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JOURNAL OF INDIAN SCHOOL OF POLITICAL ECONOMY is devoted to a study of the Indian Economy, Polity and Society. Emphasis will be on reviewing developments since Independence with roots in the British administration where relevant. When a review is based on statistical data, efforts will be to present full statistical base. The Journal is intended to be a quarterly. However, in this first year, we shall bring out only two issues, January-June 1989 and July -December 1989. In 1990, we expect to bring out three issues and thereafter four issues beginning in 1991. The annual subscription this year (for two issues) is Rs. 200 or US$ 20.

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Maital, S., 1973; 'Public Goods and Income Distribution', *Econometrica*, Vol. XLI, May, 1973.

Chakravarty, S. 1987; *Development Planning: The Indian Experience*, Clarendon Press, Oxford, 1987.

If a Reference is cited in a Note, the Note may use the shortened reference form:

4. For a critique of recent industrial policy proposals, see Marshall (Marshall, 1983, pp. 281-98).

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DEVELOPMENT OF AGRICULTURAL ADMINISTRATION IN INDIA

V.M.Dandekar and F.K.Wadia

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

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

Beginnings

Until 1870, the affairs of agriculture in India were looked after in the Home Department of the Government of India. There was no separate department of agriculture. In 1869 Lord Mayo, then Viceroy of India, wrote to the Governor of Madras: "I really think that the time is come when we ought to start something like an agriculture department in the Government of India with branches in the Presidencies ... Agriculture, on which everyone here depends, is almost entirely neglected by the Government" [Hunter, 1875, Pp. 319-329]. Accordingly, in 1871, a department called the Department of Revenue, Agriculture and Commerce was carved out of the Home Department. Naturally, it was conceived as a department of an imperial government and among its primary functions, the first to mention were "those discharged by the Departments of Agriculture in America, in France and, generally speaking in all European countries having, like India, a centralized form of Government"[Hunter, 1875, Pp. 333-334]. As its name suggests, it was assigned numerous miscellaneous duties and functions. Burdened with the varied subjects transferred to it, and with no definite programme of its own, the new Department lost sight of Agricultural Reform. Finally, in 1878, the Department was reabsorbed in the Home Department.

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

The Famine Commission had given high priority to the collection of agricultural information, and the Government of India went still further. The absence of reliable knowledge of existing conditions had been borne in upon the Government of India by the break down of their machinery when faced by recurrent periods of famine and scarcity and the Government insisted that thorough adaptation of the existing revenue systems to agricultural facts and conditions should take precedence over agricultural experiments. Nevertheless, the Secretary of State was

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should take precedence over agricultural experiments. Nevertheless, the Secretary of State was asked repeatedly in 1882, 1884, and 1886, to sanction the appointment of an Agricultural Chemist to act with the Department, 'Chemistry being that science which bears, perhaps, most directly on Agriculture'. In November 1889, Dr. Voelcker, Consulting Chemist to the Royal Agricultural Society of England, was appointed to enquire into and advise upon (i) improvement of Indian Agriculture by scientific means, and (ii) improvement of Indian Agriculture generally. Thus, the importance of science and technology for the development of Indian agriculture was recognized as early as a hundred years ago.

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

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

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

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

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

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

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

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

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

Lord Curzon's Government fully realised that a central institution under the direct control of the Government of India could only be the apex of their scheme and that such an institution would be valueless unless there were, at the same time, a real development of agriculture in the provinces. In 1905, therefore, the Government of India

announced their intention to promote the establishment of agricultural colleges with a course of three years' duration in all the provinces and the provision of an expert staff for these institutions for purposes of research as well as for instruction. The link between the colleges and the districts was to be provided by an experimental farm to be established in each large tract in which the agricultural conditions were approximately homogeneous and by numerous small demonstration farms which were to carry the work on the experimental farms a stage further. The expert officers in charge of the farms were to be in close touch with the cultivators and advise them in regard to the introduction of improved methods of agriculture. The scheme also provided for the appointment of a full-time Director of Agriculture in all the major provinces. In 1906, the various expert appointments in the Imperial and Provincial agricultural departments which were contemplated as well as those already in existence were constituted into an Imperial service known as the Indian Agricultural Service.

