40	7	111	-	300	286	586	231	71	302	69	215	500	-	300	300
17	147	82	10	85	-	551	1199	1750	925	312	1237	-374	887	-	800	-	850
18	62	73	34	119	32	22	668	722	637	359	996	-583	309	100	-	120	500
18	70	242	15	194	75	22	402	499	432	127	609	-385	275	125	350	-	350
Weigh- ted	Average	56	13	9.4	242	102	477	821	284	263	547	60	214	83	148	74	395
Decile	VI.																
Village	S.S. No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	61	68	1	122	112	200	254	566	258	77	335	54	177	180	800	-	896
2	16	26	29	132	76	1500	907	2483	250	552	802	1326	356	1425	1500	700	800
3	51	55	7	128	295	165	363	823	281	588	869	179	-225	-	-	-	-
4	19	21	1	25	-	-	172	172	6	88	94	-6	84	125	-	100	-

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D	ecile	VII.

Village	S.S.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	No.																
1	75	60	21	145	-	100	859	659	297	318	615	-197	541	-	-	-	-
2	21	26	15	66	78	50	330	458	145	133	278	-17	197	500	-	-	-
3	63	26	7	100	10	120	364	494	96	114	210	34	250	225	100	44	353
4	23	1	11	25	-	-	280	280	6	56	62	-6	224	350	-	-	-
15	111	41	6	54	161	950	752	1863	902	217	1119	209	535	416	150	-	740
16	149	73	17	181	193	200	1355	1748	1202	480	1682	-809	875	400	500	100	535
17	190	43	9	65	-	200	1119	1319	1252	718	1970	-1052	401	10	400	-	575
18	89	121	8	56	128	840	130	1098	234	14	248	734	116	10	350	-	325
Weigh- ted	Average	44	12	8.0	60	252	604	916	428	233	661	-116	371	246	280	16	263
Decile Village	VIII. S.S. No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	92	64	7	98	-	40	320	360	3	188	191	37	132	-	-	-	336
2	23	52	3	50	-	1240	132	1372	172	71	243	1068	61	-	-	-	400
3	78	16	1	120	-	225	210	425	4	126	130	221	84	200	150	200	237
4	25	14	3	18	-	20	192	212	20	46	66	-	146	300	200	56	81
15	134	11	1	20	-	150	138	288	7	34	41	143	104	-	300	-	303
16	194	51	1	63	-	75	924	999	89	106	195	-14	818	-	-	-	62
17	243	48	7	46	-	150	240	390	609	10	619	-459	230	650	-	-	200
1/			0	70	-	360	161	521	559	62	621	-199	99	-	200	200	162
18	110	51	0	10													

Village	S.S.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	No.																
1	98	33	6	63	-	-	262	262	75	97	172	-75	165	-	-	-	200
2	25	14	8	20	-	400	138	538	180	53	233	220	85	250	-	-	-
3	82	20	6	69	210	130	402	742	175	138	313	165	264	-	-	50	296
4	28	34	2	10	-	60	72	132	-	36	36	60	36	60	-	-	-
15	146	1	5	19	-	400	176	576	110	192	302	290	-16	-	-	-	-
16	196	43	-	62	-	600	504	1104	65	184	249	535	320	-	-	-	-
17	259	46	3	45	-	200	382	582	100	164	264	100	218	-	-	-	-
18	125	39	1	65	-	300	128	428	56	28	84	244	100	565	-	-	500
Weigh- ted	Average	28	4	4.3	32	235	249	516	97	106	202	170	144	198	-	8	125

Dec	cile	X.

Village	S.S.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	No.																
1	114	8	-	30	18	50	78	146	24	5	29	44	73	-	-	-	150
2	26	20	10	33	-	900	214	1114	168	133	301	732	81	600	-	-	-
3	95	149	5	30	-	450	173	623	200	257	457	250	-84	60	-	450	600
4	30	3	1	8	-	50	72	122	-	36	36	50	36	245	-	100	50
15	167	9	4	17	-	400	122	522	231	70	301	169	52	150	500	300	500
16	225	30	-	17	92	-	52	144	81	53	134	11	-1	-	65	-	70
17	309	13	5	18	-	550	62	612	225	46	271	325	16	-	230	220	196
18	133	22	8	50	-	-	87	87	10	45	55	-10	42	190	-	-	-
Weigh- ted	Average	34	4	2.5	12	314	113	439	113	86	199	213	27	172	76	135	197
First 5 S	stratas	108	17	19.2	333	532	827	1692	749	381	1130	116	446	630	402	233	603
Last 5 S	tratas	38	6	5.8	37	284	319	640	207	153	360	114	166	210	146	69	233
All Cult	ivators	73	12	12.5	185	408	573	1166	478	267	745	115	306	420	274	151	418

VIII. ASSETS AND HOW INVESTMENT

(8.1) One of the aspects of the problems which we could not discuss in the earlier chapters, was the relation of new investment to existing assets. In earlier chapters, we discussed, among other things, the extent of now capital investment in agriculture and the forms that it takes. We could not, however, place it against the background of the exiting capital equipment. In the farm business survey of the selected cultivators, we have obtained the inventories of their assets and liabilities. It should be possible, therefore, now to examine the new investment in relation to the existing assets.

(8.2) the principal assets of the cultivators are, of course, the owned land, buildings,

livestock and implements. The average value of these assets per cultivator were as under (table 8.1)

(8.3) Naturally land constitutes the principal items and accounts for more than 75 per cent of the total assets. Buildings referred to in this table consist of all kinds of buildings and in particular, the residential building. In fact, a large part of these assets would consist of only the residential buildings, there being very few other categories. Livestock comprises of the plough and milch cattle as also of other animals and birds; we have already noted that the number of plough cattle per cultivator is about two; the actual average works out to be 2.39. The average number of milch cattle per cultivator is 2.14. The value of these, together with a small number of sheep

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and goat and some poultry appears to be reasonable. A majority of the implements are of traditional type; by value only about ten per cent of them are in the category of tractors, oil engines, etc.

(8.4) the sample of cultivators reported an average expenditure of Rs. 420/- by way of capital investment in agriculture. Compared with the corresponding figure obtained from the General Schedule, this figure is two and a half times larger than that of the General Schedule. On the basis of the General Schedule it was only about Rs. 176. The major difference, however, is to be found in the expenditure on purchases of livestock. In the general schedule it was Rs. 45/- only while in the Farm business Survey this figure is as high as Rs. 202/-. About the purchase of land, the General Schedule average was Rs. 38/- while in the farm business survey it is Rs. 80/-. Expenditure on purchase of implements is Rs. 18/- in the General Schedule Results while it is only Rs. 9 per cultivator in the sample results. The remaining difference, is therefore, on account of the expenditure on land improvement, the major difference being on account of digging and repair of wells. The General Schedule gave an average of Rs. 22/- while the Farm Business survey gave an average of Rs. 70/-

(8.5) we also notice a large difference in the reported figure on account of the expenditure on construction and repair of buildings. The general schedule gave and average of Rs. 15/- only while the form business survey give an average of Rs. 90/-. These differences are too large but possibly are mainly on account of the variation of the results based on small samples, as they are in the present case. Considering the last mentioned item for instance, namely, construction and repair of buildings, we find that a single cultivator has reported an expenditure of Rs. 2500 on this item. This naturally affects disproportionately the average for the 120 cultivators. As average figures, we are therefore inclined to believe that the average based on the General Schedule are more trustworthy. It is obvious however that in their relation to the assets of the sample of cultivators, it would be more appropriate to consider the expenditure reported by the sample of cultivators themselves.

(8.6) Expenditure on purchase of livestock is about Rs. 202 while the receipts from the sale of livestock amounted to Rs. 100/- per cultivator thereby giving on average investment of Rs. 102/- on purchase of livestock net of sales and works out at about 10 per cent of the value of livestock. No comment can, however, be offered as to adequacy or otherwise of this figure, both because we have no idea as to the rate of depreciation in the value of livestock through deaths and advancing age, an idea of the extent to which replacement taken place by mean of homebred animals.

(8.7) Expenditure on land improvement of all types comes to Rs. 120/- per cultivator. If it is appropriate to relate this to the value of owned lands, it works out to be about two per cent of the land values.

(8.8) Though in the above discussion, we have related the investment expenditure of all cultivators to their total assets, it must be noted that the bulk of the investment expenditure is undertaken by the bigger cultivators. This was also evident from the investment expenditure reported in the General Schedule by the cultivators in different classes. Among the selected cultivators we find that though the average value of purchase of livestock is Rs. 202 per cultivator, the bigger cultivator have incurred more expenditure. If we consider the bigger and the smaller cultivators, it will be seen that more than two-thirds of the total expenditure on this item is reported by the bigger cultivators. The average receipts on the sale of livestock were reported to be Rs. 100. Here also we find that there is no uniformity in the reported figures in different deciles. If we consider the purchase of livestock net of sales, we find that the purchases exceed sales by about Rs. 100 per cultivator. However,

Stratum	Value of livestock per cultivator	Purchase of live- stock per cultivator	Sales of livestock per cultivator	Net purchases of livestock
I	2363	411	194	217
II	1737	372	90	282
III	1216	89	89	-
IV	1105	520	137	383
V	671	11	29	-18
VI	694	260	50	210
VII	1004	69	92	-23
VIII	379	89	232	-142
IX	369	48	-	48
Х	335	154	90	64
Average for all cultivators	987	202	100	102

Table 8.2.

the bigger cultivators show a substantial net investment as against the smaller cultivators in whose case appears a negative investment balance. If this is related to the existing value of livestock per cultivator, it is seen to be about 10 per cent. In the following table are given the purchases and sales of livestock per cultivator and the net position per cultivator in different strata of cultivating families.

(8.9) Among the other items of capital investment in agriculture, digging and repairs of wells is an important item. About Rs. 70 per cultivator, which accounted for more then half of the total expenditure on land improvements, were reported on this account. The bigger cultivators have reported more than 85 per cent of such expenditure. If we take in to account the total expenditure on land improvements, which was Rs. 121 per cultivator, we find that it form nearly 2 per cent of the value of owned land. The proportion is a little more than 2 per cent in the case of the bigger cultivators and a little less than 2 per cent in the case of smaller cultivators. 20 per cant of the smallest cultivators did not report any expenditure on land improvement. In the following table are given the value of owned land and the expenditure on land improvements per cultivator in different strata of cultivators:-

Stratum	Value of land per cultivator in this group in Rs.	Expenditure on land improvement per cultivator in this group in Rs.
Ι	16,951	347
Π	10,503	324
III	11,491	250
IV	4,667	76
V	4,936	44
VI	3,663	36
VII	3,262	82
VIII	2,994	50
IX	2,258	-
Х	2,954	-
Average	6,368	121
for all		
cultivators		

(8.10) Construction and repairs of residential houses and other buildings was another important item of capital expenditure. As it appears in table 8.4 such expenditure per cultivator was Rs. 91. There is no uniformity in the reported figure. The smaller cultivators have reported a little more than half of the total expenditure on this account during the year. If we relate this expenditure to the total value of owned buildings per cultivator it comes to about 10 per cent.

Table 8.3

# Table 8.4

Stratum	Value of residential and other buildings per cultivator in this group in Rs.	Expenditure on construction and repairs of residential and other buildings per cultivator in this group in Rs.
Ι	1893	231
Π	1160	2
III	907	104
IV	1222	101
V	697	-
VI	817	-
VII	1150	392
VIII	800	-
IX	537	58
Х	527	23
Average for all cultivators	971	91

(6.11) In conclusion we may note that the investment expenditure incurred by the bigger cultivators is larger as compared to that incurred by the smaller cultivators, it is not large in proportion to the value of their assets. Further, the investment expenditure of all types is generally small possibly no more adequate to keep the existing assets in their present form.

#### IX FARM BUSINESS - CURRENT ACCOUNT

(9.1) The annual operation of the farm business might be briefly surprised by means of a statement of receipts and expenditure. For an average cultivator with an average cultivated holding of about 12 acres and an average such area (counted twice when sown twice) of 12.5 acres, a summary statement of receipts and expenditure appears as under:-

1.	Cash Receipts		593-0-0	4.	Cash Expenditure		478-0-0
1.1	1.1 By sale of crops and		4.1	Purchase of goods and			
	fodder	185			services	320	
1.2	Other receipts	408		4.2	Payments to factors	140	
				4.3	Other	16	
2.	2. Value of unsold produce		573-0-0	5.	Expenditure incurred in 20		267-0-0
					kind.		
				6.	Balance		421-0-0
					in cash	115	
					in kind	306	
	Total receipts Rs.		1166-0-0		Total payments Rs.		1166-0-0

Table 9.1

(9.2) In the above statement both the receipts and expenditure have been divided in to two bread categories, nearly in cash and in kind and the statement shows a balance of Rs. 421/- left to the cultivator of which Rs. 115/- were in the form of cash and the balance in kind. For a better appreciation of the content of this balance, we should perhaps explain in some detail the items appearing on both sides of the above statement.

(9.3) On the receipts side, we have Rs. 185/- by sales of crops and Rs. 573/- as the value of unsold produce This gives us a total of Rs. 758/- as the gross value of produce. The value of the unsold

produce has been obtained by subtracting from the gross value of produce, the value of sales. This might be objected to, on ground that sales might not necessarily be out of the current year's produce. This does not, however, affect the current account and in a statement where the inventories of stocks at the beginning and at the end of the year and hence the changes in the inventories are not shown, the above appears to be the appropriate accounting procedure.

(9.4) In the following table we give the commodity composition of the gross produce, sold and unsold. (table 9.2)

Crop	Sold	Unsold	Total
Foodgrains			
Millets	11	311	322
Paddy	13	39	52
Wheat	1	30	31
Gram	5	23	28
Other pulses	1	12	13
Other cereals	-	9	9
	31	424	455
Cash Crops			
Groundnut and other seeds	13	9	22
Spices & condiments	22	25	47
Tobacco	-	6	6
Sugarcane	31	28	59
Cotton	8	1	9
	74	69	143
Others			
Vegetables (Potatoes and others)	51	15	66
Fruits	27	-	27
Fodder	2	65	67
	80	80	160
Grand Total	185	573	758

Table 9.2

(9.6) Relating current sales to current produce, which seems largely justified in the present case, it appears that among cereals, paddy alone is grown for the market; about one fourth of the paddy grown having been marketed. Among the pulses, most of the produce seem mostly grown for home consumption. Commercial crops are naturally grown exclusively for the market. Of fodder, only a little is sold.

(9.7) It should be noted that the total of Rs. 758 of gross produce is for an average farm of about 12 acres to be more precise, 11.9 acres or of 12.5 acres of sown area. The gross produce per acre, therefore, works out to be about Rs. 61/-. This is an average figure composite for all crops and it might be worthwhile comparing the gross produce per acre for different crops. The 12.5 acres of sown area is approximately distributed as under:- (table 9.3)

Crops		Acres	
Millets		9.6	
Rice		0.4	
Wheat		0.3	
Pulses		1.3	
Oilseeds		0.3	
Spices		0.1	
Sugarcane		0.1	
Fruit, vegetable and Others		0.4	
	Total	12.50	

Table 9.3

We might incidentally note that the above distribution of the crop acreages in the sample of cultivators chosen for the farm business survey agrees very well with crop acreages of the whole district. Thus in the table above, the proportion of the total sown area, under millets is 80 per cent. The corresponding district percentage is 81. Similarly we find that the proportion of other crops also agrees very well with the district figures.

(9.8) we can relate the value of the gross produce of different crops to the respective areas sown under them. Thus we can relate the gross value of millets namely, Rs. 322 to the area sown under them, that is 10 acres. That gives an average of about Rs. 32/- per acre. Little area in shown under fodder crops and most of the fodder is the stalks of millet crops- particularly of jowar. If we make some allowance, say about 40 per cent, for the fodder value of the stalks of millet crops, that gives an average a gross value of Rs. 53/- per acre of millet crops. Similar figures for other crops are Rs. 129/- for rice. Rs. 103/- for wheat, Rs. 22/- for pulses, Rs. 73/- for oil-seeds, Rs. 474/- for spices, Rs. 59/for sugarcane and Rs. 510/- for fruit, vegetable and other crops.

(9.9) So far as the value of the gross produce of jowar is concerned, it appear to be rather on the lower side. For instance, the normal yield of jowar is about 400 per acre. If we value at 8 Lbs. Per rupee, the average gross value of this produce should be about Rs. 50/- per acre. The actual average which is Rs. 32/- per acre is rather low.

(9.10) other cash receipts appearing in the receipts side are as under:- (Table 9.4) while choosing the item to be included, the intention was to included only, such receipts item as might be considered part of the farm business receipts; receipts from non-farm business of the cultivators were specifically omitted.

Table 9	.4
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Other cash receipts	per cultivator.		
By sale of livestock products			232.8
By sale of miscellaneous agricultural			0.3
produce			
By carting			9.1
Cash wages			136.4
Cash rent	8.4		
remittances	18.1		
Interest	2.3		
		Total	407.4

(9.11) The inclusion of receipts from carting and wages might be disputed. In the case of cultivators, cart is usually a part of the capital equipment of the farm business and hence receipts from carting should be included in the farm business receipts. The case for inclusion of wages in the receipts side is rather difficult. As noted in the above table, the cash wages received, amounted to Rs. 136/- per cultivator while the payment of cash wages by the cultivators amounted to about Rs. 80/-. The receipts exceed payments by about 70 per cent. Unless the payment of wages have been underreported, the excess of wage receipts by cultivator over wage payment by cultivators must be supported to be the net wages receipts by cultivators from non-farm employment. In that case, the inclusion of this excess of wages receipts as farm business receipts might be disputed. Our inclusion, however, rests on simpler considerations; namely, a major part of it comes very close to farm business and secondly it forms an important source of cash receipts to the cultivators, particularly to the smaller ones. Its importance is obvious because even for the average cultivator, it forms about 23 per cent of total cash receipts.

(9.12) on the expenditure side, following the usual social accounting practice, the cash expenditure is divided in to three broad categories namely, (i) purchases of goods and services (ii) payments to factors and (iii) other charges. In the following (table 9.5) are the details of expenditure on purchases of goods and services.

(9.13) It is apparent from the about table that about two-thirds of the total expenditure on the cash purchases of goods and
services is incurred for fodder. The purchases on account of fodder for the two seasons appear as under. (table 9.5A). On an average the bigger cultivator possessed 3 milch cattle and 3 plough cattle while the smaller cultivator possessed one milch cattle and one

Table 9.5. Cash purchases of goods and services.

	Rs.
Seed	45.0
Manure	59.0
Fodder	195.0
Maintenance and Repair of Implements	2.9
Other services	-
Hire of implements and plough cattle	1.0
Storage, transport and sales commission	13.3
Rent	3.2
Contribution to tenants	0.6
Total	320.00

Table 9.5A.

	April to September		October to March	
	Per bigger cultivator	Per smaller cultivator	Per bigger cultivator	Per smaller cultivator
Fodder Other cattle feed and grassing	110	37	35	11
pastures, etc.	66	21	93	16

plough cattle. The reported high expenditure on account of the purchase of fodder seems to be a result of the deficiency of fodder in the district as a whole. Other items are clear. About Rs.

13 per cultivator have been reported as expenditure incurred on account of storage, transport and sales commissions. Many of the cultivators prefer to sell the produce at big consumers' markets like Poona and Bombay and as such the expenditure on this account appears large. Expenditure on account of the maintenance and repair of implements as well as that for hired implements and plough cattle is small and hence reasonable. Amount paid on account of rent as well as contribution to tenants is also small and suggests that the cultivators do not prefer the system of cultivating against cash rent unless the figures suffer from under-reporting.

(9.14) payments to factors are as under:-

Table 9.6

Wages to annual farm servants	52
Wages to casual farm labour	80
Interest on loans	8
Total	140

Wages to annual farm labour are about one third of the total payment to factors while more than half of the total is paid to casual farm labour. The operation for which casual labour with cash wages is employed are roughly as under:-

Table 9.7

Ploughing and harrowing		4.8
Transplanting		7.9
Interculturing		21.6
Harvesting		26.2
Processing		9.9
Threshing		4.0
Other		5.2
	Total	79.6

# (9.15) other charges are:-

Table	9.8
-------	-----

		Rs.
Land revenue		117
Other expenditure		1
	Total Rs.	118

Other expenditure comprising of unspecified items would be partly expenditure on purchase of goods and services and partly on account of payment to factors. The amount is small and hence of little importance.

(9.16) The second major category of expenditure is that incurred in kind. It forms about 36 per cent of the total expenditure. In the following are the particulars:-

Table 9	9.	9.
---------	----	----

	Rs.
Homegrown seed	52.7
Farmyard nature	144.7
Share rent	21.0
Annual remuneration to artisans and services	39.4
Wages to harvesting labour	9.3
Other payments at harvest	-
Wages to annul labour	-
Total	267.1

The first two items are products retained by cultivators as producers. If they are to be recorded on the expenditure side, care has to be taken that they are reported as parts of the gross produce entered on the receipts side. Though intentions and instructions were that gross produce should be recorded without making allowance for the grain kept aside as grain, it is by no means certain that cultivators do not habitually make that allowance mentally. The cultivator knows that he needs certain grain for making payments in kind and for seed purposes. He, therefore, habitually discounts his produce to that extent. In order that gross produce might not be under reported on this account, particular care was taken. The form of the questionnaire was such that along with gross produce of each crops, the corresponding disposals in kind made at the harvest time were inquired into. Such disposals consisted of share rent paid to landlords, annual remuneration in kind made to artisans and services wages in kind to harvesting labour and certain other traditional payments made at harvest. The reason to confine only to the reason to confine only to the payments made ay harvest, was that it was thought that they might account for a very large part of the payments made in kind. Usually payments in kind to casual labour employed at other times of the year are negligible. It seems usual to pay in cash all other labour, except the harvest labour. Thus, in arriving at the net produce no allowance was to be made for seed requirements and it is presumed that the cultivators did not make any allowance themselves. As already said, it is by no means certain that this was so.

(9.17) The position in respect of farm yard nature used at home is more explicit, this item does net appear on the receipts side and hence, should not appear on the expenditure side. The position in respect of homegrown fodder retained by cultivators, is exactly the reverse. This is an item which appears on the receipts side and it is a fairly big sired item about Rs. 67/- per cultivator. On the other hand only cash expenditure on purchase of fodder is included, no account having been taken of the homegrown fodder fed to the livestock. For accounting consistency, we should take on the receipts side only the cash receipts from sale of fodder or include on the expenditure side, the homegrown fodder fed to livestock.

(9.18) As already noted the cash expenditure on fodder is Rs. 195/- per cultivator. This high expenditure indicates that the district or at any rate the selected villages or certainly the selected cultivators, were deficient in fodder. Rarely 75 per cent of the gross cropped area is under millets and there seems no reason why there should be shortage of fodder

in the district. Unfortunately separate figures for the sale of fodder are not available and as such it is not possible to know whether the cultivator also sold fodder in large amounts.

(9.19) The small amount of wages paid in kind has already been commented upon. An important aspect of the situation might be emphasised. The payments in kind are very small, about 6 to 7 per cent of the total wages payments. The system of payments in kind seems to be confined only to harvesting labour while all other casual labour is paid in cash.

(9.20) Finally, we might note that while a number of item of expenditure in kind were entered on the expenditure side, corresponding receipts of some of the items were not taken account of. The principal of such items are the share rent and wages in kind. However, it is not possible to comment on these as the figure are not separately available for the above item.

(9.21) If we now set off the expenditure against the receipts we have what might be called the balance of cultivation which is the surplus available to the cultivator. The total cash receipts are Rs. 594/- and the total cash expenditure Rs. 477/-. This leaves a cash balance of Rs. 117/- with the cultivator. His other surplus is in the form of the produce. From the value of

should subtract his expenditure which is worth Rs. 267/-. This gives us a balance in kind worth Rs. 306/-. Most of it is in the form of produce consumed or retained for consumption at home; though, of course, part of it might be sold and converted into cash at a later date. This the total balance left with the cultivator which is in cash.

the unsold produce which is Rs. 573/-, we various item appearing on the receipts and expenditure sides of the account we indicated in a few cases some modifications, such as for instance, that as the home yard manure is not shown as a receipts item, the same should not also appear on the expenditure side. Though we do not intend to pursue these modifications in subsequent discussion, in the is about Rs. 423/- about 28 per cent of following table we bring them together so that their net effect on the balance available to the cultivator might be (9.22) While discussing the nature of judged:-

	Imputed Receipts	Rs.	Imputed expenditure	Rs.
(a)	Hire of implements and plough cattle	1	Unsold fodder presumably consumed by owned cattle	65
(b)	Cash rent (approx.)	3	-	
(c)	Farm yard manure consumed during			
	farm business	145		
(d)	Share rent in kind (approx.)	21		
(e)	Wages in kind (approx.)	9		
		179		65

Table 9.10.

(9.23) the farm business survey was not intended to be a cost of production survey. Nevertheless, in nothing the expenses on seed and manure both in cash and in kind as also on cash wages to casual labour, we could conveniently note them for cash crop separately for which they were incurred. In the following table, we give the expenditure on these items per acre of the various crops as the information might prove of some interest. In the last column we have expressed the total of this expenditure, as a percentage of the gross value produce per acre of each crop.

Сгор	Seed	Manure	Cash wages	Total expenses	total expenses as % of value of gross produce
Rice	14.9	21.6	9.9	46.4	37
Wheat	8.9	19.5	7.4	35.8	33
Millets	1.9	10.0	3.0	14.9	44
Pulses	7.2	6.5	1.7	15.4	52
Oilseeds	12.0	29.9	13.1	55.0	57
Cotton	5.4	77.6	84.4	167.4	48
Spices	35.1	79.0	36.0	150.1	41
Sugarcane	146.9	388.0	212.5	747.4	88
Average	7.7	16.2	6.4	30.3	50

Table 9.11. Expenditure per acre on different item

average farm, as presented above, the more than the former. To get at them, we receipts and the expenditure are seen to must examine the accounts of individual balance comfortably leaving a sizeable cultivators. We shall return to the point balance to the cultivator and thus not in the next chapter. The other reason why directly revealing any credit requirements. On the other hand, as we noted, the cultivators actually borrowed on an average Rs. 40/- for meeting the current farm expenditure. There are two distinct in its day-to-day operation, the farm reasons as to why the annual accounts of business might suffer from shortage of an average cultivator do not reveal the credit needs. In the first instant in the average accounts, the receipts and expenditure of different cultivators are added up, in practice, unfortunately it cannot be done, so that the receipts of one cultivator are of little use in financing the expenditure of another cultivator unless the latter chooses to borrow them the former. Therefore, the credit needs as revealed by the accounts of an average cultivator are not the average needs of in the second season.

(9.24) in the annual accounts of an cultivators. The latter most be greatly the annual accounts of the average cultivator do not reveal any credit needs is because they are annual. In spite of the balance appearing in the annual accounts, funds. This is because of the extreme seasonal character of both the farm receipts and the cash expenditure which no longer balance in the accounts of each season. In the following table, we give the cash receipts and expenditure separately for the two periods from April to September and from October to March. (Table 9.12, 9.13) Thus there is a clear cash deficit of about Rs. 78/ in the first season while a surplus of about Rs. 195/-

#### Table 9.12.

#### April to September 1951

	Rs.		Rs.
Sales Proceeds	79	Seeds	20
Other receipts	115	Manure	42
		Fodder	118
		Wages	51
		Other	42
Total	194	Total	273

# Table 9.12.

# October to March 1952

	Rs.		Rs.
Sales Proceeds	106	Seeds	25
Other receipts	293	Manure	17
		Fodder	77
		Wages	29
		Other	57
Total	399	Total	205

(9.25) The lack of seasonal balance food-grains during the first season is even between receipts and expenditure from more acute. In the following we give the which the farm business suffers is not gross produce divided in to two categoconfined to its cash requirements. If it is ries namely, of foods grains and of parts of the farm business to keep the commercial crops, for the two seasons cultivators family alive, the shortage of separately.

Gross produce	April to September	October to March	Total
Food grains Commercial crops	140.3 96.0	315.5 206.3	455.8 302.3
Total Rs.	236.3	521.8	758.1

which the farmer is faced during the first season, who during this period must sustain himself with the uncertain prospects of the second season, emphasises the sense in which his farm and family is one whole business and the manner in which any accounting separation of the two becomes entirely artificial in practice. Those not fully aware of hazardous margin on which half of the cultivators carry on their business might wonder as to why the surplus of the second season should not finance the deficit of the first season of the following year. This certainly is the way the cultivator would arrange the matters. But a single unfavourable season with inadequate crops in the second season would upset his arrangements and it needs a succession of favourable years to retrieve the situation. From the point of view of the credit requirements, particularly of the shorter duration, it is the lack of seasonal balance in the farm accounts, milch more than the overall annual position, which appears, therefore, to be of primary importance.

# X. FARM BUSINESS BIG VS. SMALL

(10.1) We shall now return to the other point which we mentioned earlier. We said that for obvious reasons, the credit needs as revealed by the accounts of an arithmetically average cultivator could

(9.26) the shortage of food grains with not be the average credit needs of cultivators and to get at the latter, we should examine the accounts of individual cultivators. It is with this object that we gave in table 7.1 a few summary items relating to the farm business of individual cultivators. It is possible from these items, to derive the balance available to each cultivator and it would be found that only 82 of the 120 cultivators had a positive balance. It is obviously not possible in a summary report of this nature. As via media we should classify the cultivators according to some criterion and study the average accounts of different cultivators. To begin with, we might adopt the same method of classifying the cultivators as we used in the presentation of the General Schedule results. There all cultivators from cash selected village were arranged according to the size of their cultivating holding and then divided in to ten equal divisions. When the corresponding divisions from different villages combined were together, they resulted in a certain classification of the cultivators. The sample of cultivators selected for the farm business survey were actually selected from these classes of cultivators. From each one of the first five classes, two cultivators were selected from each village giving us a sample of 80 bigger cultivators. From each one of the latter five classes, only one cultivator was selected from each village, giving us a

sample of 40 smaller cultivators. In the following sections, we shall present the results for these two samples of cultivators, one of the bigger and the other of the smaller cultivators.

(10.2) In the following table we give statement of receipts and expenditure per cultivator in the two groups of cultivators:-

1.	Cash Receipts		865	4.	Cash Expendit	ure	749
1.1	By value of crops	and		4.1	Purchase of go	Purchase of goods and	
	fodder	333			services	492	
1.2	Other receipts	532		4.2	Payments to fa	ctors and	
					others	230	
				4.3	Others	27	
2.	Value of unsold pr	oduce	827	5.	Expenditure in	kind	381
				6.	Balance in		562
					cash Rs.	116	
					kind Rs.	446	
3.	Total receipts		1,692	7.	Total payment	s	1,692

# Table 10.1. Statement of Receipts and Expenditure per Cultivators in the groups of bigger cultivator

#### Table 10.2. Statement of Receipts and Expenditure per Cultivators in the groups of Smaller cultivator

1.	Cash Receipts		321	4.	Cash Expenditure		207
1.1	By sale of crop and	d		4.1	Purchase of goods and		
	fodder	37			services	148	
1.2	Other receipts	264		4.2	Payments to factors	50	
				4.3	Others	9	
2.	Value of unsold pr	oduce	319	5.	Expenditure in kind		153
				6.	Balance in cash Rs. 114 kind Rs. 166		280
3.	Total receipts		640	7.	Total payments		640

(10.3) It is obvious from the above table that the balance with the bigger cultivators is almost twice the balance of the smaller cultivators. However, when we take in to account the composition of the balance we find that the cash balance in respect of the two groups is nearly the 116/- in the case of the bigger cultivators and Rs. 114/- in the case of the smaller cultivators. Thus the cash receipts form a major proportion in the total balance of the smaller cultivators and hence their cash position appears a little better. We shall, therefore, briefly examine the items appearing on both the sides of their balance.

(10.4) Let us first consider the value of gross produce. For the bigger cultivators on the receipts side we have Rs. 333/- by way of sale of produce and Rs 627/- being the value of unsold produce. This given us a total of Rs. 1160/- as the gross value of produce. For the smaller cultivators, the corresponding figures are Rs. 37 and Rs. 319 adding to Rs. 356/- worth of total gross produce. We should relate this to the size of the cultivated holding in the two cases or more properly, though that is not very different, to the sown area. For bigger cultivators the average is 19 acres, for smaller cultivators it is about one third the average area sown being 6 acres. In relation to the size of their holdings therefore, the gross produce of the bigger and the smaller cultivators is nearly the

same being about Rs. 60 per acre of the same area. This is of course the average gross produce of all crops and it might be worthwhile examining it in relation to the crop compositions of the area sown by the two groups of cultivators. In the following table (table 10.3) we give the acres sown under different crops by two groups of cultivators. It is noted from the above table that the proportion of area under millets and cereals is almost the same in both the groups. The only difference is noticed in respect of the acreage under cash crops. All the area under cash crops seems to have been sown by the bigger cultivators. The area however is too small to affect the gross produce per acre of their holdings.

# Table 10.3

Area sown under	Average per cultivator				
important crops	Bigger cultivator	Smaller cultivator			
Millets	14.6	4.6			
Wheat	0.4	0.2			
Rice	0.6	0.2			
Pulses	2.0	0.6			
Oil seeds	0.4	0.2			
Spices	0.2				
Sugarcane	0.2				
Vegetables, fruits	0.8				
and others					
Total	19.20	5.80			

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(10.5) In the following table we give a comparative statement of gross produce per acre of different crops for the bigger and the smaller cultivators:-

Crop		Bigger cultiva- tors	Smaller cultiva- tors
Rice	Rs.	136	93
Wheat		104	101
Millets	5	32	39
Pulses		31	25
Oilsee	ds	94	101
Cotton	1	351	345
Spices		427	194
Sugarc	cane	180	504
Averag	ge	61	59

Table 10.4.

It is obvious that in millets which is the predominant crop, the gross produce of the smaller cultivators is no less than that of the bigger cultivators.

(10.6) The proportion of the produce which is sold naturally larger for the bigger cultivators than for the smaller cultivators. This, of course, is due to a number of reasons. Mainly, it should be due to the larger saleable surplus which they would have. Even then, the part of the produce which they held unsold, was such larger than in the case of smaller cultivators. The bigger cultivators must, of course, retain larger stocks of unsold produce; they have larger expenditure in kind to incur and presumably have bigger families to feed. Even after making allowance for the expenditure incurred in and in kind as also wages paid to casual

kind, all of which is not necessarily in grain, the unsold produce of the bigger cultivators is more than two and a half times that of the smaller cultivators. If the bigger cultivators have larger families, including farm servants, to feed, certainly they should not be so large. Therefore, either the smaller cultivator go short of foodgrains for home consumption and must buy them some time of the year; or the bigger cultivators retain for sometime a part of the saleable surplus. This they might do either as provision in expectation of better prices, or merely as precaution until the next harvest is in sight. Though we have expressed the several alternatives as either-or propositions, it is clear that the several possibilities must all be operative.

(10.7) before we look in to the contents of other cash receipts appearing on the receipts side we might examine the items of farm expenditure. The total farm expenditure for bigger cultivators is Rs. 1,130 which works out to be Rs 59/- per sown acre. In the case of smaller cultivators it is Rs. 62 per acre. The difference is very small and it would be quite interesting to examine the costs of the bigger and the smaller cultivators per acre of different crops. As we noted earlier, though all cost items could not be recorded separately for different crops, expenditure on seed, manure, both in cash

labour could be conveniently recorded separately for different crops. The average expenditure on these items per acre of different crops for all cultivators were given in table 9.11. In the following table we give the some for the bigger and the smaller cultivators. (table 10.5)

(10.8) let us now examine in detail the farm expenditure of the bigger and smaller cultivators. Earlier we had divided the cash expenditure in to three categories, namely (i) purchases of goods and services (ii) payments to factors and (iii) other charges. We shall examine the several items in that order. In table 10.6, we give the expenditure incurred by the two groups of cultivators on purchases of goods and services.

(10.9) for a broad comparison let us keep in mind that the area sown by the smaller cultivators in one third that sown by the bigger cultivators. It is clear then, that the expenditure on account of seed per acre sown is almost equal is both the groups. The same is true in the case of manure.

Crop	Bigger Cultivators				Sma	ller Cult	ivators			
	Seed	Manure	Cash wages	Total e xpenses	Total expenses as per cent of gross value of produce	Seed	Manure	Cash wages	Total e xpenses	Total expenses as per cent of gross value of produce
Rice	14.1	18.9	13.7	46.7	34	16.9	28.6	-	45.5	49
Wheat	8.8	20.2	4.8	33.8	32	9.1	19.5	14.4	41.0	40
Millets	1.9	8.2	2.8	12.9	40	2.0	15.9	3.3	21.2	54
Pulses	7.8	7.4	2.2	17.4	56	5.6	4.1	0.3	10.0	40
Oilseeds	11.7	22.4	14.0	48.1	51	13.3	57.3	10.0	80.6	80
Cotton	5.2	66.2	86.5	157.9	45	6.0	123.0	76.0	205.0	59
Spices	35.2	86.4	43.6	165.2	39	35.0	59.1	15.4	109.5	56
Sugarcane	156.1	383.4	234.4	773.9	79	124.0	399.0	157.7	680.7	135
Average	7.8	14.9	6.7	29.4	48	7.7	20.6	5.3	33.6	56.9

Table 10.5. Expenditure per acre on Different items

## Table 10.6

	Bigger cultivators	Smaller cultivators
Seed	67	23
Manure	85	33
Fodder	305	85
Other services		
Maintenance and repairs of	3.9	1.9
implements		
Hire of implements and plough cattle	1.6	0.4
Storage, transport, commission, etc.	24.4	2.2
Rent	4.4	2.0
Contribution to tenants	0.8	0.4
Total	492.10	147.90

(10.10) The expenditure on account of fodder is naturally larger in the case of the bigger cultivators because of the larger number of plough and milch cattle they own. Another item of expenditure which deserves comment is the storage, transport and commission, etc. The bigger cultivators whose area sown is three times more than that of the smaller cultivators, append almost eleven times more than the smaller cultivators. This is. firstly, due to the large produce of the bigger cultivators which needs to be taken to the markets proper for sale necessitating transport and other charges and secondly, because of the commercial crops 3which require some expenditure for processing, sales commission, etc. However, such expenditure per Rs. 100/of sales was Rs. 7/- for the bigger cultivators and Rs. 6/- for the smaller cultivators. The total expenditure per acre of sown area in more or less the same in both the groups of cultivators, it is about Rs. 26/- for the bigger cultivators and about Rs. 25/- for the smaller cultivators.

(10.11) In the following table, we give the payments to factors made by the two groups of cultivators:-

Table 10.7.

	Bigger cultivators	Smaller cultivators
Wages to annual farm servants	93	11
Wages to casual farm servants	128	32
Interest on loans	9	7
Total	230	50

The difference are obvious and immediately explicable. The bigger cultivators conduct their farm business with the aid of considerable hired labour, to a great extent, of the farm servant type. The small cultivators naturally employ little annual farm labour; and the casual labour which they employ is also an a per acre basis only about 70 per cent of what the bigger cultivators employ. It is not true, however, that on this account their farm are less attend to; their farms compare very well with the larger farms in their per acre gross produce suggesting there by that the smaller cultivator cultivates his land as efficiently as does the bigger cultivator with the aid of hired labour and larger expenditure on many items.

invite little comments:-

Table 10.8.

	Bigger cultivators	Smaller cultivators
Land revenue	24	9
Other expenditure	3	-
Total	27	9

(10.13) the expenditure in kind by the smaller cultivator is, however, proportionately larger than that incurred by the bigger cultivators. The difference is mainly confined to the items of farm yard manure and to some extent to the payments in kind for several items such as share rent, wages to harvesting, annual and casual labour, etc. In the following table, we give a summary of the expenditure incurred in kind by the two groups of cultivators:-

Table	10	.9
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	Bigger cultivators	Smaller cultivators
Homegrown seed	81.8	23.6
Farm yard manure	198.6	90.8
Share rent	20.8	21.2
Annual remuneration to artisans and service	62.8	16.0
Wages to harvesting labour	17.0	1.6
Other payments at harvest; wages to casual labour	-	-
Total	381.00	153.20

(10.12) in the following table are given (10.14) Use of homegrown seed per acre the other charges; the items are small and sown is almost the same for both the groups of cultivators. As noted earlier, expenditure on purchases of seed was also almost equal for the two groups of cultivators. The smaller cultivators, however, it seems, use more manure per acre than do the bigger cultivators. The total manure used per acre by the bigger cultivators amounts to about three fourth of that if the smaller cultivators. The smaller cultivators also preferred to meet the expenditure on other items in kind rather than in cash. As a result, the expenditure in kind per acre of sown area is more in the case of smaller cultivators by about 25 per cent than in the case of bigger cultivators. Share rent paid in kind forms a larger proportion to the total expenditure in kind in the case of smaller cultivators than in the case of the bigger cultivators where-as annual remunerations to artisans and services forms a larger proportion to the total expenditure in kind in the case of the bigger cultivators than of the smaller cultivators. The smaller cultivators were also noted to be paying proportionately more cash rent though the sum is compared to the rent in kind was small. The larger rentals paid by the smaller cultivators suggest that among them are possibly a few purely tenant cultivators or at any rates they cultivate proportionately larger tenanted lands

(10.15) we should summaries this dis- In the case of smaller cultivators, the cussion by saying that on a per acre basis, the smaller cultivator has about the same gross produce as that of bigger cultivator and with almost equal expenditure. From the farm business accounts it appears that the receipts from the gross produce barely sufficient to meet the expenditure in the case of the smaller cultivators and in the case of the bigger cultivators just leave with him a surplus of Rs. 2/ per acre. These, it should be noted, are the conditions in a normal year. It seems possible however that the reported gross produce was in many cases considerably underreported. More than 80 per cent of the area sown is under millets and other cereals which during the year under report were under the scheme of compulsory procurement of food grains by government. Some reporting bias in the reported gross produce is therefore understandable and expected. The cultivators have of course reported substantial cash receipts from other sources and which apparently form an integral part of their farm business. In the following table we give the details of these receipts for the two groups of cultivators. (table 10.10) Thus the receipts from sale of livestock and miscellaneous agricultural produce appear very important in the case of the bigger cultivators. Indeed they are so large that they are more than one-third of the gross produce of agricultural crops.

receipts from cash wages are naturally more important.

	Table 10.10.	Other	cash	receipts	per cultivator.
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	Bigger cultivators	Smaller cultivators
By sale of livestock and miscellaneous agricultural products	403.6	62.0
By sale of miscellaneous agricultural products	0.6	-
Cash rent	1.4	15.4
Interest	4.6	-
By carting	10.2	8.0
By cash wages	95.6	177.2
Remittances	15.2	21.0
	531.20	283.60

(10.16) The difference between the bigger and the smaller cultivators might be lighted by comparing high and contrasting two extreme groups of cultivators. The method by which the sample of 120 cultivators was selected has already been explained. For instance, from the ten per cent biggest cultivators from each selected village, two cultivators were chosen at random. This gives us a sample of big cultivators. At the other extreme from the 20 per cent smallest cultivators in each village, two cultivators were chosen. That gives a sample of 16 small cultivators. In the following table (table 10.11) we give a comparative statement of the average Farm Business Accounts for the two groups of cultivators. Thus the big cultivators are seen to end up in a cash deficit white the small

cultivators in a substantial cash surplus. Considering the balance in cash and kind, together, the big cultivators have an average balance of Rs. 477 while the average balance for the small cultivators is Rs. 277 which, though small, is not very much so.

Table 10.11.

		10% Biggest cultivators Rs.	20% Smallest cultivators Rs.
1.1	Cash receipts by sale of crops and fodder	380	22
1.2	Other cash receipts	453	275
2	Value of unsold produce	1368	181
3	Total receipts	2201	478
4	Cash Farm Expenditure	1052	105
5	Expenditure in kind	672	96
6.1	Cash Balance	-219	190
6.2	Balance in kind	696	87
7	Total payments	2201	478

(10.17) The average size of the cultivated holdings for the big cultivators in 32.7 acres. The same for the small cultivators is 2.4 acres which is about seven per cent of that of the big cultivators. Considering the area sown, it is 31.5 for the big cultivators and 3.4 for the small cultivators which is about 10 per cent of that of the big cultivators. If we relate the gross produce, both sold and unsold, to the area sown, we have gross produce per acre of sown area to be Rs. 55 for the big cultivators Rs. 60 for the small cultivators. The difference is small but is in favour of the smaller cultivators. (10.18) In the following we give the details of the expenditure incurred in cash and kind by the two groups of cultivators. The proportion of the total expenditure to gross produce, is almost the same in the case of both the group of cultivators. (table 10.12). Thus, per acre of sown area which is only one-tenth in the case of small cultivators as compared to big cultivators, the expenditure of the smaller cultivators is slightly more. This is merely on account of their proportionately larger expenditure in purchases of fodder and larger use of farm-yard manure. This is in accordance with earlier indication.

# Table 10.12. Details of Expenditure in cash and in kind per cultivator.

	10%	20%
	Biggest	Smallest
	cultivators	s cultivators
	Rs.	Rs.
Cash Expenditure		
Seed	93	9
Manure	100	6
Fodder	315	50
Cash Wages	253	20
Other cash expenditure	291	20
	1,052	105
Expenditure in kind		
Seed	135	13
Manure	368	64
Other payments in kind	169	19
Wages in kind	-	-
	672	96
Total Expenditure	1724	201

#### **XI. FARM BUSINESS - OTHER FACTORS**

(11.1) The system by which we have so far classified the cultivators both in the previous chapters and also in the chapters relating to the General Schedule data was in a sense artificial. The basic classification of course depends upon the size of the cultivated holdings of the cultivators; and thus as a size classification: its artificially lies in the fact that the ten per cent biggest cultivators in one village are added up to the ten per cent biggest cultivators in another village giving us a combined class. The ten per cent in different villages might not always be comparable in the sense that the size of their holdings might very over quite different ranges. The principal reason for adopting that method of classification while presenting General Schedule results was a certain technical convenience, arising out of the manner in which the village were selected. Combining the village figures on the basis of any other method of classifying the cultivators would have been rather difficult. The sample of cultivators chosen for the Farm Business survey was also chosen from the classes made on the same basis. There appeared, therefore, a certain advantage in presenting the Farm Business survey results also on that basis; the advantage lay, of course, in achieving comparability with the General Schedule results. As we see it now, in spite of the certain artificiality of classification, the difference

between the classes of cultivators so made were nevertheless remarkable. This is partly due to the fact, that even in their size of holdings, the divisions by ten per cent in different villages had certain similarities. affinity The greatest between the ten per cent biggest cultivators in different village was, of course, that in their own village, they were the biggest and quite apart from the size of their holdings that it connotes, this fact seems important in itself. The local community within a village being what it is and the means of communication between different village being what they are, there subsists a kind of relationship between the bigger and smaller cultivators, not so much because one possesses 50 acres of land and the other an acre of it, but because the two belong to two widely apart strata of the village community. The combined class of the ten per cent cultivators. biggest their in respective villages, therefore, though it certainly lacked in the size of holdings, formed in some important respects indeed a much more homogeneous group. It nevertheless, remains true that the classes so formed were a little artificial in the sense that they were not easily comprehensible. Therefore, we now propose to classify the selected cultivators in a more direct manner, such as, for instance, on the basis of the size and the type of their farm business.

on the basis of the size of their farm business. This might be indicated, as it usually is, by the size of the cultivator's holdings. Areas under different crops are, however, not of the same importance both from the point or view of the gross receipts and expenditure, and some allowance for this fact might be made by taking gross value of produce as the size tivators.

(11.2) we shall begin with the distinction indicator of farm business. We propose to do the same. In the following table, we give the percentage distribution of the selected cultivators according to the size of their farm business as defined, by the gross value of produce. In adjoining columns, we give the average size of cultivated holdings and the average value of gross produce for each group of cul-

Range of gross value of produce	Percent of all cultivators	Average cultivated holding acres	Average gross value of produce
Less than 200	21	2.6	137
200 - 399	22	5.9	291
400 - 599	10	8.8	456
600 - 799	8	16.8	704
800 - 999	11	11.4	953
1000 - 1999	20	22.1	1350
2000 and more	8	27.4	2356
Total	100	11.4	758

Table 11.1

(11.3) Average value of gross produce is shown in the last column. When from this are subtracted the expenses of cultivation, both in cash and in kind, we have the net value of produce which might be termed the cultivation surplus. From an accounting point of view, this comprises after making allowance for depreciation of capital assets of imputed wages for family labour and profits of cultivation if any. In practice, it is the balance available to the cultivator. In the following table we show the gross produce and deductions to be made for farm expenditure for each group of cultivators.

Range of gross value of produce	Average gross value of produce	Average farm expenses	Average net value of produce	Net as per cent of gross
Less than 200	137	196	-59	-
200 - 399	291	286	5	1.7
400 - 599	456	341	115	25.2
600 - 799	704	764	-60	-
800 - 999	953	752	681	19.0
1000 - 1999	1350	1501	-151	-
2000 and more	2356	2008	348	14.8
Total	758	745	13	1.7

**Table 11.2.** 

(11.4) In the last column of the above table, the net value of produce is shown as percentage of the value of gross produce. The figures do not exhibit any regularity to deserve comment.

(11.5) The farm receipts of the cultivator are often supplemented by some other receipts. As explained earlier, we have not taken in to account the receipts from non-firm business of the cultivators. When these are left out, the other receipts, are to some extent from sale of livestock products and of minor products of the farm, but largely from wages and carting. Their overall composition has already been indicated. In the following table, we give for each group of cultivators the farm and other receipts.

Range of gross value of produce Rs.	Average net farm receipts Rs.	Average other receipts Rs.	Average Total receipts Rs.	Other receipts as per cent of total Rs.
Less than 200	-59	282	223	126
200 - 399	5	206	211	98
400 - 599	115	114	229	50
600 - 799	-60	330	270	122
800 - 999	181	469	650	72
1000 - 1999	-151	1022	871	117
2000 and more	348	118	466	25
Total	13	408	421	97

**Table 11.3.** 

It is clear that in the first two groups of cultivators, the mainstay of the families is the other receipts which are mostly wages. Whiles discussing the proportion that the net value of produce bears to the gross value of produce in these groups, we suggest the possibility of understatement of gross produce. Even then the other receipts seem to be very important to most of the cultivators. With bigger farmers other receipts are likely to be more in the nature of subsidiary sales and some receipts of cash rent.

(11.6) The total receipts as shown in the last column of the above table, which are the balance resting with the cultivator, will be partly in cash and partly in kind. In the following table (table 11.4) we show them as divided in to these categories. Thus, due to the large amount of supplementary receipts, particularly by way of cash wages, the position of the smaller cultivators in respect of their cash receipts is much better. In the group of the bigger cultivators also the position is equally good. Only the middle group seems to have less favorable position as far as cash receipts are concerned. The unfavorable position in respect of cash balance is, however, exaggerated in so far as all payments, to annual farm servants have been classified as cash expenses. While in fact a substantial part of them are in from of board and prerequisites and also because part of the large balance in kind is saleable and will be entirely sold.