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

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

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

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

Royal Commission on Agriculture, 1928

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

The Commission emphasised the importance of agricultural research in agricultural development. The basis of all agricultural progress, it said, was experiment. "However efficient the organisation which is built up for demonstration and propaganda, unless that organisation is based on the

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

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

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

Imperial Council of Agricultural Research, June 1928

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

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

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

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

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

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

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

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

of Agriculture in the Ministry of Agriculture. A panel of special officers were appointed as Advisers in different disciplines of agricultural production, vegetables, fruit, livestock, dairying, fish, seeds, fertilisers, plant protection, forestry, irrigation, minor works, and training.

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

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

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

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

On his appointment as Minister for Food and Agriculture, and as ex- officio Chairman of the Indian Council of Agricultural Research, Shri K.M. Munshi felt that with the achievement of Independence, the Council required reorientation in its outlook from colonial to national. To justify its existence, the ICAR should not merely content itself with the coordination of effort in the field of research by the various State Governments, etc.; its object should be to help achieve the fulfilment of the Intensive Cultivation Programme of the Government of India; its activities should extend to the field of agriculture, animal husbandry, forestry, fisheries and allied subjects

in all the three different stages, viz., (a) fundamental research, (b) technological investigation, and (c) introduction into practice, in other words, extension.

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

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

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

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

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

Grow More Food Enquiry Committee, June 1952

In February 1952, the Government of India set up a Committee of Enquiry to examine the working of the GMF. The Committee pointed out that, though the GMF operations covered only a small proportion of the total cultivated area, only

two to four per cent, never before were sustained efforts made on such a scale as in these years. Their effect had been to spread knowledge of the possibilities of improved agriculture among a wider section of the agricultural population than in any previous period.

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

The Extension Organisation was expected to secure local cooperation, to stimulate local initiative, to promote community activities, and to see that the vast unutilized energy in villages was harnessed to work for the benefit of a part or whole of the community. Training of the staff was the first requisite before the extension organisation could be spread all over the country and necessary arrangements should be made for getting the required number of trained personnel particularly at the level of village workers. The Committee recommended the organisation of cooperative societies and, through them, granting of loans, short, medium and long term, and a special programme of minor irrigation works, land improvement, and supply schemes. The Committee recommended that initially the GMF should be concentrated as far as possible in the 55 Community Projects set up under the Indo-U.S. Technical Assistance Programme. Preference should also be given to intensive blocks in which GMF was being carried on in the States.

The Committee further recommended that the role of the Government of India should be confined to: (a) formulation of overall policies and coordination of programmes of village development including targets of additional production; (b) giving of financial and technical assistance; (c) making arrangements for supplies and movement of essential materials; and (d) assessment of results of the programme. A special Division in the Central Ministry of Food and Agriculture should deal with these functions with regard to the entire programme. One wonders what the Committee thought they were confining the role of the Government of India to. Formulation of policies, coordination of programmes, financial and technical assistance, assessment of results, these are precisely the reins of power which the Government of India has been reigning with.

First Five Year Plan (1951-56)

The First Five Year Plan (1951-56) made its proposals, *inter alia*, on agricultural research, education, and training. It was suggested that, in order that the ICAR may discharge its statutory duty of coordinating all agricultural research in the country, all research programmes, whether of the Commodity Committees, State Governments, or Central Institutes, should be sent to this body for scrutiny and approval. Thus, in the name of coordination, all direction and control of agricultural research in the country was vested in the hands of the ICAR. All this was done with the full knowledge that the ICAR was not discharging its responsibility satisfactorily. In fact, it was noted

that, the scrutiny of all research programmes received was done by the the Scientific Committees of the ICAR which met only for a few days just before the annual meeting of the Advisory Board and the Governing Body and this did not permit a detailed and proper examination of the research proposals. But the Planning Commission would not see that this was inevitable with so much authority concentrated in a single agency. Instead, the Planning Commission was content with suggesting that the Scientific Committees of the ICAR should meet more frequently, at least twice a year, once for examining the schemes and once for assessing their progress and that these meetings should allow sufficient time for a proper examination and assessment; and finally, that the Research Board of the ICAR must consist of top-ranking agricultural scientists in the country ! [Planning Commission, 1953, Pp.271-272].