Range of gross value of produce Rs.	Average cash balances Rs.	Average balance in kind Rs.	Average Total balance Rs.	Cash Balances as per cent to total balances Rs.
200	169	54	223	76
400	54	157	211	26
600	25	204	229	11
800	83	187	270	31
1000	181	489	670	27
2000	351	520	871	40
- above	-378	844	466	-

Table 11.4.

(11.7) The cash receipts accruing to the mercial crops. In the letter category are cultivator as well as his cash requirements for farm expenditure, both depend, apart from the size of his farm, upon the If we divide the cultivators according to kind of crops that he grows. For this purpose, a broad distinction might be commercial crops bear to the value of all made as between food crops and com- crops we have the following (table 11.5)

included such crops as sugarcane, oilseeds, fruits and vegetable and fodder. the proportion that the value of their

Proportion of cash crops to all crops	Percent of cultivators	Average cultivated holding in acres	Average gross value of produce Rs.	Average value of cash crop in Rs.
0	28	5.9	292	-
Less than 20%	20	12.3	707	86
20% - 39%	25	12.6	747	248
40% - 59%	13	18.5	2014	511
60% - 100%	14	15.9	1535	1120
Total	100	11.9	758	302

Table 11.5

Thus in the case of less than one-fourth of the total sample cultivators, the value of commercial crops forms about half of their value of total gross produce, while in the case of about one fourth of other cultivators, cash crops are totally absent. In the adjoining column is shown the average cultivated holding for each group of cultivators.

(11.8) The commercialised farms grow more for the market, consequently a large proportion of their gross produce is sold and a smaller proportion retained for home consumption. In the following table are shown the proportions of the gross produce sold by cultivators in different groups. The facts are obvious and require no comment.

Proportion of cash crop to all crops	Average value of gross produce in Rupees	Sale proceeds Rs.	Sales as per cent of gross produce
0	292	46	15.7
Less than 20%	707	85	12.0
20% - 39%	747	124	16.6
40% - 59%	1024	308	30.1
60% - 100%	1535	602	39.2
Total	758	185	24.4

Table 11.6.

(11.9) It is to be expected that the farms commercialised to a greater extent would incur proportionately larger expenditure. In the following table, we show the per acre farm expenditure incurred by cultivator in different groups. (table 11.7)

(11.10) The same point is illustrated in a different manner in table 11.8, where we show for each group of cultivators, the average value of gross produce, the

average farm expenditure, the average value of produce which is the gross value minus expenditure, and finally the proportion that the net value bears to the gross value. It is clear that in farms which are comparatively less commercialised, the net value of produce is negative or in other words, proportionately larger expenditure is incurred to obtain the same gross produce.

Proportion of cash crop to all crops	Average cultivated holding in acres	Average farm expenditure in Rupees	Per acre expenditure in Rupees
0	5.9	380	64.4
Less than 20%	12.3	735	59.9
20% - 39%	12.6	807	64.0
40% - 59%	18.5	740	40.0
60% - 100%	15.9	1370	86.2
Total	11.9	745	62.6

Table	11.7
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**Table 11.8** 

Proportion of cash crops to all crops	Average gross value of produce Rs.	Average farm expenditure Rs.	Average net value of produce Rs.	Net value as percent of gross value Rs.
0	292	380	-88	-
Less than 20%	707	735	-28	-
20% - 39%	767	807	-60	-
40% - 59%	1024	740	284	28
60% - 100%	1535	1370	165	11

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(11.11) Another method by which cultivators might be classified on the basis of the crops they grow would be by their principal or major crop. In the large variety of crops that a cultivator grows it is indeed difficult to fix on one as his principal or major crop; nevertheless, as a matter of definition, we shall regard that crop which by value forms the largest proportion in the gross value of all crops, as the major crop. It should be noted that when so defined the major crop does not necessarily account for more than any 50 per cent of the total produce; it only means that by value of produce it is bigger than any other crop. In the following table (table 11.9) we give distribution of the cultivators by the major crop so defined. In adjoining columns of the table we show their average holdings and average value of their gross produce.

(11.12) In table 11.10 we show the relations between the net and gross value of produce for cultivators in different major crop groups. It should be noted that the gross and the net value figures do not relate to the specific major crops but to all crops grown by the cultivators in that major crop groups.

Major Crop	Percent of cultivators	Average culti- vated holding in acres	Average value of produce
Rice	15	3.9	415
Millets	65	13.3	669
Other crops	20	25.0	1303

Table 11.9.

Table 11.10.

Major Crop	Average gross value of produce Rs.	Farm expe nditure Rs.	Net Value of produce Rs.	Net Value as percent of gross value Rs.
Rice	415	241	174	42
Millets	669	737	-68	-
Other crops	1303	1144	159	12

(11.13) We have earlier seen that rent does not appear to be an important item of expenditure in farm business accounts of cultivators. Actually, 82 per cent of the cultivators do not pay any rent. In the case of 11 per cent cultivators the rent bears a proportion of less than 20 per cent to their gross produce; and in the case of the remaining 7 per cent cultivators, the proportion of rent to gross produce is between 10 to 50 per cent. In the following table we give the average holdings and the average gross produce of these groups of cultivators:-

Table 11.11.

Rent paid as per cent to total gross produce	Percent of cultivators	Average cultivated holding in acres	Average gross value produce
0	82	12.1	686
Less than 20%	11	15.3	1391
20% - 50%	7	5.0	603

In the following table (table 11.12) we business survey has bees classified in a give a brief statement of the farm business account of the tenant cultivators. Clearly, the tenant cultivators seem to conduct their farm business with profit.

number of ways; for instance, according to the value of gross produce, according to the proportion of cash crops to total crops, etc. However, the figures do not exhibit any regularity to deserve com-

(11.14) Information relating to the farm ment.

Per cultivator		Rs.	Per cultivator		Rs.
1.1	Cash receipts by sale of crops		4.	Cash farm expenditure	95
	and fodder	-	5.	Expenditure in kind	117
1.2	Other cash receipts	383	6.1	Cash Balance	288
2.	Value of unsold produce	246	6.2	Balance in kind	129
3.	Total receipts	629	7.	Total payments	629

Table 11.12.

# XII. CHARACTER OF CREDIT

(12.1) in chapter V, we examined the extent of annual borrowing and the purposes for which it was resorted to. Confining our attention to cultivators, we find the borrowing per that cultivator amounted to Rs. 193 of which Rs. 87 were for meeting capital investment in agriculture, Rs. 52 for meeting current farm expenditure and the remaining for family and other expenditure. Similar in formation is obtainable from the Farm selected Business survey of the cultivators. The figures on this basis of the Farm Business survey are, however, somewhat different. On the basis of the Farm Business survey, the average borrowing per cultivator was reported to be

Rs. 274 of which Rs. 158 were for capital investment in agriculture, Rs. 35 for current farm expenditure and the balance for family and other expenditure. Thus, the reported borrowing in the farm business survey are somewhat larger than these reported in the General Schedule, the borrowing on account of capital and current farm expenditure alone amounting to the total borrowing reported in the General Schedule. In addition the borrowing for family expenditure, in the farm business survey is nearly one and a half times the borrowing reported in the General Schedule.

(12.2) These differences are partly due to the variation inherent in the sample

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two sets of results do not refer to quite the same periods. Some difference might arise also from the difference in the method by which the data were collected in the two cases. As earlier noted, the General Schedule was filled in a single visit to the families and there the information related to the period of one year immediately preceding the day of visit. On the other hand the Farm Business survey of the sample cultivators was conducted in two visits and in each visit the information related to a fixed period of six months, from April to September in the first visit and from October to March in the second visit. It would be out of place to discuss in any detail the difference that these two methods of invitation are likely to cause. We might note, nevertheless, that in the second method, there is sometimes a possibility of enumerating larger number of transactions. This might perhaps be due to three distinct reasons. Firstly as the questionnaire relate to a shorter period, only six months, the respondent is likely to respond with better memory. Secondly, though the questionnaire relates to a fixed period such as from April to September, the visit does not usually take place immediately after the close of the reference period but sometime after, say in November or December. In such cases even though the investigator might try to fix the respondent to the reference period,

results and partly due to the fact that the he is likely to report all transactions to date of visit. This results in a certain amount of overlap between the two reporting periods which can be minimised only with considerable investigational care. Thirdly, the respondent is likely not to report two transactions which mutually cancelled during the period, such as for instance, borrowing and repayment. With shorter reporting period, there would be fewer such transactions having mutually cancelled and hence not reported. Having regard to these circumstances, the difference between the sample and the General Schedule results do net appear to be large enough to detract from their value.

> (12.3) The principal items of information obtained in the Farm Business survey which add significantly to the analysis of borrowing in chapter V on the basis of the General Schedule data, are details regarding amount, rates of interest and securities in addition to creditors and purposes of borrowing, for each loan taken during the year. In the following sections we shall present these details. In doing this, it might prove convenient and useful to divide all loans taken during the year in to two categories; one, of loans borrowed and fully repaid during the year and the other of loans borrowed but not fully repaid during the year, that is, of loans borrowed during the year, but which remained outstanding, partly or

wholly, at the end of the year. To these categories of loans, we might then add a third category, namely, of loans not borrowed during the year, which were outstanding at the end of the year, that is of loans outstanding at the end of the year which were borrowed sometime before this year. An analysis of these loans by the period over which they remained outstanding might be found particularly useful.

(12.4) For the sample of cultivators we have already noted that the average borrowing during the year was Rs. 274/- per cultivator. Out of this, loans worth only Rs. 7/- were fully repaid during the year. The remaining loans worth Rs. 267/were not repaid before the end of the year, which was the end of March. It is difficult to say whether on this account, we should treat only the first Rs. 7/- as being strictly short term credit. Our hesitation arises due mainly to two consideration; in the first instance, we chose the year from April to March; the repayments appear only in January and March and it is possible that they were substantial in the following April. It seems possible therefore, that if we had chosen the year say from May to April or from June to May, the proportion of loans fully repaid during the year might have been somewhat larger. Secondly, if we decide to call loans repaid within one year as strictly short term credit, some of the loans borrowed during the year which remained outstanding at the end of the year might not have been of more than one year's duration. In any case, some of the issues seen hypothetical and others difficult to settle without a more detailed examination of the material. Therefore, in what follows, we shall be content with treating Rs. 7/- worth of loans, which were fully repaid during the year and we feel that normally this proportion would be definitely very large.

(12.5) A distinction between the loans borrowed and fully repaid during the year and those borrowed but not repaid during the year and a separate analysis of the two classes of loans would have ordinarily proved useful. But in the circumstances where the loans in the first category are so small, a separate analysis of them does not seem useful. In the following therefore, we shall treat together all loans borrowed during the year.

(12.6) The loans borrowed during the year amounted to Rs. 274 per cultivator. Of these, loans worth Rs. 7 were borrowed and fully repaid during the year and of the remaining loans worth Rs. 267, only Rs. 66 were repaid, during the year. Most of these loans were borrowed in March and April and most of the repayments took place in the month of January.

(12.7) as to the size of these loans, there another 15 per cent of the total amount were 48 such loans per 100 cultivators. This gives an average of about Rs. 570 per loan. Only about 10 per cent of the total amount comprised of loans of less than Rs. 300 each; 20% of the total amount comprised of loans of Rs. 300 to Rs. 700 each; about 30 per cent of the amount comprised of loans of Rs. 700 to Rs. 1,500 each. The remaining amount consisted of loans of Rs. 1.500 and above.

(12.8) about 45 per cent of the amount was for capital expenditure in agriculture, about 20 per cent for current farm expenditure and the remaining for family expenditure. The government and the co-operative societies supplied about 2 the total loans. Among the private agencies, private moneylenders, agricultural moneylenders and traders and commission agents supplied 7 per cent, 14 per cent and 52 per cent, respectively of the total.

(12.9) About half of the amount was advanced without security; about onethird against immovable property and the remaining against commodities. 50 per cent of the total amount was interest free. at the rate of six per cent per annum; loans borrowed during the year.

was available at 12 per cent per annum. The balance about 20 per cent of the total was at higher rates - about 18 to 36 per cent.

(12.10) considering the total borrowing during the year amounting to Rs. 274/per cultivator, Rs. 158 were borrowed for capital investment in agriculture; Rs. 35 for current farm expenditure; Rs. 81 for family expenditure and other expenditure. The total investment in agriculture net of sales was Rs. 284, so that the borrowing on that account approximates to half of the total expenditure. On the other hand the cash expenditure on current farm account was Rs. 478 so that per cent and 20 per cent, respectively of borrowing on that account is about eight per cent of the total expenditure. As an alternative, we had enquired, how the current farm expenditure was met by the cultivators. The two main sources were, of course, income and borrowing. In the following table we give the total cash expenditure under the main heads and proportion of it which was financed by borrowing:-

(12.11) The total borrowing for current farm account is Rs. 38.5 which agrees about 15 per cent of the total amount was very well with the analysis by purpose of

Item	Expenditure Rs.	Of which met by borrowing Rs.	Per cent financed by borrowing
Seed	44.6	14.4	32.3
Manure	59.0	4.6	7.8
Fodder	194.6	6.4	3.3
Wages	79.6	10.7	13.4
Other	99.3	2.4	2.4
Expenditure			
Total	477.10	38.50	8.1

Table 12.1.

(12.12) it is clear that expenditure in purchases of seed is mainly financed by borrowing. About one-third of the purchases on that account are financed by borrowing. Payments of wages is yet another item which is also financed by borrowing to the extent of 13 per cent of the total expenditure on that account. Borrowing on other account is considerable.

(12.13) The average borrowing on family account is Rs. 81. As we noted earlier. this is one and half time more than that reported in the General Schedule. The family expenditure might be classified as we did earlier, in to three broad categories:- (1) consumer capital expenditure, mainly construction and repair of buildings, (2) Ceremonial Expenditure, mainly marriage and death ceremonies in to the following categories:-

and (3) normal family expenditure. The - selected families reported an average expenditure of (i) Rs. 93 and (ii) Rs. 81, respectively on the first two categories. The third category was not recorded. The corresponding figures from the General Schedule were Rs. 25 and Rs. 56, respectively, on the two items. The sample results differ very much from the General Schedule results because two sample cultivators together reported an expenditure on construction and repair of houses of Rs. 6,500/-. This resulted in disproportionate increase in the general average for the sample cultivators. If their cases are left out of consideration the revised average compares favourably with the General Schedule results. Similarly, in the case of expenditure on marriage and death ceremonies, 3 cultivators reported on expenditure of more than Rs. 1,000/- each. Without them, the average would be very much nearer the General Schedule average. The borrowings during the year on this account, however, seem to be reasonably small

(12.14) During the year, the repayments amounted to the extent of Rs. 151 per cultivator. This might be broadly divided

**Table 12.2** 

	Per cultivator repayment during the yea in Rs.
Towards loans borrowed and fully repaid during the year	7
Towards loans borrowed but not fully repaid during the year	66
Towards loans outstanding at the beginning of the year and not fully repaid during the year	33
Towards loans outstanding at the beginning of the year but fully repaid during the year	45
Total repayment	151

Repayments in the first category are of course to the full extent of the borrowing. In the second category borrowing amounted to Rs. 267/- per cultivator; the repayments, therefore, came to about 25 per cent only. If we put together the loans in the first two categories, that is amount borrowed during the year, the repayments comes to 27 per cent of the borrowings.

(12.15) The amount at the end of the year of the loans in the third category approximately Rs. 217. This was the amount outstanding after repayments of Rs. 33, so that the amount outstanding at the beginning of the year should be Rs. 250. The repayment is, therefore, about 13 per cent of the amount outstanding at the beginning. To these we might add

outstanding at the beginning of the year. It should be noted that these must be added both to the total outstanding at the r beginning of the year as well as repayments during the year. We have shown that out of Rs. 295 outstanding at the beginning of the year, Rs. 78, that is about 27 per cent was repaid during the year. Besides this, Rs. 274 were borrowed during the year out of which Rs. 73 were repaid during the year. The total debt outstanding at the end of the year thus comes to Rs. 418 as compared with Rs. 287 outstanding at the beginning of the year. The outstanding indebtedness per cultivators thus increased by 45 per cent during the year. This is in general agreement with the results of the General Schedule, though the outstanding indebtedness both at the beginning and at the end of the year as appearing in the General Schedule were considerably lower than those appearing in the farm business accounts. In the General Schedule results the indebtedness at the beginning and at the end of the year were Rs. 246 and Rs. 328, respectively, and thus recorded an increase of 33 per cent during the year.

(12.16) Of the Rs. 418, remaining outstanding at the end of the year as we have noted, Rs. 208 were borrowed during the year and were thus not outstanding for now Rs. 45, the repayment of which more than a year. The remaining Rs. 210 completely liquidated some of the loans were borrowed earlier and hence were

outstanding over more than year. In the investment in agriculture following is given their distribution remaining for current farm e according to the number of years over while of the 41 per cent of the which they remained outstanding:-

Table 12.3	
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Number of years outstanding	Amount in Rupees
Two or three Four or five Six or more	130 40 40
	210

(12.17) We might expect that the loans outstanding over a longer period might differ to some extent from the loans borrowed during the year and hence outstanding for a shorter period. As to their size they do not show any difference. But they certainly differ in the purpose for which they were borrowed. If purposes are divided only in to two board categories, namely farm and family expenditure we find that 71 per cent of the amount outstanding for one year or less was for farm expenditure and the balance for family expenditure. In the case of the loans outstanding for one year or more, 41 per cent of the amount was for farm expenditure, 15 per cent for non-farm capital expenditure and the balance for family expenditure. The subdivision of the borrowing for farm expenditure also shows some difference. Of the 71 per cent loans in the first category, 58 per cent were for capital investment in agriculture and the remaining for current farm expenditure while of the 41 per cent of the loans in the second category, about 38 per cent was for capital expenditure on farm and the balance of 3 per cent for current farm expenditure.

(12.18) there are no grain banks or organised institutions for the supply of grain loans to cultivators. However, a few grain loans were reported. There were about 9 grain loans borrowed and fully repaid during the year amounting to 777 seers of rice. Thus, the average size of the loan comes to about 86 seers of rice per loan. These loans were taken exclusively for family expenditure. There were 8 grain loans which were borrowed but not fully repaid during the year, accounting to 585 seers of rice. The size of the loans in this case, thus, comes to 73 seers of rice per loan. The loans outstanding at the end of the year amounted to 585 seers of rice and these loans were outstanding for about a month.

(12.19) in a classification by creditors, share of the government in loans outstanding for more than one year is about 16 per cent of the total as against two per cent in the loans outstanding for one year or less. Another striking feature is that the traders accounted for only four per cent in the longer period loans as against their

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share of 52 per cent in the loans out- of the amount of the loans was at six per standing for one year or less. As against this. share of the the private moneylenders in the longer period loans was 52 per cent against their share of about 7 per cent in loans outstanding for one year of less. The share of the cooperative societies was about 13 per cent of the total loans outstanding for more than a year; in the case of the other creditors there is no striking feature which invites any special comments.

(12.20) in the case of the longer period loans, 38 per cent of the total were advanced without any security, (i.e., personal security) about 60 per cent against bullion and ornaments and the remaining against other movable assets. All these proportions differ considerably from those in the loans outstanding for one year or less. The corresponding percentages were 64 per cent, 27 per cent and 9 per cent, respectively. Thus, short term loans can be had against personal security but for getting long term loans gold is required to be pledged.

(12.21) the rates of interest also differed considerably. As much as 38 per cent of the total amount borrowed for less than one year's duration was interest-free while it was only 9 per cent in the case of loans for longer period. About 54 per cent following chapters.

cent to 12 per cent rate of interest for the first category as against 62 per cent of the amount of loans in the latter cases. Only seven per cent of the amount in the first category was at the rate of interest above 12 per cent while in the latter case it was about 25 per cent of the total amount.

(12.22) Thus traders and relatives provide for short terms loans at low rates of interest and some-times even free of interest. But there is a clear field for professional moneylenders for loans of longer duration. Government's share as well as that of the co-operative societies is about 30 per cent of the total loans of longer duration; but the private moneylenders provide more that half of them. Most of such loans are against bullion or ornaments and the rates of interest is usually between 18 and 36 per cent. It is obvious that the profession does not take notice of the existing legislation.

(12.23) For a better appreciation of the limitations of the Government finance and the co-operative credit which leave a large field to the trader or the professional moneylender, it would be necessary to examine the structure and working of these various credit agencies in greater detail. We propose to do this in the

## XIII. GOVERNMENT - OBJECTIVES AND MEASURES

(13.1) It was noted in the earlier chapter that the share of the Government in the supply of credit was nearly ten per cent of the total credit supply during the year. The Government loans were mainly for capital investment in agriculture; in fact as much as 90 per cent of the loans were sanctioned for capital investment in agriculture; about three per cent for family expenditure and the balance for other purposes. It will be thus seen that the loans sanctioned for family expenditure formed a low proportion to the total. Such loans were mainly disbursed in what is known as "Mawal" area of the district which is deficit area. The small share of the Government in the supply of credit for family expenditure suggests that the advances were inseparably mixed up with borrowing for agricultural purposes. As regards the share of the Government in the loans raised for capital investment in agriculture, it was nearly 25 per cent of the total, or a little more than 133 per cent of the share of the co-operative societies. By duration the Government loans are allowed to stand for a longer time. However, the outstanding loans to the Government in the total amount outstanding were about 12 per cent only. The finance emanating from the Government, therefore, appears to have some distinct characteristics and its potential importance should be greater than what its volume indicates. Besides providing of actual finance, the Government of course can influence to a great extent, the credit and the general agricultural situation. In this chapter, we, therefore, propose to examine in some detail, the objectives of the government as indicated by the legislative provisions and the consequent measures and their operations in practice.

(13.2) There are two legislations enacted by the State Government which are calculated to affect the general agricultural organisation as it exits today. They are the Bombay tenancy and Agricultural Lands Act and the Bombay Prevention of Fragmentation and Consolidation of Holdings Act.

(13.3) The Bombay Tenancy and Agricultural Lands Act of 1948 was a substantial revision of the earlier Bombay tenancy Act of 1939. The primary objective of the Act, as of its predecessor, is to give protection to tenant personally cultivating lands from being evicted from the land so long as he regularly pays a reasonable rent. The rent, if not mutually agreed upon, is to be settled by the Mamlatdar, who is the taluka revenue officer; but is stipulated not to be more than one-fourth of the irrigated crops and one-third of the dry crops. An important provision is that when suspension or remission of the land revenue is granted

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by Government, the tenant is entitled to suspension or remission of rent in the same proportion.

(13.4) The second important provision of the Act is the limit that it seeks to put on the size of cultivated holding of a cultivator. It has been put at 50 acres. Thus ordinarily, under certain conditions, when a landlord desires to cultivate a rented land he can terminate even protected tenancy; but if this leads to an increase in his cultivated holdings beyond 50 acres, he cannot do so. On the other hand, a protected tenant has a right to purchases from the landlord the land in the tenant's cultivation, and if the price offered by the tenant is not acceptable to the landlord, the tenant may apply to the tribunal for determining the price and when he deposits the amount fixed by the tribunal, the tribunal declares him to be the possessor; but this can only be done when the purchase does not result in the tenant owning more than fifty acres of land.

(13.5) The third objective of the Act is to restrict the alienation rights in land. The act invalidates all sales, gifts, mortgages, leases of exchanges of an agricultural land in favor of a person who is not an agriculturist. A landlord intending to sell his land must sell according to prescribed priorities; the tenant who is actually cultivating the land; cultivator of the adjoining lands; a cooperative farming society and any other agriculturist and in that order. Further, land purchased by the protected tenant under the provisions of the Act cannot be sold, mortgaged, gifted, exchanged or leased without the prior sanction of the government.

(13.6) Bombay Prevention of Fragmentation and Consolidation of Holdings Act of 1947 was enacted with a view to preventing fragmentation of agricultural lands and promoting consolidation of agricultural holdings. In order to prevent fragmentation, under this Act, Government by a notification specifies the area - a village or a taluka or a Mahal where the Act is made applicable. In order to prevent fragmentation a standard area for each class of land is determined and fragments of area smaller than the standard area are not allowed to be sold or transferred in any way unless they become merged to form a piece of more than the standard area. No land in the area is allowed to partition under any circumstances which might result in fragments of area smaller than the standard area.

(13.7) For promoting consolidation of holdings in the area, a consolidation officer is appointed who in consultation with the cultivators concerned, prepares a scheme providing for mutual exchange of fragments between the cultivators. Under certain conditions, the scheme can provision seems contrary to the promobe enforced even in face of opposition of tion of large-scale farming. In so far as it some landlords.

(13.8) Apart from their effect on the general agricultural organisation these provisions affect, to more or less extent, the demand for and the supply of agricultural credit. A protected tenancy might be expected to incur larger expenditure on land improvements. On account of the restriction on the alienation right in land and the prescribed purchaser priorities, the land value are likely to be affected in favour of the tenant-would-be purchaser and we might expect him to be induced to purchase land. On both these accounts, the demand for credit is likely to be enhanced.

(13.9) previsions seeking to put an upper limit on the size of cultivated holding, it should be understood, do not all necessarily arise out of narrower considerations of efficient agricultural production. Basically, they must be based on considerations of social justice. The inequalities that exist in the sizes of cultivated holdings and in the ownership of agricultural capital have been described in earlier chapters. There is little need for an argument to justify a provision promoting greater equality. From the narrower point of view of alternative employment, it might be efficient agricultural production, the considered irrational to tie down a family position is less certain. At any rate, the to too small a piece of land even though

restricts the activities of the more enterprising of the cultivators, as an indirect and long term effect, we might hope that in course of time it will modify the extreme individualistic character of our agricultural communities and promote the growth of, if not genuinely co-operative, at least joint or collective effect

(13.10) The prevention of Fragmentation and Consolidation of Holdings Act does not, it should be noted, directly provide for any lower limits to the size of the cultivated holdings. The provisions of the Act are based more on the considerations of agricultural technology rather than on general considerations of agricultural economy. Nevertheless, where the whole holding itself is less than of the standard area prescribed for a plot, it will be seen that the Act would gradually eliminate such holdings. The desirability of putting a lower limit to the size of the holdings, is felt, probably on two distinct considerations. Firstly, it might be assumed that holdings below a certain size might not be efficiently cultivated. Secondly, in so far as responsibility of cultivating a price of land, however small, ties down a family to land does not release it for

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the total agricultural production as such might not suffer. From the point of view of our immediate interest, this act is however, of relatively minor interest.

(13.11) From the point of view of supply of credit to agriculturist, the restrictions which Tenancy Act places on the alienation rights in land, are probably the most important. As we have seen the assets of the agriculturist comprise overwhelmingly of land. Therefore, the restrictions on the alienation rights in land naturally reduce the value of his assets as backing to his borrowing capacity. There is an old view that it is because of his unrestricted alienation right in land that the agriculturist has been so far rather improvident in his borrowing. In so far as this is true, the restrictions on the alienation rights, though they may prove inconvenient in the beginning, should prove beneficial in the long run.

(13.12) there are two legislations more directly concerned with agricultural credit, one calculated to give relief to agricultural debtors and the other to regulate the business of private moneylenders. Relief to agricultural debtors by adjusting or scaling down of their outstanding debts was first provided by an Act 1939. The provisions of this act, were, however, made applicable to only a few talukas and Debt Adjustment and Conciliation Boards appointed for the to exceed the dues out of principal.

purpose. The number of applications for conciliation and adjustment received by these boards were, however, too numerous and their disposal was too slow. Little progress, therefore, could be made and the net result of the Act was to give the creditors and moneylenders sufficient notice to effect recoveries of sold debts. The process was aided by the rising prices of agricultural produce so that before the Act of 1939 was repealed and the new Bombay Agricultural Debtors Relief Act of 1947 enacted, it was believed, the magnitude of the problem was greatly reduced.

(13.13) The new act requires all creditors to submit to the court details of their dues before a prescribed dates; debts in respect of which no statement is submitted to the court by the creditor are deemed extinguished. The act then lays down rules by which the court about scale down and adjust debt of a debtor making an application for the purpose. The adjustment is to proceed briefly as under: For debts older than 1931, the rate of interest is not to be more than 12 per cent and all dues are to be reduced by 40 per cent; for debts between 1931 and 1940, the rate of interest is not to be more than 9 per cent and all dues to be reduced by 30 per cent; finally for debts after 1940, the rate of interest is not to be more than 6 per cent and the dues on interest account are not

Finally, if the total debt so adjusted Act requires all moneylenders to be regexceeds 60 per cent of the value of the property of the debtor, all debts are further reduced pro rata. Act requires all moneylenders to be registered and licensed to carry on the business of moneylending in a specific area. The license is valid only for one year

(13.14) the debtor is to pay off the adjusted debt in equal instalments, not more than twelve in number. If the debtor fails to pay any instalments due, the same may be recovered though the collector as arrears of land revenue. In such cases, the court might also order sale of property of the debtor and if the court thinks that the debtor is incapable of paying annual instalments, it may declare him to be insolvent.

(13.15) Presumably for speedier and also for more regular operation of the adjustment process, the new act abolished the adjustment boards set up under the old Act and empowered the civil courts to deal with adjustment applications under the new act. We do not know whether this is likely to speed up the adjustment process. Apart from usual difficulties associated with civil court procedures, the principal difficulty appears to be the large number of ignorant applicable made by debtors which in fact are outside the scope of the Act.

(13.16) the Bombay moneylenders Act of 1946 is designed to regulate and control the business of the moneylenders. The Act requires all moneylenders to be registered and licensed to carry on the business of moneylending in a specific area. The license is valid only for one year and must be renewed. In order to regularise the moneylender's accounts, the Act requires him to keep them in a prescribed form and to inform the Registrar of every loan made by him within 30 days of making the loan and to pass plain and complete receipts for every dues received from the debtor. The rates of interest are to be fixed by the Government from time to time; at present they are at 6 per cent for secured and 9 per cent for unsecured loans.

(13.17) As we have earlier noted. The majority of loans made by private moneylenders earn interest between is to 24 per cent. This is because most of the loans are not made by licentiate moneylenders. In fact there is very little registration and even when a moneylender is registered and licentiate a large part of his business is outside the prescribed accounts. There is little doubt that a substantial part of the private moneylending in the district, as in other district, as in other district of the state, is outside the scope of the Act. Principal difficulties in an effective enforcement of the Act seems to be firstly, the large amount of moneylending that takes place within a village, which, it is obviously difficult to control by any act of legislation. Secondly, not all the

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moneylending is done by professional of the 23 smaller cultivators answered in moneylenders who would take the trouble or getting registered and maintaining accounts in prescribed forms; a substantial part of it is in the nature of one cultivator lending to another not very different from himself. Thirdly, the business of moneylending is often combined with other business such as trading and an accounting separation of the two is difficult. Finally, of course, is the general distrust with which the moneylenders look upon government regulation and ingenuity and influence which they command to escape the same.

(13.18) A special questionnaire was issued enquiring whether the cultivator thought that the difficulties experienced in obtaining adequate and finance were due to or related to any legislation or other government. All the cultivators selected for the study of their farm business survey were requested to answer this questionnaire. In the following, we shall briefly describe their response to this questionnaire.

(13.19) the basic question was: "what are the difficulties you experience in obtaining adequate and prompt finance?" 73 of the bigger 80 cultivators and 35 of the smaller 40 cultivators answered. To the following question "Are any of these due to any legislation or other action of government?" 23 of the 49 bigger and 13

the affirmative. In the next question they were asked to "mention the laws" that they thought were responsible for these difficulties; 19 bigger and 11 smaller cultivators reported that they were due to the "Moneylender's Act". In the following are given briefly what they thought were the effects of this legislation.

(13.20) "due to the moneylenders" legislation, it was becoming difficult to obtain loans from private moneylenders; and the Government or the credit societies have net been able to supply speedy and emergent credit which the private moneylenders provided. "The moneylenders cannot operate without a licence; most of them have no licences; hence they say that their lending will be illegal and hence, charge high rate of interest." "There used to be a great deal of mutual accommodation amongst the cultivators; due to the Act, this is becoming difficult." "On account of the debt adjustment boards, the relations between the creditor and the borrower are very much strained."

(13.21) Among the selected cultivators only one had reportedly obtained a loan from the government during the year. He reported that he received the whole amount which he had applied for, within one month from the date of application. 3 of the bigger cultivators had applied for
case, the application was rejected while in, the remaining cases, the applications were still under consideration at the theme of our enquiry.

(13.22) the Moneylender's Act of 1946 and the Agricultural Debtors' Relief Act of 1947 are in a sense negative aspects of the government policy. In its positive aspect, the government operators principally under the provisions of the ancient Acts, namely, the land Improvement Loans Act of 1883 and the Agriculturists' Loans Act of 1884. The first act provides for government loans for agricultural investment specifically related to land improvement; in fact, under the Act, improvement is defined as works adding to the letting value of lands. The second act provides for loans for agricultural purposes not covered by the first Act, in particular for current farm expenditure such as purchase of need, fodder, manure and such items of capital expenditure as purchase of livestock and implements.

(13.23) Loans under both these acts are made through the revenue department. Applications for loans under these Acts are usually made to the Avval Karkoon, who is the head clerk of the Taluka Revenue Office. The Head Clerk then makes enquiries particularly relating to the securities offered. Applications without tangible security are usually

government loans during the year. In one rejected. After he is thoroughly satisfied himself about the particulars, the applications are submitted to the Mamlatdar, who is the Taluka Revenue Officer for sanction. The Mamlatdar is authorised to sanction loans up to Rs. 1,000/- under the Land Improvement Loans Act and up to Rs. 200/- under the agriculturists' Loans Act. Loans of larger amounts require the sanction of either the Prant Officer or the District Collector.

> (13.24) loans of small amounts, such as are made under the Agriculturists' Loans Act, are paid in a single instalment. Loans of larger amounts are paid in two or more instalments and at appropriate times so that the borrowers may not be tempted to use then for other purposes. Recoveries are usually made by means of equated payments over a number of years according to the purposes of the loan. Loans under Agriculturists' Loans Act are usually of shorter duration; loans for seed and manure are usually or one year's duration; loans for fodder, minor implements and for grain for consumption are allowed for two years; loans for construction of houses and purchases of cattle and durable equipment are allowed for four years. Loans under the Land Improvement Act are of longer duration and according to the amounts involved and the repaying capacity of the borrower, might be recovered by instalments spread over up to 20 years. All loans,

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except under some special schemes, usually carry an interest at 5.1/2 per cent per annum.

(13.25) Relevant records are maintained in the taluka revenue office. Individual cases with all relevant papers including these relating to each case are preserved until the case comes to an end either through complete recovery or otherwise. Rejected applications are, however, destroyed at the end of each year.

(13.26) The old Land Improvements Loans Act of 1883 was supplement in a significant manner by the Bombay Land Improvement Schemes Act of 1942. The Act was first enacted and thereafter amended with a view to making and executing schemes relating to construction of tanks, embankments and other works leading to improved water supply; schemes relating to prohibition and control of grazing, preservation of soil and scheme of dry framing and reclamation of waste and water-logged lands. Under this Act, for each district, a board is constituted consisting of the District Collector, District Agricultural Officer, Divisional Soil Conservation Officer and two non-official members. This board prepares schemes for land improvement and is empowered to execute them. A draft scheme for a particular area is prepared and published for information. An enquiry officer then considers any

objections from interested parties. The Board finally sanctions the scheme with or without modifications. Every owner of land included in the scheme is required to pay the prescribed costs of improvement works carried out by the government on his lands. Persons whose lands are not directly included in the scheme but are likely to be benefited by such works, are also liable to pay prescribed contributions either to government or to an appropriate landowner. The schemes are partly subsidised and the costs charged to the landowners, are recovered over a period. The collective element appearing in the scheme is essential for carrying out any concerted scheme of land improvement, such as of contour bunding. In so far as the work is directly handled by the Government and then the costs are charged to landowners, it ensures that the credit advanced is actually advanced is actually is expended for the avowed purchases.

(13.27) In recent years, the Government has initiated a number of schemes under which loans and subsidies are given for agricultural purposes. Most of these schemes come under the Grow More Food Campaign and are under the administrative control of the Department of Agriculture. One such scheme is the Well Scheme for construction of new wells and improvements of existing ones. The scheme has been in operation since

April, 1947. An application for either a irrigation sources and for land improveloan or a subsidy or both is made to the Rural Development Board. A revenue officer and a well inspector make enquiries relating to the particulars. If the application is approved, the Chairman of the Board is authorised to disburse the first instalment. In the case of new wells, the subsidy is to the extent of 25 per cent of the cost of construction subject to a maximum of Rs. 500 and is paid in three instalments, as various stages of the completion of the work. Loans are made in two installments and are charged at  $3\frac{1}{4}$ 

per cent and are recovered in ten annual Other equated installments. similar scheme are subsidy for compose pits and vegetable seeds; small bunding schemes and schemes for lift irrigation.

(13.28) the major grievance against government loans is the long period between the application and its sanction as also the high costs that the applicant is reported to incur in travel and in satisfying local lenders and petty government officials whose influence seems decisive.

(13.30) A consolidated and classified statement relating to total Government finance in the district for the year 1949-50 and 1950-51 were made available by the district office. In the following table, we give the available information. (table 13.1). Loans for well digging and other ment and bunding were sanctioned under the Land Improvements Act and the remaining under the A.L Act. The amount disbursed by way of loans in 1950-51 was less than the disbursements in 1949-50 and amounted to nearly 60 per cent of the previous year's disbursements. The proportion of disbursement for well digging and land improvement to the total loans disbursed was almost equal in both the years; while the disbursements on account of loans for the purchase of seed showed a considerable fall. This was mainly because of the Government's decision to entrust the work of distribution of potato seed and manure to the Poona District Cooperative purchases and Sale Union, Ltd. Proportion of loans sanctioned for other purposes to the total loans disbursed had a higher proportion in 1950-51 than in 1949-50.

**Table 13.1. Government Finance for Agricultural** Purposes.

Item	1949-50 in	1950-51 in
	Rs.	Rs.
Seed	8,88,530	3,84,235
Fodder	22,241	7,655
Manure	1,54,167	10,509
Implements	16,500	500
Purchase of draught animals	5,43,325	4,19,680
Well digging and other irrigational sources	5,19,012	3,76,540
Land improvement and bunding	5,32,211	3,26,519
Consumption	6,148	7,710
Other purposes	78,835	1,94,335
Total	2,760,969	1,727,683

(13.31) In order to study the operation of the Government loans, a few case studies of loan applications made during the year 1950-51 were undertaken. The cases were selected at the five taluka offices (Haveli, Baramati, Sirur, Khed, Purandhar) by a process which would approximate to random procedure as far as practicable. However, one could not be certain whether all applications for government loans under various schemes would be found in the taluka revenue office: and the volume of the records and the manner in which they were stacked often made it difficult to keep to all procedural details designed to ensure a properly random sample. It is possible, therefore, that the sample of case studies was not strictly representative of all the government loans. In the following, we shall submit the results of the case studies.

(13.32) In all a sample of 125 loan applications for a total of Rs. 1,64,587 were selected for study. Of these 25 applications worth Rs. 43,350 were not sanctioned; that was how the cases were selected and it is not to be supposed that, say about 26 per cent of the applications made were rejected. Of the 26 rejected cases, 6 were rejected for lack of security, 5 because the purposes for which the applications were made, were not approved and two other cases were rejected because the applicants had old government dues. The remaining 13 applications were rejected for a variety of miscellaneous reasons.

(13.33) The 99 sanctioned applications asked for Rs. 1,21,237. Not all of them, however, were sanctioned to the full extent; the total amount sanctioned against them being Rs. 93,175, which is about three-quarters of the amount applied for Rs. 84,104 of this amount was actually disbursed during the year. In the following table we give the purpose for which these loans were sanctioned and the corresponding amounts sanctioned in the year 1950-51:-

Table 13.2.

Items	No. of cases	Amount sanctioned in Rs.
Bunding and other land improvements	13	15950
Digging and repair of wells	29	55100
Livestock	35	9550
Implements and machinery	2	5000
Seed	1	338
Other farm expenditure	2	606
More than one purpose	17	6631
Total	99	93,175

The above distribution of the sanction amount differs markedly in some respects from the similar distribution of the total government finance in the district. There the loans for the purchases of

bullocks were nearly one-fourth of the total loans while in the sample it is nearly one-tenth of the total. Similarly, amount sanctioned for seeds in the district is nearly one-fifth of the total whereas in the sample it is less than one per cent of the total. Well digging and repairs accounted for nearly one-fourth of the total in the district whereas in the sample it accounted for more that half of the total. Amount sanctioned for bunding and other land improvements, however, bears the same proportion to the total in both the cases. Unfortunately our district figures are not sufficiently firm to call for any comment on the divergence of the sample figures; in any case, the sample figures do not refer to the whole of the district but only to the respective talukas. Hence, our further discussion based on the sample cases, is naturally restricted by those limitations of their respective character.

(13.34) In the following table (table 13.3) we give the distribution of sanctioned loans by the amounts sanctioned. Thus about one-third of the loans were of amounts of Rs. 1000 or more; but they accounted for more than 75 per cent of the total amount sanctioned. All the loans except 4 loans, sanctioned against commodities (agricultural produce) were

sanctioned against immovable property. The rate of interest was three per cent for 30 loans which were mostly for welldigging. 2 of the loans were interest free, 4 others at 2 per cent and one loan at 9 per cent. The remaining 62 loans were sanctioned at 5 1/2 per cent which is the usual rate of interest for government loans.

Table 13.3.

Range of amount sanctioned	No. of cases	Total amount sanctioned
Less than Rs. 100	4	300
Rs. 100 - 299	36	7,349
Rs. 300 - 499	13	4,620
Rs. 500 - 999	12	7,656
Rs. 1000 - 4999	31	56,250
Rs. 5000 and above	3	17,000
Total	99	93,175

(13.35) In the following table (table 13.4) is given the distribution of the sanctioned loans by the duration for which they were sanctioned, which in the case of government loans would mean the period over which the repayment was to take place by means of equated annual installments. It should be noted that though only 34 per cent of the loans were of five years duration, they accounted for more than 72 per cent of the total amount sanctioned.

Duration of loan	No.	Amoun
		t
Less than 3 months	1	2,500
3 - 6 months	5	1,300
6 - 9 months	-	-
9 - 12 months	9	4,098
1 - 2 years	4	600
2 - 3 years	25	7,250
3 - 4 years	13	5,550
4 - 5 years	3	3,000
5 years and over	34	66,850
Those who have not stated the dura-	5	2,027
tion		
Total	99	93,175

 Table 13.4. Number and amount of loans

 sanctioned by duration

(13.36) a frequent grievance made against government loans is that it takes too long a time between the application and the sanction. In the following table (table 13.5) we give the distribution of the sanctioned loans by the time lag between application and sanction. About onethird of the loans were sanctioned within two months, an equal number within two to four months and the rest after four months. From the point of view of proper utilisation of loans, it is necessary that the loans should be disbursed with greater speed. However, taking into account the multitude of jobs that the revenue department has to handle, there is less likelihood of any speedier disposals.

Table 1.	3.5. No. ar	nd Amount o	of Loans by	Time Lag	Between A	pplication and	Sanction

Time lag between date of application and date of sanction	Number	Amount applied for Rs.	Amount sanctioned Rs.
On the same day	1	250	150
Less than 1 month	15	12725	11725
1 - 2 months	18	22825	17725
2 - 3 months	25	14930	14800
3 - 4 months	6	9250	8750
4 - 5 months	8	20000	14300
5 - 6 months	3	4650	2050
6 - 7 months	2	1519	1144
7 - 8 months	2	620	324
Over 8 months	17	33568	21457
Not ascertainable	28	44250	750
Tota	al 125	164,587	93,175

(13.37) Other major grievance, of course, relates to the cost which the applicant has to incur in travelling to the taluka place and as is reported, satisfying the local leaders and petty government officials. The multiplicity of schemes and indiscriminate haste with which some of the schemes initiated were certainly encouraged mal-practices. Particularly when subsidy is disbursed, it leaves enough scope for misuse and influential persons manage to get a major share of Similarly, the petty supervising it. authorities can misuse the loans by accepting small bribee from the defaulters. Instances are not uncommon where false reports were and the defaulters protected by the local officials. The mixing up of a subsidy with proper credit schemes, as already noted, has a most undesirable and demoralising influence.

(13.38) Along with the Farm Business Survey, we had canvassed a questionnaire relating to the credit needs of the selected cultivators. The questionnaire as well as the answers to this questionnaire are in their nature, hypothetical. Nevertheless, we might present the material as being relevant to the Government policy and measure.

(13.39) 79 of the bigger 80 and 37 of the smaller 40 cultivators responded to the questionnaire relating to their credit needs. 54 of the bigger and 29 of the

smaller cultivators answered in the affirmative, to the question: "Do you experience difficulties in meeting expenses for current agricultural operations due to lack finance.?"

(13.40) In a subsequent question, the cultivators were asked whether they had any plans for developing their farms; and if so, in what way. In the following table, we give the various questions which were put to them and the number of cultivators who answered the questions in the affirmative. It should be understood that categories of development were not mutually exclusive, that is to say, the same cultivator could answer in the affirmative to more than one question. The remaining cultivators just did not answer. The cultivators were also asked as to the approximate amounts they required for the proposed capital or development expenditure. In adjoining column, the total amounts required by the reporting cultivators are shown. (table 13.6)

(13.41) 48 of the bigger and 27 at the smaller cultivators were prepared to offer land as security. They answered that they would be willing to pay interest at 6 per cent per annum. 23 of the bigger and 16 of the smaller cultivators wanted loans of 1 to 5 years' duration while 24 of the bigger and 10 of the smaller cultivators wanted them to be of still longer duration.

(13.42) as a related aspect of the problem, we had also issued a questionnaire to the same cultivator regarding the forms of savings which they prefer. In answer to this questionnaire, only one of the bigger cultivators reported that he had a postal savings bank account. 19 big and 8 small cultivators reported that they had shares national savings certificates, etc.

and deposits of co-operative societies. 3 of the bigger and 1 of the smaller cultivators had deposits with private bankers or shopkeepers. The remaining either did not answer to the questionnaires or said that they had no savings of any forms enumerated, such as, postal savings,

Question	No.	Bigger cultivators Amount required Rs.	No.	Smaller cultivators Amount required Rs.
Do you desire to purchase bullocks?	10	3650	6	1750
Do you desire to:- purchase implements and machinery?	1	300	2	500
Spend money on bunding, land improvements and land reclamation?	27	20425	15	5700
Increase the size of the holding by tenancy?	-	-	-	-
Increase the size of the holding by purchase of land?	3	1800	2	900
Dig wells in your holding?	22	33700	9	9800
Make use of other irrigation sources?	-	-	-	-
Undertake more remunerative but costly crops like cash crops or garden crops?	-	-	-	-
Total		59,875		18650

Table 13.6.

(13.43) As to the reasons why the cultivators did not prefer savings in the above mentioned institutional forms. 27 of the bigger and 9 of the smaller cultivators reported that they had no margin for (13.44) 89 cultivators answered to the

savings; 9 of the bigger and 4 of the smaller cultivators preferred to retain cash to purchase land or build a house.

question; "Do you know that there is postal savings bank", 4 in the affirmative and the remaining in the negative. Of the 4 cultivators who said that they know about the postal savings bank, only 3 know the rate of interest that the postal savings bank pays. 8 cultivators stated that they did not have a postal savings bank account because no local facilities were available and hence there were difficulties in withdrawals. There was hardly any response to the other parts of the questionnaire.

### XIV. CO-OPERATIVE CREDIT -ORGANISATION AND STRUCTURE.

(14.1) In the proceeding chapter, while describing the government objectives and measures, we divided them in to two broad categories of what we called the negative and positive aspects of the Government policy. Under the first came the measures primarily directed towards reformation of the profession of the private moneylenders and the amelioration the conditions created by of the unrestricted practices of these gentleman over long years. Under the second aspect of the policy, attention was confined to the government efforts to supply credit to agriculturists directly. It was thought that the extension of the government credit has in some respects been indiscriminate and unimaginative and has led to corrupt practices, to which both the government official and the borrower are parties. In

this chapter, we examine a third aspect of the government policy, which falls in between the two, but which in a sense, is one of enduring and permanent value, namely, the government efforts to sponsor and faster co-operative effort generally and co-operative credit in particular. Thanks to the persevering official and non-official efforts, the co-operative movement, it seems has found its roots in this district.

(14.2) At the beginning of the year 1952, there were 324 primary agricultural credit societies in this district. Besides there were 98 multi-purpose societies and 9 marketing societies. There was also a district Central co-operative bank and a district Land Mortgage Bank in the district.

(14.3) The Co-operative societies are registered under the Bombay Cooperative societies act of 1925 which has been amended from time to time. All powers under this Act are conferred in the registrar of Co-operative Societies who is responsible for the operations of the Act. The object of the legislation is to facilitate the formation of co-operative societies for the promotions of thrift., self-help and mutual aid among persons with common economic needs. Though, therefore, the Act provides for the information of various types of cooperative societies, we shall for the present confine our attention to the types which are mentioned above.

(14.4) the application for the registration of a new society is to be sent to the Registrar and has to be signed by at least ten prospective members. A copy of the proposed bye-laws of the society into be sent along with the application. When the registrar is satisfied that the society complies with the provisions of the Act, he registers the society and its bye-laws and issues a certificate of registration. Any amendment to the bye-laws has to be approved by a general meeting of all the member of the society and registration.

(14.5) Societies may be of either unlimited or limited liability. Members of unlimited liability society are jointly and severally liable for all its obligations. On the other hand, the liability of a member of a limited liability society is limited to his share in the society; in such cases no member is allowed to hold more than one-fifth of all shares of the society. Societies affiliating other societies as their members, are necessarily of limited liability. A society may change its liability from unlimited to limited or from limited to unlimited. In Poona district, most of the societies are with unlimited liability.

(14.6) A society deriving profits is required to create a reserve fund. After making a contribution to the reserve fund of the society and the educational fund of the Bombay Provincial Institute, the remaining profits are to be distributed to the members as dividend. A society is not allowed to pay dividends at rates exceeding  $6\frac{1}{2}\%$ .

(14.7) The administration of a credit society is looked after by a group secretary and a managing committee, with a chairman. The ultimate authority rests with the members meeting is general meeting. Every member has one vote and the chairman uses his vote only when necessary as a casting vote. Annual general meeting of the society is called within three months of the closing of the accounting year. Special general meeting may be called on requisition of one-fifth of all members or at the instance of the registrar.

(14.8) The societies are supervised by the supervising unions under the control of the assistant registrar of Co-operative Societies. In 1850-51 there were 9 supervising unions in Poona district situated at Poona, Manchar, Indapur, Sirur, Junnar, Kedgon, Saswad, Khed and Baramati There were 10 supervisors to work for these unions. (14.9) the accounts of the society are to be audited at least once a year. There are auditors, sub-auditors and special auditors for auditing the accounts of the Societies.

(14.10) Primary credit societies and the village multipurpose societies work on the same level, the area of their operation being a single village, though, sometimes, adjoining villages are affiliated. The area of a sale and purchase society is sometimes a group of villages. In some cases, the credit societies and the village multipurpose societies are members of respective taluka or district purchase and sale union. There does not exist any other relation between institutions at the taluka or district level and those at the village levels. The area of operation of the land mortgage bank and the central cooperative bank is the whole district.

(14.11) The Poona Central Co-operative Bank, Limited, is the district financing agency. It has over 15 branches, spread all over the district, which cover most of the taluka places and important marketing centered.

(14.12) Agricultural credit societies advance short-term loans. There are limits about obtaining credit from a credit society. The limits for each member are fixed in the normal credit statements which are prepared by the staff of the society. It is checked by the loan subcommittee of the Supervising Union and by the Bank Inspector of the taluka branch of the Poona Central Co-operative Bank. It is then sent to the head office of the Bank for approval. After the loans are approved, they are disbursed within the limits prescribed by the head office of the Bank and as and when required, by the member. Limits in the normal credit statement are fixed according to the value of the assets of the members. Centrally limits are Rs. 300/- for short term and Rs. 500/- for term loans.

(14.13) For a loan from a co-operative society, a person who is a member of the society, pets his demand before the managing committee. The managing committee, after resolution submits the demand for approval of the Poona Central Co-operative Bank through the Supervising Union. When the demand is approved, the application is filled in a prescribed from for a demand and a bond is signed by the applicant at the time of disbursement.

(14.14) The Poona District Co-operative Land Mortgage Bank Ltd., Poona is expected to advance loans for long-term purposes such as repayment of old debts, purchases of land, Land improvements etc. For a loan from the Land Mortgage Bank the applicant applies in a prescribed form with necessary documents showing

title to the land concerned. The application is scrutinised by the land valuation officer and the bank sanctions a loan amounting to 50 % of the value of assets as valued by this officer. After receiving the advice of the legal adviser of the bank, the application is put before the Board of Management of the bank and after the sanction of the Board, the case is sent to the Bombay provincial land Mortgage Bank for approval. After approval from the apex bank, the loan is disbursed in as may instalments as desirable. All possible care is taken to see that the loan is actually utiliesed for the propose for which it was intended. Thus, if the loan is made for the repayment of old debt, the cheque is issued in the name of the person to whom the repayment is to be made. If the loan is made for the purchase of land, the cheque is drawn in favour of the land-owner and issued only at the time of registration of the sales-deed. If the loan is made for the purchase of equipment like an oil-engine etc., the cheque is drawn in favour of the suppliers of the equipment.

(14.15) loans from credit society are either secured by land mortgage or more often, when they are not so secured, are guaranteed by the third party surety. Loans from the Land Mortgage Bank are necessarily secured by land mortgage. Rates of interest charged by the credit societies are governed by their bye-laws and vary from  $6\frac{1}{2}$ ; to 9/6/-% rate of interest charged by the Land Mortgage Bank is  $5\frac{1}{2}$ % on loans for land improvement and

 $6\frac{1}{2}\%$  for other purposes such as repay-

ment of old debt, purchase of land, purchases of equipment, etc., Loans from a society are generally repayable within one year; those from the Land Mortgage Bank in 15 or 20 years in equated yearly instalments.

## XV. WORKING OF CO-OPERATIVE SOCIETIES FOUR CASE STUDIES

(15.1) With a view to studying the working of the co-operative societies and their place in the village economy, four of the eight selected villages were so chosen as to have co-operative societies. In the following paragraphs, we shall briefly describe the general conditions in these villages and then the operation of the societies therein. The four selected villages having societies were Donde, Mahalung Padwal, Nimbut and Waghapur. We shall describe them one by one and in that order.

(15.2) The Donde village credit society was registered in 1921 and is at present administered by a group secretory and a managing committee of five members. During both the years 1949-50 and 1950-51 the number of members was 57 only. The paid-up share capital was Rs. 715/- and the Reserve Fund amounted to Rs. 1,496/- for both the years. The society depended upon the Poona Central Cooperative Bank - the District Financing Agency, for its credit requirements. Maximum credit limit of the society was Rs. 7,000/- the maximum credit limits of the individual members are Rs. 300/- for short term and Rs. 500/- for long term loans. In the following we give a few details of the working of the society in the two years as shown by its borrowing from the District Financing Agency on the one hand and by its lending to its member on the other:-

Table 15.1

	Fresh loans	Loans to
	from the	individuals
	District	
	Financing	
	Agency	
1949-50		
Ordinary loans	-	Rs. 300
Crop loans	-	-
1950-51		
Ordinary loans	-	Rs. 450
Crop loans	-	-

It will be seen that the society has not supplied any sizeable credit to its members. Hardly two or three of the members took loans from the Society. This is so mainly because of the non-co-operation between the members of the society and its managing committee. However, in 1951-52 attempts were made to put it on proper lines. The interest receipts were Rs. 543/- and Rs. 489/-, respectively for the years 1949-50 and 1950-51. The profit for the two years amounted to Rs. 106/- and Rs. 205/-, respectively.

(15.3) The village was first visited by our investigators during the period from 28-12-1951 to 9-1-1952. It is during this period that the General Schedule was filled in for all the families in the village. The information in the General Schedule was intended to refer to one year's period immediately proceeding the date of interview. In this case, it might, therefore, be taken to relate to, roughly, the calendar year 1951. As already noted the General Schedule records 257 families of which 178 were cultivators. In the following, we shall present a for General Schedule items regarding these cultivating families.

(15.4) the General Schedule records that of the 178 cultivating families, 37 borrowed during the year and that their total borrowing amounted to Rs. 16,330/though the number of borrowing families was 37, they reported total of 47 transactions of fresh debts contracted during the year. In the following table (table 15.2) we give the distribution of their debt transactions and of all the corresponding amounts according to the Creditor source of borrowing. It is obvious from the above figures that the part which the credit society plays in the supply of credit to the cultivators is very small. This is also due to the defaulted dues on the part of ex-chairman of the society. The ex-chairman of the society was advanced a loan of Rs. 1,300/- in 1948-49 as crop-finance as a special case. However, he failed to repay the loan within the prescribed period and the Bank decided not to grant any fresh credit until the dues were recovered.

 Table 15.2. Borrowing by the cultivating families

 in the village Donde

Creditor source	No. of debt	Amount in
	transactions	Rupees
Government	2	400
Co-operative Society	5	2480
Traders and Commission	1	150
Agents		
Private moneylenders	12	3380
Relatives	25	7620
Others	2	2300
	47	16,330

(15.5) Leaving aside the particular circumstances which prevailed during the above mentioned period, we shall try to know whether the society could have possibly met the credit needs of the cultivators. In the following table (table 15.3) we give analysis of their debt transactions by the purpose for which they were incurred.

# Table 15.3. Borrowing for different purposes by the cultivating families in the village Donde

Purpose	No. of debt transaction	Amount in rupees
Capital investment in agriculture	12	3470
Current farm expenditure	19	7650
Family expenditure	10	3270
Other expenditure	6	1940
	47	16,330

It will be seen from the above figure that two-thirds of the borrowing take place for agricultural credit requirement; about 21 per cent for capital investment in agriculture and about 47 per cent for current farm expenditure. The society has financed about one-fifth of such expenditure. Two of the loans were for the purchase of land as against 12 loans for the purchase of livestock. There were 19 loans for the purchase of seed and the remaining for current farm expenditure.

(15.6) Of the 178 cultivating families, 103 were reported to be in debt at the time of the enquiry and their total indebtedness amounted to Rs. 58,710/-. In the following table, we give the number of cultivating families owing debts to different types of creditors. It should be in mind that some of the 103 families owed their debt to more than one creditor:

Creditor	No. of cultivators indebted to	Amount of total debt Rupees
Government	34	9,100
Co-operative Society	24	6,050
Private moneylenders	40	22,560
Relatives	51	21,000
	149	58,710

Table 15.4. Indebtedness of cultivating families in the village Donde

At the end of the year 1949-50, the loans outstanding with the individual members of the society amounted to Rs. 4,787/-; at the end of the year 1950-51 they were Rs. 4,364/-. The reported figure which refers to the position as at the end of June 1951 is different from that in the Central Schedule. The outstanding indebtedness seems to have been over-reported or the difference could also be the result of the difference in the two periods. The General Schedule referred to the position as \_ in November, 1951, whereas, the figures of the balance-sheet of the Society \_ referred to the position as in July, 1951. As it appears in the above table, loans from the co-operative society amounted to about 10 per cent of the total.

(15.7) The Mahalung Padwal village society attraction credit society was registered in 1947 and share capital is at present administered by a group cannot work secretary and his assistant and a working capit managing committee of five members. two years,

There were 111 members in 1949-50 and 152 members in 1950-51. The share capital of the society rose from Rs. 3.345/- in 1949-50 to Rs. 7.180/- in 1950-51. The society has only a small reserve fund as it is a newly registered society. It amounted to Rs. 112/- in 1949-50 and Rs. 155 in 1950-51. The maximum credit limit of the society was fixed at Rs. 69,685/-, (i.e., one-sixth of the total assets of its members). The maximum borrowing powers of its members for short term and long term credit is about 1/6th and 1/3rd of member's assets. The total loan of a member should not, however, exceed one half of his total assets. In the following table (table 15.5) we give the principal items of its working during 1949-51.

Table 15.5.

	Loans from the District Financ- ing Agency	Loans to individ- uals
1949-50	Rs. 14,500/-	Rs. 14,500/-
1950-51	Rs. 37,400/-	Rs. 38,075/-

Thus, the society does not seem to do anything more than act as an agent of the District Bank. The society is attempting to increase its share capital. Unless the society attracts large amounts by way of share capital and deposits the society cannot work successfully with its own working capital. Interest receipts for the two years, 1949-50 and 1950-51 amounted to Rs. 142/- and Rs. 412/-, be due to under reporting by the cultirespectively and its working showed a vators or due to the difference in the profit of Rs. 137/- in 1949-50 and Rs. period to which the two figures relate. 111/- in 1950-51.

(15.8) About 20 per cent of the members borrowed from the society as well as from other sources. Their total borrowing, however, could not be estimated.

(15.9) The General Schedule for this village was filled in during the period from 5-12-1951 to 26-12-1951. Therefore, the information therein relates to the year ending in November 1951 or roughly to calendar year 1951. The Schedule recorded a total of 409 families of which 243 were cultivators. 85 of the cultivating families reported their borrowing to the extent of Rs. 71,000/- of fresh debts. In the following (table 15.6) we give their distribution and of their amounts by the creditor source. Though the society is newly formed, we have noted that it distributed a large amount by way of loans. The share of the society in the total credit supply amounts to about 40 per cent of the total. Private moneylenders, banks and relatives each supply about 15 per cent of the total credit and hence, are also important. The difference noted in the General Schedule results and the balance-sheet of the society about the amounts borrowed during the year may

Creditor source	No. of debt transactions	Amount borrowed Rs.
Government	5	5,200
Co-operative Society	58	28,190
Bank	4	10,610
Traders and Commission Agents	4	510
Private moneylenders	24	14,780
Relatives	34	11,080
Others	2	840
Tota	ıl 131	71,210

### Table 15.6. Borrowing by cultivating families in the village Mahalung Padwal

## Table 15.7. Borrowing for different purposes by the cultivating families in the village Mahalung Padwal

Purpose	No. of debt transactions	Amount in rupees
Capital investment in agriculture	40	19,090
Current farm expenditure	60	35,090
Capital investment in non- farm business	1	2,000
Family expenditure	14	7,640
Other expenditure	16	7,390
Total	131	71,210

(15.10) In the following table we give the distribution by purpose of the borrowing during the year. Thus, about 50 per cent of the borrowing is for current farm expenditure. Only about 25 per cent of the borrowing takes place for capital investment in agriculture and the remaining for family and other expenditure. In the following table, we give the details of the borrowing incurred for capital investment in agriculture. Thus, about 40 per cent of the amount is for well-digging and repairs while about 30 per cent of the amount is for the purchase of livestock. Purchase of land and of implements and machinery has necessitated borrowing to the extent of about 9 per cent of the total in each case. The remaining of the borrowings were mainly for the land improvements. As to the borrowing for current farm expenditure, 58 cultivators borrowed Rs. 31.070/- for seed, 2 cultivators borrowed for manure Rs. 4,020/-.

Table 15.8. Borrowing for capital investment in agriculture incurred by the cultivating families in the village Mahalung Padwal.

Investment item	No. of debt transactions	Amount in rupees
Purchase of land	4	1,780
Reclamation of land	3	1,100
Bunding and other land	2	900
improvements		
Digging and repairing of wells	10	7,610
Development of other irriga-	1	120
tion sources		
Purchase of livestock	15	5,890
Purchase of implements and machinery	5	1,690
Total	40	19,090

(15.11) Of the 243 cultivating families in the village 146 were reported to be in debt at the time of inquiry and their indebtedness amounted to Rs. 1,35,060/in the following table (table 15.9) we give the number of cultivating families owing debt to different types of creditors; it should be borne in mind that some of the 146 indebted families owned their debt to more than creditor:

Table 15.9. Indebtedness of the cultivating families in Mahalung Padwal

Creditor	No. of culti- vators indebted to	Amount of total debt Rs.
Government	32	25,140
Co-operative Society	72	53,580
Private moneylenders	51	36,190
Relatives	65	18,280
Others	5	1,870
Total	225	1,35,060

In the accounts of the society for the year 1949-50, the loans outstanding with the members are shown to be Rs. 16,858/-. The same at the end of the year 1950-51, are Rs. 45,463/-. The figure of Rs. 53,580/- relates to the position at the and of the year ending November, 1951. The loans of the society are usually repaid after February whereas the borrowing

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General Schedule is, therefore, inclusive of borrowings during 1951-52. The debt due to the society thus accounts for 40 per cent of the total indebtedness. Share of the private moneylenders, relatives and government is 27 per cent, 13 per cent and 19 per cent, respectively. The share of the government and the co-operative society thus comes to about 60 per cent of the total indebtedness which is certainly a notable feature.

(15.12) an important co-operator took initiative in forming a number of societies in eastern parts of the district. The population of the village Nimbut in Baramati taluka is spread over these hamlets and at present each of them has a credit society. The village proper has a multipurpose society. The multi-purpose society was started in 1911. This is one of the biggest societies in the district. In addition to making loans and advances for agricultural credit requirements, the society also undertakes marketing of agricultural produce, supply of rationed food grains, supply of iron, steel and cement and other material for construction requirements, supply of implements, manure, etc. The society also undertakes ploughing with

take place in the month of July to the help of a tractor borrowed from the December. The reported figure in the Government. It owns godowns valued at Rs. 10,000/- and a motor truck worth Rs. 15,000/-. The share capital of the society rose from Rs. 27,195/- in 1949-50 to Rs. 29,145/- in 1950-51, though the number of members for both the years was 122. The reserve fund of the society increased from Rs. 30,399/- in 1949-50 to Rs. 30,939/- in 1950-51; other funds were Rs. 1,225/- and Rs. 3,150/-, respectively for the two years. Current deposits from members and non-members in 1949-50 were Rs. 3,588/- and Rs. 5,540/-, respectively. The corresponding figures for the year 1950-51 were Rs. 6,288/- and Rs. 5,540/-, respectively. Thus, the owned funds of the society as well as the amount borrowed by way of current deposits from members and nonmembers is substantial and reflects upon the efficiency of the working of the society.

> (15.13) For the three hamlets of the village viz., Gadadarwadi, Malimala and Khandobachiwadi, societies were registered in March, 1945, September 1945 and July 1947, respectively. The paid-up share capital of Gadadarwadi society rose from Rs. 950/- in 1949-50 to Rs. 1,455/- in 1950-51. Corresponding figure for Malimala society were Rs.

2,700/- and Rs. 3,350/-, respectively and for Khandobachiwadi society Rs. 1,075/and Rs. 1,450/-, respectively. The Reserve Fund of these societies was near about Rs. 40/-n in each of the three societies for both the years. Gadadarwadi society had Rs. 350/- in 1949-50 and Rs. 422/- in 1950-51 as undistributed profits of the society. The corresponding figures for Malimala society were Rs. 634/- and Rs. 736/-, respectively and for Khandobachiwadi society Rs. 264/- and Rs. 296/-, respectively. There were 30 to 40 members in each of these societies for both the years. Maximum credit limits of these societies and of their members were as follows:-

Society	Maximum Credit limit of the society	Maximum Credit limit of the members
(1) Nimbut Multipurpose	Rs. 1,00,000	Rs. 500/- for short term Rs. 750/- medium term For sugarcane, crop finance at Rs. 500/- per acre upto Rs. 10,000/
(2) Gadadarwadi	Rs. 6,000	Rs. 300/- for short term and Rs. 500/- for long term.
(3) Malimala	Rs. 9,000	Rs. 200/- for land improvement and Rs. 400/- per acre of sugarcane.
(4) Khandobachiwadi	Rs. 8,000	Rs. 300/- for short term and Rs. 500/- for long term

In the last mentioned three societies current deposits from members and non-members were as under:-

	1949-50 Rs.	1950-51 Rs.
Gadadarwadi	186/-	191/-
Malimala	659/-	169/-
Khandobachiwacdi	332/-	316/-

In the following table (table 15.10) we give the principal items of working of the

societies during 1949-50 and 1950-51. It should be borne in mind that the loans of the district financing agency are inclusive of interest, receivable from the societies. It is apparent from the above information that inspite of the large owned capital and borrowed funds from the members of the societies, the societies had to borrow large amounts from the Bank and hence acted, more or less as a distributing agency.

Society	Loans from the Dist. financing Agency		Loans to individuals	
	Ordinary loans Rs.	Crop loans Rs.	Ordinary loans Rs.	Crop loans Rs.
1949-50				
Nimbut Multipurpose	32,901	3,560	27,948	3,384
Gadadarwadi	3,628	276	3,460	260
Malimala	94	1,087	3,180	1,050
Khandobachiwadi	3,872	141	3,238	125
1950-51				
Nimbut Multipurpose	28,732	4,549	33,985	4,409
Gadadarwadi	5,505	-	5,600	-
Malimala	2,044	3,149	2,345	3,105
Khandobachiwadi	5,289	-	4,940	201

**Table 15.10** 

(15.14) the General Schedule recorded a 23 per cent of the total finance. The total of 459 families in the village of village has a large area under sugarcane which 313 were cultivators. The schedule was filled in respect of all the families during the period from 8-11-1951 to 14-11-1951. Of the total cultivating families, 199 borrowed during the year to the extent of Rs. 2.40.800/-. There were 357 fresh transactions on account of borrowing. In the following table is given the distribution of these transactions and of the corresponding amounts by the creditor source.

Thus, the government and the cooperative finance together supply about one-fifth of the total credit and the major portion of about 80 per cent of the total is supplied by the private agencies. The traders and the commission agents supply

and as such the amount borrowed is very large.

families in the village Nimbut		
Creditor source	No. of debt	Amount i

Table 15.11, Borrowing by the cultivating

Creditor source	No. of debt transactions	Amount in Rupees
Government	17	8,300
Co-operative Society	103	43,750
Bank	1	1,000
Zamindars	6	1,930
Traders and Commission	54	55,550
Agents		
Private moneylenders	122	78,390
Relatives	22	10,740
Agricultural moneylenders	7	2,310
More than one creditor	12	38,830
Total	344	2,40,800

Purpose	No. of debt transactions	Amount in rupees
Capital investment in agriculture	125	71,380
Current farm expenditure	135	1,32,170
Non-farm business expenditure	1	70
Family expenditure	70	32,300
Other expenditure	13	4,880
Total	344	2,40,800

#### Table 15.12. Borrowing for different purposes by the cultivating families in the village Nimbut

(15.15) In the table below, we give distribution of loans by the purpose for which they were borrowed. Thus, more than half of the credit needs are for meeting the current farm expenditure. The cultivators have to incur an expenditure of about Rs. 1.200/- to Rs. 2.000/under per acre sugarcane. This expenditure includes all the operations from ploughing the fields to the marketing of agricultural produce. Next in importance is borrowing on account of the capital investment in agriculture which accounts for about 30 per cent of the total borrowings. About 13 per cent of the amount is borrowed for meeting the family expenditure and remaining, about 2 per cent of the total, for other expenditure. In the following table, we give the details of the capital expenditure in agriculture for which borrowing took place:-

-		
Investment item	No. of debt	Amount in
	transactions	rupees
Purchase of land	10	8,930
Reclamation of land	19	12,690
Bunding and other land	10	4,030
improvements		
Well digging and repairing	39	23,690
of wells		
Purchase of livestock	30	9,960
Other capital investment	4	2,900
in agriculture		
Purchase of implements	13	9,180
Total	125	71,380

Table 15.13. Borrowing for capital investment in agriculture by the cultivating families in the village Nimbut.

Thus, more than half of the borrowing on this account is for land improvements. Purchase of land, livestock and implements each necessitated borrowing to the extent of about 14 per cent of the total. In the table below, we give the details of borrowing for current farm expenditure:-

Table 15.14. Borrowing for current farm expenditure by cultivating families in the village Nimbut

Expenditure item	No. of debt trans actions	Amount in Rs.
Seed	5	1,420
Manure	74	76,590
Fodder	14	3,780
Wages	8	14,650
Land revenue etc.	3	1,520
Maintenance of irrigation sources	5	11,600
Other Farm Expenditure	26	22,610
Total	135	1,32,170

Ammonium sulphate and groundnut cake are badly needed for sugarcane farms. The cultivators have to purchase them from the traders. There are about 25 traders dealing in Nira. They also combine marketing of agricultural produce with it. Usually the transaction takes a form of credit purchases from the traders. The trader recovers the amount when the produce is brought for sale to his shop. Other items of current expenditure are also on account of the sugarcane and other crops in this village.

(15.16) At the time of the enquiry, all the 313 families were found to in debt which seems a very uncommon feature. Their total debt amounted to Rs. 2,74,340/-. In the following table we give the number of families owning debt to different types of creditors and the corresponding amounts of debts. It should be borne in mind that some of the families were indebted to more than one creditor.

Table 15.15. Indebtedness of the cultivating families in the village Nimbut

Creditor	No. of cul- tivators indebted to	Amount of total debt in Rupees
Government	40	20,870
Co-operative Society	122	77,800
Private moneylenders	84	75,850
Relatives	32	13,110
Zamindars	11	3,370
Traders and Commission	68	83,340
Agents		
Total	357	2,74,340

In the accounts of the society for the year 1949-50, the loans outstanding with the members amounted to Rs. 55,935/-. The same for the year 1950-51 amounted to Rs. 75,860/-. The figure appearing in the above table is nearer to the figure in the balance sheet of the society. The debt of the society accounts for about 28 per cent of the total and that of the Government amounts to 8 per cent of the total. Among the private agencies, the private moneylender and the traders and commission agents each account for 30 per cent of the total debt. This reflects upon the important role played by the private source of finance in meeting the agricultural credit requirements of the cultivators.

(15.17) The Waghapur village Credit Society was registered in the year 1925 and is at present administered by a group secretary and a managing committee. The maximum credit limit of the society is Rs. 35,000/- and for members it is Rs. 300/for short term and Rs. 500/- for long term loans. For crop-finance, however, the limit could be relaxed. The number of members during 1949-50 was 69 and in 1950-51 it was 103. The share capital rose from Rs. 1,295/- in 1949-50 to Rs. 2,695/in 1950-51. The reserve fund for the two years was Rs. 2,324/- and Rs. 2,406/-,

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respectively. Other funds amounted to Rs. 210/- in both the years. In the following table, we show the working of the society as shown by its borrowing from the district central co-operative bank on the one hand by its lending to its member on the other:

Table 15.16.

Fresh loans t Financing	from the District Agency - Rs.	Loans to individuals during the year - Rs.
1949-50	Rs. 3,363 - 0 - 0	3,455 - 0 - 0
1950-51	11,682 - 0 - 0	11,455 - 0 - 0

The business in the year 1950-51 is more than three times the business in the previous year. But it will be noticed from the above figures that the society is acting like agent for the Bank. In spite of the long standing of the society and its owned funds, the society is not able to meet the demands of its members. This is so mainly because of the long outstanding dues of many of its members.

(15.18) About 5 per cent of the members of the society borrowed from the society as well as from outside the society. However, their borrowings could not be estimated.

(15.19) The General Schedule for this village was filled in during the period

from 16-11-1951 to 28-11-1951. Therefore, the information there-in roughly relates to the year ending November 1951. The Schedule recorded a total of 223 families of which 145 were cultivators. 76 of the cultivating families reported borrowing during the year to the extent of Rs. 49,710/- by entering In to 151 debt transactions. In the following table we give the distribution of these transactions and of the corresponding amount by the creditor source:-

Table 15.17. Borrowing by the cultivating familiesin the village Waghapur.

Creditor source	No. of debt transactions	Amount in Rupees
Government	1	1,050
Co-operative Society	55	20,370
Bank	2	2,000
Traders and Commission Agents	1	1,200
Private moneylenders	36	7,890
Relatives	56	17,200
Total	151	49,710

It will be noticed that the figure of Rs. 20,370 for the borrowing from the society appearing in the above table is nearly twice the amount appearing in the figures quoted earlier from the balance-sheet of the society. The General Schedule figures relate to the year ending November 1951, where as the balance sheet figure refer to the position as on 30th June 1951. The

number of members of the society also showed a considerable increase during these years and large amount of borrowing appearing in the General Schedule though it is much more than the earlier figure, seems to be reasonable. As it appears, the society has met about 40 per cent of the credit needs of the cultivators. The contribution of the Government is very small. Relatives form an important source of supply of credit. Since by our definition, such loans are interest free, their share in the total credit supply, which is more than one-third of the total appears to be reasonable. The remaining finance is provided by other private sources and by private moneylenders in particular.

(15.20) in the following table, we give the distribution of these loans by the purposes for which they were incurred:-

Table 15.18. Borrowing for different purposes bythe cultivating families in the village Waghapur.

Purpose	No. of debt transactions	Amount in rupees
Capital investment in agriculture	78	23,940
Current farm expenditure	34	10,290
Non-farm business expenditure	4	6,050
Family expenditure	22	6,870
Other expenditure	13	2,560
Tota	1 151	49,710

Thus, about half of the borrowing was for capital expenditure in agriculture; about one-fifth of the total for current farm expenditure; about 12 per cent for non farm business expenditure and other expenditure. The borrowing on account of the current farm expenditure is nearer the amount reported on account of loans made during the year by the society.

(15.21) In the following table, we give the details of the Capital Investment in agriculture and current farm expenditure for which borrowing took place:-

Table 15.19. Borrowing for capital investment inagriculture by the cultivating families in the village Waghapur.

Investment item	No. of debt	Amount in rupees
Purchase of land	1	1000
Reclamation of land	2	430
Bunding and other land	12	7740
improvements		
Digging and repairing of	11	3250
wells		
Development of other irri-	3	210
gation sources		
Laying of new orchards	4	680
and plantations		
Purchase of livestock	18	3060
Purchase of implements	21	5440
Construction of farm	3	580
houses, etc.		
Other capital investment	3	1550
in agriculture		
Total	78	23,940

It will be noticed from the above information that a large amount of expenditure incurred on land-improvement was which the Government alone is in a position to meet efficiently. However, as noted earlier Government's share is too low. Large amounts were also spent on account of the purchase of livestock and implements. The village is famous for its orchard crop - "figs". The fruit is sold in Poona, Bombay and other distant markets. The large amount of expenditure on account of land improvement is mainly due for increasing the produce of these orchards. The credit society was, however, not able to cater to the needs of the members for meeting the current farm expenditure. In the following table, we give the details of the borrowing for current farm expenditure.

Table 15.20. Borrowing for current farm expenditure by cultivating families in the village Waghapur

Item		No. of debt transactions	Amount in Rupees
Purchase of manure Purchase of fodder Other farm expenses		6 14 14	600 2,720 6,970
	Total	34	10,290

It will be noticed from the above table that 450/- were considered as doubtful. The about 70 per cent of the borrowing corresponding figures for 1950-51 were reported for current farm expenditure was reported an "other farm expenses". Since Rs. 20,630/- on account of principal and reported an "other farm expenses". Since Rs. 2,275/- on account of interest. Of this, the details if this expenditure are not Rs. 5,521/- were overdue. The figure

available, it is not possible to appreciate it. There is a shortage of fodder in this village as there is a low acreage under Jowar and as such the cultivators have to make their purchases from outside for which borrowing takes place.

(15.22) In the following table we give the details of indebtedness of the cultivating families:-

Table 15.2	1. Indebtedness of the cultivating fami-
	lies in the village Waghapur

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Creditor	No. of cultivators Indebted to	Amount in Rupees
Government	3	1,200
Co-operative Society	59	30,680
Private moneylenders	30	12,930
Relatives	47	24,480
Traders and Commission	3	2,550
Agents		
Total	142	71,840

In the accounts of the society for the year 1949-50, the amount outstanding with the members at the end of the year was Rs. 11,913/- on account of principal and Rs. 2,394/- on account of interest. Of this amount Rs. 4,968/- were overdue and Rs. 450/- were considered as doubtful. The corresponding figures for 1950-51 were Rs. 20,630/- on account of principal and Rs. 2,275/- on account of interest. Of this, Rs. 5,521/- were overdue. The figure

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appearing on the above table refers to the Taking as they are and taken together they year 1951-52 and is likely to be inclusive of the disbursement during the year about Rs. 11,455/- If this is taken in to account, the reported figure in the above table appears reasonable. There are some outstanding debts due from the members of the society on account of their borrowings in the past - about 20 to 25 years back. The members of the earlier managing committees defaulted payment and as such the funds of the society remain locked to a sizeable extent. As regards the share of other creditors in the total outstanding amount, relatives have about one-third of the total dues. Of the remaining, other private sources account for one-fifth of the total whereas the government's share is hardly one per cent of the total outstanding indebtedness.

### XVI. WORKING OF CO-OPERATIVE SOCIETIES SUMMARY

(16.1) In the previous chapter we have given a general description of the working of the societies in the four selected villages against the background of the conditions in respect of borrowing and indebtedness in the respective villages. It would appear that the functioning of the societies in three villages, namely, Mahalung Padwal, Waghapur and Nimbut is quite satisfactory, though, there is ample scope for improvement. The working of the society, at Donde for the year 1950-51 is totally unsatisfactory. is about 35 per cent of the maximum

represent in a sense the success and failings of the co-operative movement in the district. We might summarise the position by consolidating their accounts as also the situation in the respective villages with regard to borrowing and indebtedness.

(16.2) the four villages put together have a total of 1345 resident families of which 879 were cultivators. The four societies together had a total membership of 457 during the year 1949-50 and 535 during the year 1950-51. Thus, about 65 per cent of the population was that of cultivators and of the cultivators about 61 per cent were members of the co-operative societies. The total paid-up share capital of these societies was Rs. 45,980 in 1950-51. This works out to be Rs. 86 per member. The total reserve and other funds amounted to Rs. 39,632 which works out to be Rs. 74 per member. The total maximum credit limit of these societies was Rs. 2,34,685.

(16.3) The loans from the District Financing Agency received by the societies and the loans made by the societies during 1950-51 were both larger than in 1949-50. The loans received by the societies from the Bank amounted to Rs. 63,846 in 1949-50 and Rs. 99,274 in 1950-51. The average for the two years

credit limit of these societies. These are, of course, fresh borrowing and this accounts for their low ratio with the maximum credit limit. The loans outstanding payable to the District Financing Agency at the end of the year 1949-50 were Rs. 75,271 and for 1950-51, Rs. 1,25,826. Thus, the average for the two years of the loans outstanding is nearly 43 per cent of the maximum credit limit. Thus only about one-fourth of the maximum credit limit remained to be used. Taking into account the growing demand for loans, this credit limit needs a revision. Nevertheless, it should be noted that the loans from the District Financing Agency from the principal course of finance. Their owned funds which consist of paid-up share capital, reserve and other funds are small and amount to Rs. 85,812 which is much less than the amount outstanding payable to the District Financing Agency. In fact the loans from the Bank form almost 60 per cent of the working capital of the societies.

(16.4) the loans to members by the four societies during the period averaged to Rs. 82,733 which actually is much less than the total working capital of the societies. This is so because a large portion of the working capital is locked in the outstanding dues from the members. We should now examine the size of this effort against the requirements of the cultivators in the village. We shall, of course, know of their requirements only to the extent that they found expression and materialised; we mean by their actual borrowing during the year. The General Schedule for the four villages shows that out of the 879 cultivators, 397 actually borrowed from one source or another during the year. The 397 cultivators actually reported 673 loans during the year, amounting to a total of Rs. 3,78,050. This works out to be Rs. 562 per loan; or if we consider the 397 cultivators who borrowed during the year, it gives Rs. 952 per borrowing cultivator. In the following table, we give a distribution of the loans incurred during the year and of the corresponding amounts by the creditor source. (table 16.1)

Table 16.1

Creditor	No. of debt transactions	Amount in Rupees
Government	25	14,950
Co-operative Societies	221	94,790
Bank	7	13,610
Zamindars	7	2,630
Traders and Commission	60	57,410
Agents		
Private moneylenders	194	1,04,440
Relatives	137	46,640
Agricultural moneylenders	5	1,010
Others	17	42,570
Total	673	3,78,050

Thus, the co-operative societies seem to have financed about one-fourth of the total credit needs of the cultivators. It should be noted that amount reported by the General Schedule as borrowed from the co-operative societies, namely, Rs. 94,790 agrees very well with the one indicated in the accounts of the societies for the year 1950-51. The small difference might be due to the fact that the General Schedule does not refer to the vear 1950-51 but to a somewhat later period, being approximately the calendar year 1951. Private moneylenders also supply more than one-fourth of the total credit supply while traders and commission agents contribute about 15 per cent of the total. The relatives supply about 12 per cent; the government and the banks supply about four per cent while the Zamindars and agricultural moneylenders supplied about one-per cent each of the total credit supply. Thus, the private agencies supply more than two-third of the total credit supply.

(16.5) In the following table, we give the purposes for which the loans were taken during the year:-

Table	16.2.
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256	1,17,860
247	1,85,640
6	8,120
116	50,060
48	16,370
673	3,78,050
	256 247 6 116 48 673

Thus, about half of the borrowing were for meeting the current farm expenditure and about one-third to meet the capital expenditure on farm. In the following table are given the details of the capital expenditure in agriculture for which loans were taken:-

Table 16.3

Purpose	No. of debt transactions	Amount in rupees
Purchase of land	20	12,660
Reclamation of land	24	14,220
Bunding and other land	24	12,670
improvements		
Digging and repairing of wells	57	32,680
Development of other	4	330
irrigation sources		
Laying of new orchards	4	680
Purchase of livestock	72	21,940
Purchase of implements	39	16,620
Construction of farm	4	710
houses, etc.		
Other capital investment	8	4,650
in agriculture		
Total	256	1,17,160

Thus, digging and repairs of wells accounts for more than one fourth of the total borrowing for capital expenditure in agriculture. Next importance is the borrowing for the purchase of livestock. It accounts for nearly one-fifth of the total. Purchase of implements is yet another item for which borrowing takes place to a large extent. The loans were taken mainly for the purchases of oil engines.

(16.6) In the next table are given the details of the current farm expenditure for which loans were taken:-

Expenditure item	No. of debt trans	Amount in Rs.
	actions	
Seed	80	40,490
Manure	93	80,330
Fodder	32	7,050
Payment of Wages	8	14,650
Payment of other agricultural	29	31,520
expenses		
Repairs of irrigation sources	5	11,600
Total	247	1,85,640

Table 16.4

(16.7) In the following table we give the distribution of loans taken for capital farm expenditure according to the creditors from they were borrowed. (table 16.5) Thus, more than one-third of the total credit supplied for capital expenditure is from co-operative societies. It must be remembered that this was in villages with societies. The private moneylenders also have a large share in

the total. Relatives and traders and commission agents are equally important among the other private agencies. Zamindars and agricultural moneylenders, however, account for a very little account.

Table	16.5.
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Creditor	No. of debt transactions	Amount in Rupees
Government	17	8,950
Co-operative Societies	82	34,000
Bank	3	3,330
Zamindars	2	430
Traders and Commission	17	16,610
Agents		
Private moneylenders	73	36,710
Relatives	61	17,630
Agricultural moneylenders	1	200
Total	256	1,17,860

(16.8) In the following table, we give the distribution of the loans taken for meeting the current farm expenditure according to the creditors from whom they were borrowed:-

Table	16.6.
-------	-------

Creditor	No. of debt transactions	Amount in Rupees
Government	5	3150
Co-operative Societies	98	49060
Bank	2	7280
Zamindars	2	700
Traders and Commission	36	36720
Agents		
Private moneylenders	63	41260
Relatives	26	6200
Agricultural moneylenders	1	140
Others	14	41130
Total	247	185,640

(16.9) Finally, we might note the supply of credit for family and other expenditure. In the following table are given the distribution of the loans taken for this purpose according to creditors from whom they borrowed (table 16.7). Thus, the Government has advanced a very small proportion of the total advances on this account. The societies account for about one-seventh of such loans. Even here it should be noted, that the above classification is based on the purposes as reported by the borrowers.

Creditor	No. of debt transactions	Amount in Rupees
Government	4	2850
Co-operative Societies	40	9600
Bank	2	3000
Zamindars	4	1500
Traders and Commission Agents	7	4000
Private moneylenders	63	25330
Relatives	48	17710
Others	3	2440
Tota	1 171	66,430

#### Table 16.7.

The loan registers of the societies show only the current of capital requirements for farm business. The banks also have a very small share in the total. More than three-fourth of the total credit for this purpose is supplied by the private agencies. Moneylenders and relatives supply 37 per cent and 26 per cent, respectively of the total and though the share of the traders and commission agents is much smaller, it should be noted that they also supply credit for private needs.

(16.10) Out of the 879 cultivating families in the four village, 677 were reported to be in debt at the time of our inquiry. This is more than 75 per cent of all the cultivators. In the following table, we give the number of cultivators who were indebted to different types of creditors and corresponding amounts of indebtedness.

Table	16.	8
-------	-----	---

Creditor	No. of cultivators indebted to	Amount in Rupees
Government	109	56,310
Co-operative Societies	277	1,68,110
Private moneylenders	205	1,47,530
Relatives	195	76,870
Zamindars	12	3,670
Traders and Commission	75	87,460
Agents		
	873	5,39,950

Thus, the total indebtedness works out at Rs. 797 per family and about one-third is owed to the credit societies.

#### XVII. WORKING OF CO-OPERATIVE SOCIETIES MORE CASE STUDIES.

(17.1) In addition to the four societies from the selected villages which we have described in the previous two chapters, four more credit societies were selected for study. In these cases, investigation was confined to the working of the selected societies much in particular, the General Schedule was not filled for these villages and consequently no information could be made available in respect of the total borrowing or indebtedness of the cultivating families in these villages. In the following paragraphs we shall briefly describe the working of a the four selected societies.

(17.2) The four selected societies were as under:-

- (1) Vir Multipurpose Co-operative Society
- (2) Shri Ram Kunjirwadi Co-operative Credit Society.
- (3) Pimpri Pendhar Co-operative Credit Society.
- (4) Kuruli Co-operative Credit Society.

We shall describe them one by one in that order.

(17.3) Vir is a village about 14 miles from saswad, the taluka headquarters of Purandhar taluka. Approach to the village

transport of goods. It is also connected to the village Valhe, about eight milles from Vir, on Poona Baramati road. The village is surrounded by hills on all the sides. The village has large area under well irrigation. The Betel leaves, fruits and vegetables are the important cash crops. Jowar and Bajri are the important millets. The village credit society was registered in the year 1945 mainly for the purpose of having a ration shop for the village and it was, therefore, registered as multipurpose society. But a group of persons in the village opposed the The idea and as such a shop could not be run. The opposition also spread some misunderstanding about the society and as such the society could not be catered to the credit needs of its members. However, due to change in economic conditions and implementation of the new acts like the Bombay Moneylenders Act, need for credit was actually felt. A new managing committee was formed and thus the society started disbursing loans in the year 1950-51. As a result the number of members which was 33 in 1949-50 rose to 53 in 1950-51 and the paid-up share capital rose from Rs. 230 in the year 1949-50 to Rs. 1,020 in 1050-51. As is to be expected the reserve Fund amounted to Rs. 53 only. Current deposits amounted to Rs. 176 and savings deposits amounted to Rs. 184 only in the year 1950-51. The maximum credit limit of is through a hilly road not suitable for the society is Rs. 5,000 only. However,

the limit could be exceeded for crop finance with the sanction of the District Financing Agency. Maximum borrowing limits of the members were Rs. 300 for short term loans and Rs. 500 for long term loans.

(17.4) In the following we give a few details of the working of the society for the two years 1949-51 as shown by its borrowing from the District Financing Agency on the one hand and by its lending to its members on the other.

Table	17.1
-------	------

Fresh loans from th Co-operative	ne Poona Central Bank in Rs.	Loans to individuals in Rs.
1949-50 1950-51	- 9,000	6,310

The society started its actual working in 1950-51 and at present mainly acts as a distributing agency. The membership of the society as well as the demand for credit is rapidly increasing. In 1950-51, the establishment cost was Rs. 81 and the society incurred a loss of about Rs. 63. However, with the present managing committee the society is bound to make a repaid progress and cater efficiently to the credit needs of the cultivators.

(17.5) Village Kunjirwadi is about 16 miles from Poona on the Poona Sholapur road and has a population of about 1,000 reasons. Poona city is within reach on a bicycle and many of the villages go to

Poona every day to sell milk and dairy products. The credit society was started in the year 1944. There were 100 members of the society and the paid-up share was Rs. 2,090 in 1949-50. Corresponding figures for the year 1950-51 are 112 and Rs. 3,550, respectively. The reserve fund was about Rs. 125 in 1950-51. The maximum credit limit of the society is fixed at Rs. 10.000 and for members Rs. 300 for short term and Rs. 500 for long term loans. For crop finance for sugarcane the limit is Rs. 350 per acre and for other crops, it is as per limits fixed by the Bank. The savings deposits of the members amounted to Rs. 141 and those of non-members amounted to Rs. 241 in the year 1950-51.

(17.6) In the following table (table 17.2) is given the information relating to its working for the two years 1949-51. Thus, the society seems to have acted merely as a distributing agency. There are a large number of outstanding debts. The society, however, made a profits of Rs. 437 in 1950-51 against a loss of Rs. 667 in 1949-50.

**Table 17.2** 

	Fresh loans from the Poona Central Co-operative Bank Rs.	Loans to individuals Rs.
1949-50		
Ordinary loans	7763	7125
Crop loans	3634	3675
1950-51		
Ordinary loans	14634	12500
Crop loans	118	-

(17.7) Village Pimpri Pendhar from Junnar taluka is about 4 milles from Ale Phata and about 64 miles from Poona on the Poona Nasik road. There are 443 families in the village with 2,620 persons. Some of the families have some of its member in Bombay working as commission agents in fruit in Crawford market, Bombay. There is some land on the east of the village which grow fruit. In the village there are 153 wells for farming and about 46 wells for drinking water purposes. The village is on the border line of the Poona-Ahmednagar districts. It is surrounded by hills and has about 30-40 inches of rain fall. Sugarcane, fruits, chillies, vegetables, and flowers are the important cash crops. The acreage under important crops in 1950-51 was as follows:- Jower 737 acres; Bajri 3,056 acres; Wheat 218 acres; Gram 237 acres; plantains 45 acres; sugarcane 8 acres; chilies 8 acres; groundnut 24 acres, etc. The society was registered in the year 1918. It had 102 members in 1949-50 and 143 in 1950-51. The share capital of the society for the two years was Rs. 2,265 and Rs. 3,435, respectively. The reserve fund amounted to Rs. 2,473 and Rs. 2,713, respectively for the two years. Current deposits of members amounted to Rs. 300 for both the years.

(17.8) Though the society was established in 1918, it did not make any remarkable progress till 1948. There were only 30 members in 1936, 37 in 1946 and 74 in 1948-49. The society was running a ration shop during 7-3-1947 and 20-6-1948 but was required to close down because of mismanagement. The present management then took over and reached efficiency enough to secure a medal from the Poona Central Cooperative Bank as one of the most efficient society of the year 1949-50. The society has a model office and an up-to-date record. Because of the transport difficulties the society is unable to undertake marketing of agricultural produce.

(17.9) The maximum credit limit of the society is Rs. 50,000. As regards the members, it is Rs. 300 per acre of plantains and sugarcane for a period of three years, with a maximum of Rs. 1,500 per member. For loans of five years the maximum limit is Rs. 500.

(17.10) in the following table we give a few details of the working of the society for two years 1949-51. (table 17.3) The repayments are however not satisfactory. Outstanding loans amounted to Rs. 18,820 in 1050-51. The society is making profit for the last few years at about Rs. 100 per annum.

Table 17.3.

Fresh loans from th Co-operative	ne Poona Central Bank in Rs.	Loans to individuals in Rs.
1949-50 1950-51	10,639	10,600

(17.11) Village Kuruli is situated on the 16th mile on the Poona Nasik road from Poona. It is a small village with a population of about 1320 persons in about 180 families. The area under cultivation in the village is about 123 acres under well irrigation and 2,334 acres as dry area. Potato, chilies and onion are the irrigated crops with 46, 33 and 44 acres of land under well-irrigation. Groundnut and other oil seeds have about 44 and 69 acres, respectively. The cereals are as follows: Bajri 584 acres; Jowar 237 acres; fodder 205 acres and Wheat 42 acres. The society was registered in the year 1918 but since its establishment there is no remarkable progress. The number of members which was 68 in 1949-50 rose to 77 in 1950-51. The share capital rose from Rs. 2,055 in 1949-50 to Rs. 2,090 in 1950-51. The reserve fund of the society is nearly three times its paid-up capital and amounted to Rs. 6,336 and Rs. 6,395 for the two years. Current deposits amounted to Rs. 220 and Rs. 273 for the two years, respectively. The maximum credit limit of the society is Rs. 10,000 and for members Rs. 300 for short term and Rs. 500 for long term loans.

(17.12) In the following table are given a few details of its working for the two years 1949-51:-

**Table 17.4** 

Fresh loans from the Poona Central Co-operative Bank in Rs.		Loans to individuals in Rs.
1949-50	3,731	2,755
1950-51	3,865	3,865

The society made a profit of Rs. 456 in 1950-51.

(17.13) The owned funds of the society are nearly Rs. 8600; but still then the society has to borrow from the Bank to meet the credit requirements of its members. This is mainly because of the large amount outstanding due from its members to the society. It was Rs. 7,765 in 1949-50 and Rs. 7,610 in 1950-51. 50 per cent of the amount outstanding in 1949-50 was overdue while the overdues amounted to about one third of the total outstanding in the year 1950-51.

(17.14) With a view to studying the operations of the agencies supplying credit to cultivators as also problem of marketing of agricultural produce, five important marketing centres were selected in the district. The selected centres were Poona, Baramati, Khed, Sirur and Nira. We shall present the results of investigation at these centres in subsequent chapters. However, along with other credit institutions, it was decided to study, co-operative credit societies, if they were working at these centers. There were two such societies; one at Baramati and the other at Khed. In the following paragraph we shall briefly describe their working.

(17.15) Baramati is an important marketing center in Poona district. It has a large area under sugarcane grown on the water supply of the Nira Left-Bank Canal in the neighborhood of the town. The society is a multipurpose society and was registered in the year 1949. There were 76 members in 1949-50 and 113 members in 1950-51. The paid-up capital of the society rose from Rs. 14,000 in 1949-50 to Rs. 33,130 in 1950-51. Current deposits which were Rs. 1,982 in 1949-50 however, showed a fall and all the amount was withdrawn during the year 1950-51 mainly on account of the slump in Gur market. It has invested Rs. 3,000 in the shares of the Nira Canal Co-operative Societies Sale and Purchase Union. The maximum credit limit of the society is Rs. 50,000.

(17.16) The society has a number of activities. It has a ration shop, an Adat shop, a cloth shop and it also supplies cement, steel and other material. The society has a secretary for its credit department. He is selected by two secretaries - one for Adat shop and the

other for Gur section. They are further assisted by three assistants. The ration shop is managed by a manager and three assistants. The staff is adequately paid and has a good relation-ship with the office bearers and this has resulted in a rapid progress of the society. Given below are a few details of its working:-

Table 17.5

Fresh loans from the Poona Central Co-operative Bank Ltd. in Rs.		Loans to individuals in Rs.
1949-50	20,160	23,700
1950-51	26,390	30,950

The society earned Rs. 1,894 by way of profit in 1950-51 and paid a dividend at the rate of  $6\frac{1}{4}$  per cent.

(17.17) The society sold agricultural produce worth Rs. 2,79,853 in the year 1949-50 and earned Rs. 1,468 by way of commission on the sales. In 1950-51 it sold produce worth Rs. 7,14,138 and earned a commission of Rs. 3,007. The society supplied seed, manure, etc., worth Rs. 54,264 in 1949-50 and worth Rs. 48,827 in 1950-51 and the value of consumption goods supplied by the society in the year 1949-50 amounted to Rs. 76,447 and in 1950-51 to Rs. 1,57,914. These figure speak of the multifarious activities of the society. The society has managed every activity with

efficiency. However, one important factor needs consideration. There is "Nira Canal Societies' Sale and Purchase Union" at Baramati. The union has the same objectives as the society has and the union has a standing of a number of years. Some of the members have formed the society after they had some difference of opinion with the Union. An unhealthy atmosphere is growing among the cultivators which is not at all helpful for the development of such institutions. As earlier stated the working of the society is, otherwise, satisfactory.

(17.18) Khed, the taluka headquarter of Khed taluka, is about 26 milles from Poona on the Poona Nasik road. It is am small town with a population of about 11,000 persons. Paddy, Jowar and Bajri are the important food crops and potato, groundnut and other oilseeds are the important cash crops. The society was registered in the year 1928. Till 1930, there were only 28 members. In 1938 there were 53, in 1940 there were 76 and in 1944 there were 100 members. In 1950-51 there were 123 members. The share capital of the society is not adequate. The paid-up capital of the society in 1947 was Rs. 1,155; in 11949-50 it was Rs. 1,360 and in 1950-51 it was Rs. 1,750. The reserve fund amounted to Rs. 4,179 in 1949-50 and 4,711 in 1950-51. In the year 1949-50 the society had attracted deposits of Rs. 1,258 but due to tight

money conditions in 1950-51, most of the deposits were withdrawn and the deposits at the end of the year amounted to Rs. 368/- the maximum credit limit of the society is Rs. 10,000 and for members it is Rs. 300 for three year loans and Rs. 500 for five year loans.

(17.19) In the following table are given a few details of the working of the society for the two years 1949-51 :-

Table 17.6.

Fresh loans from the Poona Central Co-operative Bank Ltd. in Rs.		Loans to individuals
1949-50	3,500	5,860
1950-51	7,775	7,215

(17.20) Thus it will be seen that the society, in spite of its standing for the last 30 years, is unable to manage its credit requirements out of its own funds. Even after such a long time after establishment, it continues to act as a mere distributing agency of the bank. This is mainly on account of the large amount outstanding by way of loans from the members due to the society. About Rs. 6,737 were outstanding on account of crop finance and about Rs 1,384 on account or ordinary loan in the year 1949-50. The corresponding figure for the year 1950-51 are Rs. 10,367 and Rs. 1,359. Of this amount Rs. 2,645 were overdue.
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## **XVIII. CHARACTER OF CO-OPERATIVE CREDIT**

(18.1) In the three preceding chapters, we described the working of a total of 13 credit societies which were selected for case studies. So far we did not attempt any analysis of the loans by size, by rates of interest, etc. We propose to do this in the present chapter. As a preliminary, we might present in a consolidated form the accounts of the 13 societies covered by our investigation. In the following table we give details of their membership and working capital for the two years 1949-50 and 1950-51:-

	1949-50	1950-51
Number of members	959	1,157
Owned funds		
Paid-up share capital	59,665	90,955
Reserve Fund	47,636	50,720
Other funds	4,049	8,203
Total owned capital	1,11,350	1,49,878
Borrowed funds outstanding:		
Current Deposits from members	7,446	9,765
Current Deposits from non-members	5,545	6,548
Saving Deposits from members	1,838	2,152
Saving Deposits from non-members	100	-
Loans from Poona Central Co-operative Banks, Ltd.	1,19,244	2,02,607
-	134,173	221,072
Total working capital	2,45,523	3,70,950

#### Table 18.1. For 13 Credit Societies covered by our investigation.

The investments of the societies were ments. small and comprised of Rs. 13,805 in the form of shares of the co-operative institutions in the year 1949-50 and Rs. 14,950 in the year 1950-51. There do not seem to be any other sizeable invest-

(18.2) In the following table we give a few particulars of the annual transactions of the societies for the two years 1949-50 and 1950-51, separately:-

Table 18.2.

	1949-50	1950-51
Fresh deposits from members	8,375	5,424
Fresh deposits from non-members	-	100
Fresh loans from the District financing agency	1,13,308	1,70,889
Fresh loans to individuals	1,14,615	1,75,855
Repayment of loans by individuals		
Principal	57,546	92,318
Interest	8,711	6,891

At the end of year loans outstanding with might be attributed to copying and other the members were as under:-(table 18.3). Thus, in 1950-51, the 13 credit societies having a membership of 1157 made fresh loans amounting to Rs. 1,75,855. In order

	1949-50	1950-51
Loans outstanding at the end of		
the year with individuals		
Principal	1,59,423	2,26,771
Interest	3,744	3,625
Of which overdue	14,760	15,302
Of which bad and doubtful	450	-
	15,210	15,302

Table 18.3.

to study the characteristics of the individual loans, we extracted some information from the loan registers of the societies. This information shows that the fresh loans during the year amounted to Rs. 1,75,044. The difference is small and

errors. In subsequent parts we shall take this latter figure.

(18.4) The total amount of Rs. 1,75,044 borrowed during the year comprised of 407 separate loans taken by the members. In the following table (table 18.4) we give the distribution of these 407 loans made during the year according to amounts.

## Table 18.4. Distribution by amounts of loans made during the year

Amount	No. of loans	Total amount
Less than 100	26	1,296
Rs. 100 - 199	99	11,915
Rs. 200 - 299	69	14,733
Rs. 300 - 399	58	18,190
Rs. 400 - 499	33	13,385
Rs. 500 - 999	86	49,755
Rs. 1,000 and over	36	65,770
Total	407	1,75,044

(18.5) Of the total 407 loans for Rs. 1,75,044 there were 266 loans for Rs. 1,25,889 for one year or less, 48 loans for Rs. 16,850 for two to three years, 89 loans for Rs. 30,205 for 3 to 4 years and 4 loans for Rs. 2,100 for 4 to 5 years. Only 6 loans for Rs. 1,850 were given against personal security and the remaining against land. In the following is given the distribution of all loans by the rates of interest charged. (table 18.5) It should be noted that the rates of interest are 1 aana,  $1\frac{1}{4}$ 

anna and  $1\frac{1}{2}$  anna per rupee per annum, respectively and that this is how they are usually expressed.

Rate of Interest	No. of loans	Total amount
$6\frac{1}{4}$ per cent	315	1,53,039
7.13/16 per cent 7.13/16 to 9.3/8 per cent	36 56	6,565 15,440
	407	1,75,044

Table 1	18.5.
---------	-------

(18.6) The analysis of loans by purpose appears as under:-

Thus, 195 loans for Rs. 87,095 were for capital expenditure on farm while 204 loans for Rs. 84,898 were for current farm expenditure. The remaining 8 loans were for other expenses and amounted to Rs. 3,051.

Purpose	No. of loans	Total Rs.
Bunding and other land	95	40,115
improvements		
Digging and repairing of wells	17	6,425
Purchase of livestock	72	34,530
Purchase of implements	8	5,350
and machinery		
Construction of farm	3	675
houses, barns, cattle sheds		
etc.		
Purchase of fodder	6	1,895
Central Farm Expenses	198	83,003
Non-farm business expen-	1	1,000
diture - on current account		
Construction and repairs of	3	1,200
residential houses and		
other buildings		
Other expenses if any	4	851
Total	407	1,75,044

Table 18.6.

(18.7) Out of the loans made during the year, 140 loans were chosen at random to study the operations of the societies. The loans were sanctioned as under:-

### Table 18.7.

Purpose	No. of loans	Amount
Bunding and other land	27	14,540
improvements		
Digging and repairing of	11	5,500
wells		
Purchase of livestock	26	12,625
Purchase of implements	4	4,300
Purchase of fodder	1	500
General Farm Expenses	66	21,785
Other purposes	5	1,400
Total	140	60,650

the cultivators selected for farm business regarding loans which they had taken from co-operative societies. Among the selected cultivators, 11 of the bigger and 4 of the smaller cultivators reported that they had obtained loans from cooperative societies during the year. Out of the 15 cases. 3 loans were sanctioned within a month from the date of application, 7 were sanctioned within two month and the remaining were sanctioned within three months from the date of application. 8 of the loans were sanctioned for the full amount they had applied for; in the case of 6 other loans, about 50 to 75 per cent of the amount applied for was sanctioned. In the case of the remaining loans, the amount sanctioned was less than 50 per cent of the

(18.8) We could obtain a few details from amount applied for.

# XIX. DISTRICT CENTRAL COOPERATIVE BANK.

(19.1) It was pointed out that the Poona Central Co-operative Bank works as the District Financing Agency. We have gathered a few accounting details of the working of the bank, at the head office as well as at 14 other places where the bank has its branches. In the following we present some of the details of its working for the two years 1949-50 and 1950-51.

(19.2) In the following table is given the composition of the working capital of the Bank:-

|--|

	1949-50	1950-51
Members		
Agricultural Societies	384	428
Agricultural Societies defunct	25	35
Non-agricultural Societies	137	160
Non-agricultural Societies defunct	7	8
Individuals	3,201	3,961
Owned funds		
Paid up share capital	4.08.150	4.39.550
Reserve fund	2,62,276	3,04,399
Reserve for bad and doubtful debts	45,821	48,949
Building fund	1,15,088	1,15,088
Other funds	50,618	57,385
Total owned funds	8,81,953	9,65,371
Borrowed funds outstanding: Current Deposits		
Members and non-members	29,46,121	32,78,035
Central Bank and Banking Unions	4,24,567	1,02,601
Societies	11,97,054	14,25,413
Savings Deposits:		
Members and non-members	54,21,525	55,48,488
Central Bank and Banking Unions	15,102	546
Societies	4,45,610	5,79,573
Fixed Deposits:		
Members and non-members	7,63,526	9,81,456
Central Bank and Banking Unions		
Societies	36,750	21,400
Loans from the Provincial co-operative Bank		10,07,554
Loans from the Central Bank of India, Ltd.	2,47,473	4,26,227
Total working capital	1,23,79,681	1,43,36,664

(19.3) In the following table are given some of the details of its working during the two years 1949-51:-

Table 19.2.

	1949-50	1950-51
Loans and Advances made during		
the year		
To societies	23,19,342	49,38,947
To individuals	12,65,410	18,23,765
Repayment of loans during the year		
By societies	6,03,900	17,16,301

We should note that the figures relating to the working of the Bank for the 1950-51 are about one and a half times larger that those of the previous year. The increase is noticeable in the case of the loans to societies as well as to individuals.

(19.4) In the following table is shown the outstanding position at the end of the year: (table 19.3). Thus, it is found that the outstanding loans also show an increase of about fifty per cent in 1950-51 over the previous year. The proportion of

Та	ble	19	.3

	1949-50	1950-51
	1717 00	1,00001
Loans outstanding at the end of the		
year		
With societies	25,36,902	38,26,675
With individuals	12,65,410	18,23,765
Of which overdue	1,07,300	1,06,871

overdues in the outstanding amount is happily lower in the year 1950-51. In 1949-50, overdues amount to 2.8 per cent of the total outstanding amount whereas in 1950-51, they amounted to 1.8 per cent only of the total amount outstanding. Thus the primary credit co-operative societies meet their short term credit needs from the district financing agency. The Bank has recently adopted a new policy where by the Bank will make loans of one year's duration only to the cultivators.

## XX. DISTRICT LAND MORTGAGE BANK

(20.1) The cultivators have to resort to sources other than the cooperative societies to meet their long term credit requirements. Land Mortgage Bank which is a cooperative institution is expected to meet the long term credit requirement. In the following sections we shall briefly describe the working of the Poona District Land Mortgage Bank.

(20.2) The Bank was started in the year 1935. There were 135 members in 1949-50 and 126 members in 1950-51. The share capital of the Bank was Rs. 23,458 and Rs. 21,933, respectively for the two years. Shareholdings of the borrowing members were as follows:-

1949-50	298 members	Rs. 15.550
1950-51	299 members	14,025

to Rs. 9,200 in 1949-50 and Rs. 9,600 in 1950-51.

(20.3) On account of same administrative and difficulties, the Bank is not able to work satisfactorily. During the two years 1949-51, the Bank disbursed only three loans every year. In 1949-50, Rs. 19,400 were advanced and in 1950-51 Rs. 1,600 were advanced. The loans were given for land improvements and well repairs. The loans took about to two years for sanction from the date of application. All the loans were sanctioned against the land at the rate of  $6\frac{1}{4}$  per cent per annum for 15 years'

duration. The main difficulty in its working is that the Bank had to get the necessary information verified from the Land Valuation Officer of the Government. There is considerable delay in getting such information. The land valuation officers stated that they had enough work on other accounts and delay was unavoidable. The Bank is not able to employ a full time Land Valuation Officer. It has, however, been successful in getting one of the clerks of the bank trained for the purpose from the Cooperative Department. Thus, the long

The reserve and other funds amounted term co-operative finance is practically not available to the cultivators in this district.

## XXI. MARKETING OF AGRICULTURAL PRODUCT.

(21.1) In earlier chapters, attention was drawn to the fact, that traders in agricultural commodities constitute in important source of credit to cultivators in this district. As a preliminary to examining the roll of traders as an agency supplying credit to cultivators, we shall describe, in the present chapter, the general conditions relating to marketing of agricultural product in the district.

(21.2) Poona district has not many commercial crops. However, some of the cash crops are concentrated is certain parts of the district. For instance, sugarcane is concentrated in the eastern parts of the district, particularly in Baramati and Indapur talukas. Groundnut and potato are the two crops concentrated in parts of the north-west region of the district and in Khed, Junnar and Ambegon talukas in particular. Nira and Baramati are the markets for gur and Junnar, Manchar, Khed and Chakan are the markets for potato and groundnut. Cotton was an important crop in Baramati taluka in the prewar years. Cotton was a regulated commodity in Baramati market under the Bombay Agricultural Produce Markets Act, 1927, which was made applicable to

this market in 1936. However, on account of the war-time restrictions on price, sale, etc., on cotton, the cultivators decided to undertake sugarcane production and the cotton market, practically, came to a close. The working of the Act was then suspended. It was in December 1951, that the Baramati market was regulated again in respect of Cotton and Gur, under the B.A.P.N. Act. Manchar market was regulated in the same year for potato and Khed and Chakan, a sub-market under Khed were regulated for potato and groundnut. In addition to these markets, Sirur, Nira and Poona are the other important non-regulated markets in the district.

(21.3) Under the Bombay Agricultural Produce Markets Act. the State Government by a notification declares its intention of regulating the sale and purchase of certain agricultural commodities in a specified area declared to be a market area. All wholesale buying and selling of regulated commodities within the market area can then be done only by licentiate traders and commission agents. Such licenses are required to be renewed every year. For each such market area, is constituted a market committee to enforce the provisions of the Act. The committee consists of 12 to 15 members. One-third of the members are representatives of agricultural producers in the area and another one-third are elected by

the licentiate traders. Of the remaining, one is the representative of the local municipality or Gram-panchayat and others are the nominees of the State Government. The market committee may levy fees on agricultural produce, bought and sold in the market area, according to prescribed rates. The State Government makes rules generally or for each market area specifically, detailing the provisions of the Act. They relate to the election of the office bearers and to the annual budget of the market committees, maximum fees to be levied in respect of produce purchased and sold in the market area, issue of to licences to traders. commission agents, brokers, weighman, measurers, surveyors, warehousemen and other persons operating in the market, weights and measures to be used, trade allowance, storing of produce, settling of disputes between the buyers and sellers, regulation of advances given by brokers or traders to agriculturists, prevention of adulteration, grading and standardisation of produce, manner in which auctions will be conducted and bids in the market, prohibition of brokers from acting on behalf of both buyers and sellers, etc.

(21.4) in the following table, we give a list of the important markets in the district, showing for each, the area of operation and commodities regulated or otherwise sold in the market.

Regulated Markets	
Market place and area of operation	Regulated commodities
Baramati (Baramati taluka except 16 villages	Gur and Cotton
included as market area).	
Manchar	Potato
Khed (within 6 miles radius from Khed market, 18	Potato and groundnut
villages).	
Chakan (Sub-market under Khed)	Potato and groundnut
Other important markets. (Unregulated).	
Market	Important commodities sold in the market
Nira	Gur, Groundnut and pulses
Sirur	Pulses, Oilseeds and Gur
Poona city	Gur, pulses, fruits and vegetables

(21.5) Licences are issued to commission agents, traders and weighmen. Both among wholesale traders and weighmen, there are two classes - 'A' and 'B'. 'A' Class traders are allowed to buy and sell agricultural produce any where in the market area. 'B' Class traders can buy only in the market area outside the market, they may sell anywhere. Among weighmen, the 'A' Class are allowed to operate only in the market while the 'B' Class are allowed to operate only in the market area outside the market. The annual licence fees for commission agents and 'A' Class traders are different in different markets and vary from Rs. 60/- to Rs. 100/-. The fee for 'B' Class traders is usually Rs. 30/- and for retailers, Rs. 10/-. Fees for weighmen of 'A' and 'B' Class are usually Rs. 7/- and Rs. 4/-, respectively. In all the cases, the licences are required every year.

(21.6) Commission charges at the regulated markets are fixed by the market committee. At other markets, the rates are practically the same throughout the market with a slight variation. Weighing and other charges are also fixed in a similar manner.

(21.7) None of these markets has any market yard or market building proper except Baramati market, where cotton cartloads usually arrive and assemble in the market yard and sales take place by auction. In the case of gur, however, the producers take it to the commission agents. Every morning, sales of gur take place by auction in the godowns of the sellers under the supervision of the staff of the market committee. The sales in the afternoon take place near about the price quoted in the morning auctions. The

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cultivator-producer has the option of places via Dhond. As stated earlier, cotdeclining the highest bid for postponing ton was also an important commodity the sale. marketed at this centre, till the outbreak

(21.8) at potato and groundnut markets also, the sales take place by auction. At none of these markets, the produce is graded. At the unregulated markets like Nira, Poona and Sirur, sales take place by inspection and auction.

(21.9) At the time of our investigation, none of the regulated markets had completed even an year of working and as such it was not possible to get information about the volume of business as well as the information relating to minimum and maximum prices of the agricultural produce.

(21.10) Five of the marketing centers were selected for a study of the marketing practices as also of warehousing facilities available there. These are Baramati, Nira, Sirur, Khed and Poona. In the following paragraphs we shall briefly describe the conditions at each one of these market places.

(21.11) Baramati is the most important market in the district, mainly because of gur, which is the most important agricultural produce arriving at this market. It is about 64 miles away from Poona by motor-road. It is also connected by rail to Poona, Sholapur, Manmad and other

ton was also an important commodity marketed at this centre, till the outbreak of war. At present, however, gur is the most important commodity in this market. About 26,000 cartloads of gur and over 2,000 bales of cotton arrive annually it this market. Gram, Arthar and other pulses are also sold in the market but no reliable estimates could be had about the arrivals of these in the market. After a lapse of about eight years, 2 cotton ginning and crossing factories have started working from the 1951-52 season. There are a number of bullock driven oilpresses. There are a number of private godowns wherein about 5,00,000 lumps of gur can be stored during the season. The number of godowns is about 80. About 25 sq. ft. area is required for storing 30 lumps of gur. Rent for storage has not been fixed by the market committee and hence, is not uniform Rs. 3/- per month, per 100 lumps, with 6 months, rent payable in advance is the average rent charged for storing gur. There are 2 state owned godowns with a capacity to store about 10,000 bags of foodgrains. The present system of storage is not satisfactory from the point of view of health and sanitation and the local Municipal authorities are thinking of shifting the godowns outside the city, near the railway station. The Nira Canal Societies' Sale and Purchases Union is an important co-operative marketing institution at this

center. Here, sales take place by inspection and a very broad classification of gur is made. As regards cotton there are two varieties, namely, Jarila and Co4040 Rajpalam Combodian. There is a branch of the Poona Central Co-operative Bank Ltd., and a branch each of the Bharat Industrial Bank Ltd., and the Dena Bank Ltd., at Baramati.

(21.12) Nira is an important marketing centre, about 44 miles away from Poona. It has good transport facilities and gur and other produce can be conveniently sent to distant markets, both by rail as well as by motor trucks. In this market, sales take place by auction at the shops of the traders and commission agents. There are five oil-presses in Nira. The Phaltan Sugar Works Ltd., is about 14 milles from Nira. There is a branch of the Poona Central Co-operative Bank Ltd., at Nira and the bank makes advances to traders and commission agents within the prescribed limits, against the security of agricultural produce in the godowns. A branch of the Nira Canal Co-operative Societies' Sale and Purchase Union of Baramati is an important co-operative marketing institution. The other co-operative marketing society is the Nimbut Multipurpose Society. These two institutions can store about 50,000 lumps on gur in rented godowns during the season. Traders and commission agents at Nira have over 50 godowns with a storage capacity of about 1,00,000 lumps of gur. Rent is charged at Rs. 4/- per month for 100 lumps of gur, if the produce is not sold within 30 days, for the period exceeding 30 days after the arrival of the produce to their shops. The storage period extends from four to six months. There are two Government godowns measuring 100'x 30' x 25'. These godowns are used for storing food grains. No grading of classification is made before the produce is sold. The produce is sold by inspection. Following are the estimates of the agricultural produce arriving at this market.

Commodity	Volume	Value Rs.
Gur	5,50,000 Lumps.	50,50.000
Groundnut	-	15,000
Onions	25,000 Bags	1,00,000

Pulses, oilseeds, fruits and vegetables also arrive at this market but it was not possible to get a reliable estimate about the volume and value of these commodities.

(21.13) Sirur is another important market in the district. At present safflower, gur and pulses are the main commodities arriving at this market. In the prewar period, food grains used to arrive in large quantities in this market. With the introduction of free markets in foodgrains in rural area, this center is likely to gain its old reputation. Sirur is about 42 milles from Poona by road. Ahemednagar, which is the district place of Ahemednagar district, is 33 milles away from here. The total value of transactions in this market per annum exceeds Rs. 16,00,000. In the following, we give estimates of the volume and value of the important commodities marketed at this centre in the year 1950-51:-

Commodity	Volume maunds	Value Rs.
Safflower	26670	400000
Arhar	20000	300000
Mung	17500	300000
Gur	10000	100000
Hulga	10000	100000
Math	6700	100000
Gram	13300	200000
Groundnut	4000	100000

There are 12 bullock-driven oil-presses. However, most of the oil-seeds are sold to Bombay and distant markets. The produce stored by the traders in their owned godowns and residential houses. Storage period is normally six to eight months. Government godowns store about 9,000 bags of food grains.

(21.14) Khed is a taluka town with a population of about 11,000. It is about 26 milles from Poona on the Poona-Nasik motor-road, and about 21 milles from Talegaon railway station on the Poona-Bombay rail-route. The Bombay Agricultural produce Markets Act was made applicable to this market in 1951. Chakan, which is about 7 miles from here,

is a sub-market under the Khed regulated market for groundnut and potato. There three de-corticating are mills for groundnut at Khed. Of these, one is owned by the Tail Samaj Utpadak Sahakari Society. There are 5 paddy dehusking mills and a number of privately owned bullock-driven oil-presses at this market. Potato and groundnut are the two important commodities marketed at this centre. Other Oilseeds and pulses are next in importance. Most of the traders have their own arrangement for storing the produce. About Rs. 10/- are charged per month for storing 50 bags of groundnut. Normally, groundnut is stored for about 4 months from January and potatoes for about 2 to 3 months from June.

(21.15) Poona is an important consumers' market. There are many wholesale traders and commission agents at this centre. Gur, pulses as well as fruits and vegetables are the important commodities marketed at this centre. About 25 lakhs lumps of gur worth Rs.  $2\frac{1}{2}$  crores are

marketed in Poona market. There are a few oil-presses in the city but they consume the oil-seeds purchased at some other centre. There are more than 200 godowns in the marketing area of the city. There are 23 Government godowns with a capacity to store about 7,200 bags of foodgrains in each one of them. As to the period of storage for different commodities, gur, pulses and tobacco require storing facilities for about 4, 6 and twelve months, respectively. The present facilities are adequate though not satisfactory.

# XXII. TRADERS IN AGRICULTURAL COMMODITIES.

(22.1) In order to study the operations of the individual traders it was decided to select and interview 20 traders at each of the five selected centres. Only the market at Baramati was regulated under the B.A.P.N. Act and it was possible to select the sample from the list of the licenses. At other centres, selection was done by our inspector in charge of the fieldwork of the district. They were given brief instructions regarding stratification and random sampling. As the conditions in different districts differed very much and could not be anticipated, the instructions could not be very precise. Naturally, considerable discretion was left with the inspectors and minimum requirement was that the selection should be objective. As it actually appears, the inspectors took great care to make the selection more representatives in the source that all types should be represented and less care on making the selection random. In the following paragraphs we shall briefly summrise the response to our questionnaires to the selected traders at each centre.

(22.2) The method of selection adopted at Baramati was as under:-

A list of licenses was obtained from the Market Committee's office. It was found that there were 60 traders who had obtained purchaser's and/ or General licence. Since the market committee's staff had no ideas about the volume of business of these traders, our Inspector had a talk with the agent of the Banks at Baramati and with the Baramati wholesale Merchants' Association. The categories in to which the traders were divided are not clear enough, though obviously, attempt seems to be, as earlier stated, to make the selection representative in the sense of including in the sample all categories of traders.

(22.3) In the questionnaire addressed to the traders, when they were interviewed addressed to the traders, when they were interviewed, a broad distinction was made between the commission agents, wholesalers and general merchants. Out of the 20 traders selected at Baramati, 3 were purely commission agents, 14 were both wholesalers and commission agents. The remaining three reported so combining all the three functions, namely, those of a wholesaler, commission agent and a general merchant. In the following paragraphs, we shall briefly describe the working of traders in each of these categories.

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(22.4) All the three commission agents dealt in gur only. Two of them used to act as commission agents for local wholesale traders and the third commission agent acted on behalf of the traders in Gujarath, Barer and Bombay. Two of the traders were able to meet the demand for funds completely out of their own resources whereas the third trader resorted to borrowing from the bank. One of them did not make any advance where as the other two, who were licensed moneylenders also, advanced Rs. 20,000 and Rs. 90,000, respectively in about six to eight instalments to the cultivators for current farm and family expenditure.

(22.5) Fourteen other traders combined the business of a wholesaler and commission agent. Six of them combined it with moneylending and two other combined it with moneylending and cultivating. Nine of them dealt only in gur, two in pulses, oilseed cotton and gur and the remaining trader dealt in pulses, oilseeds and gur. Only four of them could manage their business within their own resources. The other resorted to borrowing from the bank or from other wholesalers. Advance from the first source were available at 6 per cent per annum and from the latter at 7-13-0 per cent annum. One of traders advanced to the extent of Rs. 5,000 the other to the extent of Rs. 10,000, two others to the extent of center, 7 were Guirathis, 5 were Jains, 5 Rs. 15000 3 others to the extent of Rs.

25,000 and 2 others to the extent of Rs. 50,000 during the year. The advances were usually made in about six to twelve instalments.

(22.6) Of the three traders, who combined the business of a wholesaler, commission agent and a general merchant, one did not combine any other business with his activities. One of them combined moneylending with these activities and the remaining combined it with both moneylending and farming. The first one dealt in gur and cotton. The second trader dealt in gur, cotton pulses as well as in agricultural implements. The first one did not make any advances, the second advanced to the extent of Rs. 35,000 and the third trader who is perhaps the biggest, advanced over Rs. 3 lakhs. He has got a selling agency for many important products. The first mentioned trader borrowed only from the bank and the second mentioned trader borrowed about 60 per cent of his total borrowing from the bank and the remaining 20 per cent from other moneylenders. In the case of the third trader, he borrowed about 25 per cent of his total borrowings from the bank, about 25 per cent from indigenous bankers and the remaining 50 per cent from other sources.

(22.7) Of the 20 traders selected of this were Marathas and 3 were Brahmins.

Normally, these traders stored the produce in about 30 owned godowns and 30 resort to borrowing from other sources rented godowns. During the period of arrival of new produce, they engaged 100 interest is usually nine per cent in their more rented godowns to store gur.

(22.8) the method by which the traders were selected for study at Nira market was as follows: A list of traders was made with the help of the agent of the Poona Central Co-operative Bank, Ltd. Nira. Most of the traders have a current account with the bank and as such a thorough list could be prepared with the help of this source. It was found that there were 18 wholesale traders and commission agents. It was decided to visit all of them. At the time of investigation it was found that two of them were out of station and were not likely to return for a couple of days. Hence, the questionnaire was filled in, in respect of 16 traders only.

(22.9) of these 16 traders, 4 were only commission agents and the remaining 12 were both wholesalers and commission agents. Two of the commission agents combined their business with moneylending. One of them dealt in gur only whereas the other one dealt in gur and sugar. The first mentioned trader is one of the biggest traders at this centre and his advances during the year amounted to Rs. 3,00,000 and over. He owns a number of godowns and he acts as an agent on behalf of the wholesalers in Gujrath and

Poona area. He is sometimes required to resort to borrowing from other sources for term accommodation. The rate of interest is usually nine per cent in their case. The other commission agent who traded in gur and sugar was a smaller trader and advanced loans to the extent of Rs. 10,000. He owned a godown and acted on behalf of the local traders. The other two commission agents handled gur only. One of them did not have any moneylending licence and he still stated that he advanced about Rs. 50,000 during the year 1950-51. He acted on behalf of the traders in Gujrath, Kathiawar and Bombay.

(22.10) Of the twelve traders who were both wholesalers and commission agents, one combined his business with a flour mill and farming. He was smaller type of trader and was able to meet the demand for funds completely out of his own resources. The remaining 11 wholesalers combined their business with moneylending. Two of them dealt in gur and sugar. They advanced about Rs. 10,000 each, during the year. One of them was able to meet the demand for funds out of his own resources, but the other trader borrowed from the bank when necessary. Both of them stored the produce in their owned godowns. Three other traders dealt in gur, and Kardi. One of theme advanced Rs. 15,000 during the year while the other two traders advanced Rs.

50,000 each during the year. All of them had their own storing arrangements. All of them stated that they were unable to meet demand for funds out of their own resources. In the case of the first mentioned trader, 75 per cent of the finance was obtained from the bank and the remaining from the moneylenders. In the case of the other two traders, one borrowed 45 per cent of his total borrowings from the bank and the remaining from the moneylenders and the other borrowed to the extent of 90 per cent of the total borrowing from the bank and the remaining by drawing hundis.

(22.11) the remaining 6 traders who were wholesalers as well as commission agents combined their business with moneylending as stated earlier. All of them dealt in gur. Four of them had owned godowns and two others stored the produce in hired godowns. Two of the traders advanced Rs. 50,000 each during the year. They were unable to meet their credit requirement out of their own resources. One of them borrowed about 40 per cent of his total borrowing from the bank, about 50 per cent from the moneylenders and about 10 per cent by drawing hundis. In the case of the second trader the corresponding figures were 70 per cent, 20 per cent and 10 per cent, respectively. One of these four traders, advanced Rs. 75,000 during the year and

he met his credit requirements by borrowing from the moneylenders only. Another who advanced about Rs. 1,00,000 resorted to borrowing from wholesalers. One of the traders advanced Rs. 40,000 during the year. When necessary he borrowed to the extent of 40 per cent of his total borrowing from the bank about 50 per cent from other wholesalers and about 20 per cent by drawing hundis. In the case of another trader, the corresponding figures were 60 per cent, 35 per cent and 5 per cent, respectively. It was not possible to estimate his advances during the year.

(22.12) The traders at this centre have the benefit of good transport facilities and keep connections with distant traders at Gujrath and Sourashtra on the north-west and Konkan and Goa on the south-west. 8 of the traders were Jains, one was a Patel, one was a Lingayat wani, one was Mail, one was a Brahmin, and three were Marathas.

(22.13) The method by which the traders at Sirur were selected was similar to the method by which the traders at Nira were selected. It was found that there were only six such traders at this center. One of them was wholesaler- commission agent and traded in gur only. He is a smaller trader and his advances to the cultivators during the year 1950-51 amounted to Rs. 1,000 only. He stored the produce in a rented godown. His main customers were retailers. He resorted to borrowing when he was unable to meet the demand for funds out of his own resources.

(12.14) The remaining five traders combined all the three activities, namely, these of a wholesaler, commission agent and a general merchant. All of them traded in gur, oilseeds and pulses. Four of them owned godowns while one stored the produce ranted godown. All the them had to arrange for additional rented godowns during the season of arrivals of the produce of Rabi season. One of them advanced Rs. 10,000 and another one advanced Rs. 6,000 during the year. The other three trader did not advance any amount. Only one or these five traders was able to meet the demand for funds out his own resources. The other resorted to borrowing from moneylenders and wholesalers. Only one of them obtained about five per cent of his total borrowings from the bank. The traders at this centre are usually required to store pulses for about two months - March and April and gur for about four month November to March. Traders at Poona, Bombay and Ahemednagar are their main customers.

(22.15) None of the traders had a license for moneylending. All the traders were Jain by caste. Only recently restrictions on the sale of foodgrains in open markets

has been lifted and the traders will find a good business at this market which is an important foodgrains market.

(22.16) The method by which the traders at Khed were selected was the same in which the traders at Nira were selected. It was found that there were only 16 such traders at this centre. Two of them were wholesalers and general merchants. One of them dealt only in groundnut while the other one traded in Gram, Arhar and Groundnut. The farmer borrowed from the relatives when necessary while the other trader was able to manage the business within his own resources. The farmer had his own storing arrangements while the latter stored the produce in the godown of the Teli Samaj Co-operative Society. Home of them advanced any amount during the year.

(22.17) the remaining 14 traders were only wholesalers. Two of them traded in Gram, Arhar, Pulses, Groundnut and potatoes. Only one of them advanced about Rs. 1,000 during the year. Both of them were required to borrow from outside source the farmer got bank accommodation while the latter borrowed from his relatives. Both of them stored the produce in owned godowns.

(22.18) The remaining 12 traders were wholesalers in groundnut, 7 of them were able to manage the business within their

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resources though none of them made any advances. Three of them had their own godowns, one of them did not have any storing arrangement while one stored the produce in his house. Of the remaining two, one stored the produce in the godowns of a decorticating mill while the other trader stored the produce in the godown of the Teli Samaj Co-operative Society.

(22.19) Of the 5 other wholesalers, one stored the produce in his houses; the other stored the produce in his shop while the two other traders had their own godowns. One of them did not have any storing accommodation. Of these five traders, one resorted to borrowing from the bank and two resorted to borrowing from other wholesalers. Of the remaining two, one borrowed only from the relatives while the other borrowed about 25 per cent of his total borrowings from the bank and about 75 per cent from the relatives.

(22.20) Of the 16 traders, one was a Maratha, 5 were Telis, one trader was Gujrathi, 2 were Jain-Oswals, one was a Jain Marwari and 6 were Jain- Gujrathis.

(22.21) Poona is an important consumer market. The wholesale traders and commission agents are situated in the heart of the city. There are a few Associations of the traders in Poona. Of these, the Poona Merchants Chamber is an important association of which most of the wholesalers and commission agents in the city are members. The method of selection of traders for our purpose was as follows:-A list of the members of the Poona Merchants Chamber was obtained and with the help of the secretaries of the Poona Merchants Chamber. The Poona Wholesale Jaggery Merchants Association and the Poona and Poona District Tobacco Merchants Association, traders were selected at this centre. Gur, pulses and tobacco were the important agricultural commodities in which these traders dealt. Poona is an important fruit and vegetable market and as such some of the wholesalers and commission agents from the fruit and vegetable market were also selected. The sample of 20 traders was, therefore, as under:-

Commodity	No. of traders
Gur	4
Gur, Chillies, Oils etc.	4
Gram, Arhar and other pulses	4
Tobacco	2
Fruits	2
Potato, Onion & other vegetables	3
Bettle leaves	1
	20

In the following paragraphs, we describe them in that order.

(22.22) Of the four traders, dealing only in gur, one was also a moneylender. One of them advanced about Rs. 25.000 during the year, while the two others were unable to estimate their advances. The trader-moneylender last mentioned advanced more than Rest. 1,00,000 during the year. Expect one trader, all owned godowns for storing the produce. The usual period of storage was from January to August. One of them borrowed from the bank to the extent of 95 per cent of his total borrowings while two other traders were able to meet the demand for funds out of their own resources. The moneylender-trader borrowed only from another moneylender-jeweler. All these were wholesaler-commission traders agents.

(22.23) The other group of four traders dealt in gur, chillies, oil and tea. All these traders were both wholesalers and commission agents except one who combined it with general trading. None of them was a moneylender. Two of them did not advance any amounts while the two others stated their inability to estimate their advances. All of them stored the produce in owned godowns.

(22.24) Of the 4 traders dealing in pulses, 2 were purely wholesalers and two were wholesaler-commission agents. None of them had a moneylending license and they did not advance any loans during the year. 3 of the traders had their own godowns while the fourth trader stored the produce in rented godowns. Only one of them was able to meet the demand for funds out of his own resources. In the case of the other three traders, 95 per cent of their total borrowings were from the banks.

(22.25) Two of the traders traded in tobacco and both of them acted as commission agents. None of them was a moneylender. These traders advanced against the produce which the producers brought to their shops for sale. As it takes a long time to sell the produce, the traders make advances all the year round and adjust the account at the time of sales. It was not possible, therefore, to estimate the advances given by these traders. Both of them owned godowns and were able to manage the business within their own resources. The main markets for their commodity were Poona, Sholapur and other districts of Maharashtra.

(22.26) the trader in battle-leaves was a wholesaler-commission agent. His practice was to advance to the cultivators small amounts but he was unable to estimate his total advances. Battle-leaves dot need any long term storing arrangements. He mainly traded with the local traders. He stated that he was unable to obtain credit from any of the credit auctions during the given period. The some short-term accommodation.

(22.27) Three of the traders, who traded in potatoes, onions and vegetables, were only commission agents. One of them advanced about Rs. 4,000 during the year, the second trader advanced about Rs. 1,000 during the year while the third trader did not advance any amount. The first mentioned trader resorted to borrowing from other wholesalers while the second mentioned trader was able to meet the demand for funds out of his own resources. The third mentioned trader borrowed from other commission agents when necessary.

(22.28) Two other traders were fruit merchants. They acted both as wholesalers and commission agents. They advanced about Rs. 4,000 each to the producers during the year. One of them resorted to borrowing from the bank only at the rate of 9 per cent while the other one managed the business within his own resources. They did not need storing arrangement. Their main problem was the increased rents for the stalls in the market. The commission agents are allowed to do business only during specified hours in the morning. The traders are put too much inconvenience as it is not possible for them to complete the

agencies even though he often needed auctions and the price fetched by the produce is thus adversely affected.

> (22.29) Four of the 20 traders in Poona were Marathas, 2 were Brahmins and 3 were Malis. Two were Rajputs and one was a Muslim. Two were Lingayats and was a Veishnava. There were 3 Jain Guirathis, one Jain Oswal and one Visanagari Brahmin.

(22.30) Some attempt was made to collect information regarding the trade practices from the cultivators selected for the farm business survey. A few details were obtained relating to the actual sales which those cultivators had done during the year. The information was obtained separately for the two periods April to September and October to March.

(22.31) In the visit relating to the period from April to September 1951, only 2 of the 40 smaller cultivators reported 2 sales and 26 of the 80 bigger cultivators reported 37 sales. We might say that 30 out of a representative sample of 160 cultivators reported 41 sales. All the sales were made to private traders. 5 of the sales were of pulses, 16 of commercial crops like oilseeds, etc., and the remaining of the garden crops. In the following we give a few details relating to these sales:-

	No. of Sales
Commodity was delivered in the village	6
Commodity was delivered at the market place.	24
Price was settled before delivery	2
Price was settled at delivery	31
Price was settled after delivery	1
Price was not settled even after delivery	1
Money was borrowed in anticipation of sales	3
Accounts were settled at delivery	32

(22.32) In the second visit relating to the period from October to March 1952, 11 of the smaller 40 cultivators reported 15 sales and 56 of the bigger 80 cultivators reported a total of 97 sales. Only 21 of those sales were to the Government: all the others were to private traders. We might say that 78 out of the 160 cultivators reported 127 sales. The sales were of the following commodities:-

Rice	5	Other pulses	4	Garden crops	20
Wheat	5	Sugarcane	7	Other fruits	3
Millets	38	Oilseeds	14	Gram	4
Other comm	nercial c	crops 12			

# XXIII CO-OPERATIVE MARKETING

(23.1) Co-operative movement has enabled many of the cultivators to obtain credit at reasonable rates of interest from Co-operative Societies. Co-operative Marketing has also shown some encouraging results, though, the system has not been so widely adopted. In the district, Co-operative Marketing Sociwholesale traders and commission agents in big marketing centres like Baramati and Nira. At Poona, there is a District Purchase and Sale Union. The Union had, however, undertaken distribution of controlled commodities only in the past. Only recently the Union has started marketing of agricultural produce. It supplies potato seed and manure through the co-operative credit societies in the district and to enable the societies to recover the dues, the union has made arrangements for the marketing of agricultural produce. There is a Fruit Sale Society at Belhe in Junnar taluka of the district. However, it is not possible to describe its working as at was not covered by our investigation. Purchase and Sale societies are also functioning at other places like Indapur, Junnar, Khed, and Manchar but none of them handles any agricultural produce. In the following paragraphs, we shall study the working of the marketing societies covered by our investigation.

(23.2) the Nira Canal Societies' Sale and Purchase Union, Limited, Baramati mainly deals in Gur, cotton. Turmeric, millets and pulses. It also undertakes distribution of controlled commodities. It serves the whole of the taluka. It had 419 individual members in 1950-51. The number of society-members increased from 64 in 1949-50 to 93 in 1950-51. The eties are functioning along with the paid-up share capital increased from Rs.

39,050 in 1949-50 to Rs. 1,26,550 in was Rs. 268 and Rest. 11,351, respec-1950-51. The reserve fund was, however, Rs. 75,000 in both the years. Other funds increased from Rs. 92,325 in 1949-50 to Rs. 95,152 in 1950-51. Deposits from members and non-members which were together Rs. 49,729 in the year 1949-50 increased to Rs. 1.56.377 in 1950-51. The following figures give a few details of its working:-

	Loans during the year from the Bank	Loans to individuals
1949-50	Rs. 3,40,544	4,29,258
1950-51	Rs. 4,36,895	8,68,582
Outstanding dues		
1949-50	Rs. 1,16,863	85,915
1950-51	Rs. 1,30,908	72,992
Repayment were a	as under:	
1949-50	Rs. 4,29,412	9,27,058
1950-51	Rs. 8,48,626	8,25,687

The union collected and sold on commission basis agricultural produce worth Rs. 24,70,602 in 1949-50 and worth Rs. 21,17,158 in 1950-51. The commission earned by the union amounted to Rs. 12,415 in 1949-50 and Rs. 9,000 in 1950-51. Sudden fall in price of gur during 1950-51 accounts for the fall in the earnings of the commission. Value of seed, manure, etc., supplied to members was Rs. 2,90,300 in 1949-50 and Rs. 3,83,109 in 1950-51. Profits for the years

tively. The society declared a dividend of six per cent in 1950-51. It owns two godowns valued at Rs. 40,000. They measure 340' x 80' x 10' and 100' x 31' x 10', respectively. Formerly those goddowns were owned by the Bombay Provincial Co-operative Bank. The society owns 2 trucks, over a dozen weighing scales and other assets which together are worth about Rs. 1,00,000.

(23.3) The above mentioned Union has branch office at Nira. The value of agricultural produce collected from members and sold by the branch office amounted to Rs. 68,687 in 1949-50 and Rs. 63,287 in 1950-51 and that from non-members worth Rs. 80,182 and Rs. 43,751, respectively for the two years. All the produce was sold on commission basis to the traders. The amount of commission on sales for the two years was Rs. 4,706 and Rs. 3,173, respectively. The value of seed, manure etc., supplied to members and non-members together amounted to Rs. 97,440 in 1949-50 and Rs. 1,41,075 in 1950-51. The branch office earned a profit of Rs. 1,473 in 1949-50 and Rs. 289 in 1950-51.

(23.4) The Nimbut Multipurpose Society marketing of agricultural undertakes produce. The amount earned by way of commission by the society amounted to Rs. 1,045 in 1949-50 and Rs. 1,845 in the

year 1950-51 at the rate of Rs. 1-9-0 for sale worth Rs. 100. At her particulars about its working appear in the earlier chapters.

(23.5) The Baramati Multipurpose Society serves Baramati proper and villages within five miles' radius from Baramati. It had 76 individual members in 1949-50 and 113 in 1950-51. There were 7 society-members in both the years. The working capital of the society increased from Rs. 14,400 in 1949-50 to Rs. 33,130 in the following year. Reserve fund for the two years amounted to Rs. 76 and Rs. 1,614, respectively. The society collected and sold on commission basis agricultural produce worth Rs. 2,79,853 in 1949-50 and Rs. 7,14,138 in 1950-51. The commission earned was Rs. 1,468 and Rs. 3,007, respectively in the two years. The rate of commission was annas two per maund of gur in 1949-50 and annas three in the year 1950-51. The value of seed, manure, etc., supplied by the society to members and non-members together was Rs. 54,264 in 1949-50 and Rs. 48,827 in 1950-51. The value of other consumption goods supplied by the society was Rs. 76,447 and Rs. 1,57,914, respectively during the two years. The earnings for the two years by way of profits were Rs. 500 and Rs. 2,850, respectively. The society declared

a dividend of  $6\frac{1}{4}$  per cent in both the years. The society stored the produce in rented godowns.

(23.6) As stated earlier, the Poona District Purchases and Sale Union serves the whole of the district. It had 176 individual members and 185 society-members in 1949-50. Corresponding figures for 1950-51 were 174 and 226, respectively. In the following are a few details of its working:-

	1949-50	1950-51
	Rs.	Rs.
Paid-up share capital	38,200	40,800
Reserve Fund	37,871	58,138
Other funds	1,52,190	1,98,902
Total owned capital	2,28,261	2,97,840
Loans from the P.C.C. Bank	89,82,856	72,37,328
Value of sales of controlled commodities	72,79,354	57,60,691
Net profit	36,130	34,660
Rate of dividend	$6\frac{1}{4}\%$	$6\frac{1}{4}\%$

It has invested about Rs. 24,000 in the shares of the co-operative institutions. Recently, the Union has constructed a huge building and godowns. The Union depends for its financial needs on the Poona Central Co-operative Bank to a considerable extent.

#### XXIV. PRIVATE FINANCING AGENCIES

(24.1) Traders in agricultural commodities form an important source of credit supply to the cultivators. Among the other financing agencies, the principal are the commercial banks on the one hand and indigenous bankers and moneylenders on the other. We had earlier mentioned that the district has good banking facilities. In addition to the large number of the branches of the Poona Central Co-operative Bank spread all over the district, there are nine urban co-operative Banks and a number of branches of scheduled and nonscheduled banks. The commercial banks have their offices in Poona. Only the Bharat Industrial Bank has a branch office at Baramati and Lonavala and the Dena Bank has its offices at Baramati and Walchandnagar. In the city proper there are two branches of the Imperial Bank of India, and branch of two of each of the "Big Five" Banks.

(24.2) As part of our investigation, we had mailed a questionnaire to the loacal offices of the commercial banks requesting for information regarding their advances and loans to the agriculturists. As the purposes for which the advance was made might not have been noted in the books of the banks, we inquired specifically about the advances against agricultural produce. We could collect the information from ten scheduled banks

and four non-scheduled banks. No reply was received from the Imperial Bank of India. Of the four non-scheduled reporting banks, only one banks stated that all of its advances were for trading in agricultural produce. Of the ten scheduled banks, six banks stated that they did not advance any loans against the security of agricultural produce. The remaining four banks advanced Rs. 4,22,649 to wholesalers and commission agents only. 34 per cent of the amount was given for general trading to the wholesalers, 51 per cent for purchase of agricultural produce and 15 per cent to commission agents. There were 30 accounts of wholesalers and 6 of commission agents. 37 per cent of the amount was stated to be cash credit for gur, pulses, tea, etc. 61 per cent of the amount was on overdraft account for pulses gur and groundnut. The remaining two per cent was given by way of loan for purchase of gur. There were 20 accounts in the first category and 15 and 1 account in the second and the third categories, respectively. Only one branch reported that the proportion of the advances to individuals bankers and moneylenders to its total advances was less than 0.25 per cent. Only 14 per cent of the amount was advanced against clean security and the remaining against other security. October, November, February and March were the months of heavy demand and May to July were the months of heavy repayment.

(24.3) The accountant in charge of the (24.6) The Manager of the Dena Limited, branch of the Dena Bank, Limited, Baramati, reported that advances against gur, outstanding on 30-9-1951 were Rs. 52,909 on 8 accounts. About Rs. 15,580 were due from four wholesalers and Rs. 37,330 from four commission agents. All these borrowers used the funds for trading purposes. Demand was heavy during October and March and repayments took place in the months of April to September.

(24.4) The Central Bank of India reported that advances against pulses, gur and tea outstanding on 30-9-1951 amounted to Rest. 78,456, given to wholesalers by way of cash credit for general trading purposes. No information could be had in respect of other questions.

(24.5) the Manager of the Bank of Poona stated that the amount outstanding on 30-9-1951 was Rs. 17,300 of which advances against pulses to one trader amounted to Rs. 7,700 and the balance was an advance to a trader for gur. The advances were made for the purchase of agricultural commodities. He stated that advances on collateral, other than agricultural produce such as bullion, etc., were being used in their area for agricultural purposes. The amount involved at their branch was about Rs. 30,000 which was being utilised for agricultural purposes.

Poona stated that the amount outstanding due on 30-9-1951 was Rs. 25,950 reported as cash credit for gram, other pulses and gur and Rs. 2,48,034 as overdraft for gur, groundnut, gram, etc., to 14 wholesalers under hypothecation. About 20 per cent of the amount was utilised for general trading purposes and about 80 per cent for the purchases of agricultural commodities. October, November, February and March were the months of heavy demand for funds while April, August and September were the months of heavy repayment.

(24.7) The Bharat Industrial Bank, Limited, is a non-scheduled bank. The total amount outstanding on 30-9-51 was Rs. 2,47,338 advanced to 26 wholesalers and commission agents for gur and Kardi. In the case of this banks, demand for funds was heavy during December and May. Repayments took place between August and September. The agent stated that about Rs. 8,600, advanced by their branch against collateral, other than agricultural produce such as bullion, etc., were being utilised for agricultural purposes.

(24.8) It is clear that the commercial banks do not themselves finance the agriculturists directly. Their finance in this direction mainly goes through the wholesale traders and commission agents. The principal private agency of

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private moneylender. To study their Nira, there were 14 moneylenders and operations it was intended to select a there was no choice but to take all for the sample of about 20 moneylenders at each of the five selected centers. Under the Bombay moneylenders' Act (1946), every moneylender is required to take a license. A list of such licenced moneylenders was available at the office of the Assistant Register of Moneylenders, Poona. A random sample was taken for the case study. It was possible, however, that there were some moneylenders who were not licensed but still they carried on unauthorised business. But there were no means of knowing their names, etc., and if that could be known, it was of little use to interview them. The following information is, therefore, based on the interview with licensed moneylenders only and naturally would relate to their authorised business only.

(24.9) There were 325 moneylenders in Poona in 1951-52. More than half of these moneylenders had hardly a single transaction during the year. More than twothirds of the moneylenders combined moneylending with trading. 20 of these moneylenders were randomly selected to make the sample representative of the different types amongst them. At Baramati, there were 52 moneylenders in 1951-52, and almost all of them were traders in agricultural commodities. A sample of 20 was, therefore, selected at even against a sound security. The rate of

finance in the district is, therefore, the random out of these moneylenders. At purpose of the survey. At Khed, there was no moneylender while at Sirur, there was only one moneylender. Thus, a total of 54 moneylenders were selected and interviewed. The following information is based on these 54 moneylenders interviewed.

> (24.10) Of the 54 moneylenders, 33 were traders in agricultural commodities, 11 were shop-keepers, 7 were goldsmiths and the remaining three were noncultivators. Of the traders, three were non-cultivating landlords and four were shopkeepers; the remaining were wholesalers, commission agents, etc., 23 of the moneylenders were in business for more than 25 years; another 21 were in business for more than 5 years and the remaining were newcomers. In the case of 22 out of the 54 moneylenders, the agriculturist formed more than 75 per cent of their clientele; in the case of another four, they formed more than 50 per cent. In the case of 19 moneylenders, more than 75 per cent of their business was with the agriculturist; in the case of three others, it was between 50 to 75 per cent and in the case of 8 others, it was between 26 and 50 per cent. 7 of the moneylenders said that they could not normally advance more than Rs. 1,000

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interest which the moneylenders said they would consider reasonable on secured loans were between 6 and 9 per cent and 9 to 12 per cent on cash credit or unsecured loans. 24 of the 54 moneylenders said that their owned funds were

adequate for their business and, therefore, they did not borrow from elsewhere. Of the remaining, 21 borrowed generally from commercial banks and at times from other moneylenders.

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