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

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

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

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

Second Five Year Plan (1956-61)

In March 1957, the Planning Commission set up a Committee on Agricultural Personnel to assess requirements for trained personnel during the Second and Third Five Year Plans. The Committee submitted its report in March 1958. The Committee estimated that there would be need for 8,900 agricultural graduates between June 1957 and March 1961 and another 27,500 during the Third Plan period resulting in an annual demand for 5,500 agricultural graduates. For this purpose, it was necessary to provide facilities for admissions in the agricultural colleges of 6,000 students annually compared to 2,600 in 1957-58. The Committee suggested that this should be done by expanding, wherever possible, the existing institutions to the desired level without lowering the efficiency of training. Assuming that the admissions in the existing institutions could be increased to 4,500, which was almost doubling,

and that the new Agricultural University proposed to be established at Rudrapur (Uttar Pradesh) would take about 200 students per year, there would still be need for 8 new institutions with a total of 1,300 seats. The Committee recommended that the new institutions may be set up in States or Zones where the gap between the output and prospective demand was the greatest and that in selecting the locations for the new agricultural colleges, certain principles enunciated by the Indo-American Team on Agricultural Research and Education, with the object of developing research, education and extension as an integrated programme, should be borne in mind.

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

Agricultural Administration Committee, October 1958

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

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

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

planning; etc. The Third Plan recommended that the States' agricultural administration should be strengthened along these lines.

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

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

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

On Agricultural Research, the Study Team recommended, *inter alia*, that all the Central Research Institutes and the Commodity Committees, including the Central Sugarcane Committee, should be brought under the full technical and administrative control of the ICAR. To ensure the States' capability to assume responsibility for research, the Government of India should make available to the ICAR a substantial allotment of funds in the Third Five Year Plan to be expended on the basis of a careful assessment of the needs of each State. While the Study Team recommended so much concentration of technical, administrative, and financial control in the hands of the ICAR, it could not avoid recommending that measures should be adopted to increase the incentives, morale, and scientific integrity of agricultural research scientists. The Study Team would not see that it was the concentration of the direction of research in the hands of a single agency which was undermining the morale, and integrity of agricultural scientists in the country.

On Agricultural Extension, the Study Team recommended streamlining of the organisation of agriculture and community development from the Central Government down to the village level and suggested a pattern of organizational set up for the purpose. The Team recommended that Extension Workers including Village Level Workers, Gram Sevikas, and Block Staff personnel should be trained at agricultural and home science colleges.

Ford Foundation Agricultural Production Teams, 1959

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

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

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

Third Five Year Plan (1961-66)

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

Intensive Agricultural Development Programme

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

The Committee's major conclusion was that the time had come to move from the limited focus on the 15 IADP districts to an Intensive Agricultural Modernization Programme geared to the potential of the farmers in all districts. The Committee was convinced that to modernize agriculture in India, the power to direct agricultural programme must

rest upon a district organisation. Considering the high degree of technical knowledge needed for handling the complex problems of modern agriculture, technical officers, instead of general administrators, should be appointed in charge of the programmes; they could be given training in management and administration. While the directing function must be local, the Centre and the States should concentrate on exercising a guiding and influencing role, setting policies and creating necessary climate for local effort. There was also need to strengthen the link between the agricultural universities and the State Departments of Agriculture.

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

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

Study Team on Agricultural Administration, September 1967

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

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

The Administrative Reforms Commission (ARC) examined the recommendations of the Study Team on Agricultural Administration. According to the ARC, the Centre cannot give up

its basic responsibilities in matters like formulation of overall national policy and programmes, and mobilising the support of States for their implementation; and that the relations with States call for their handling at the highest administrative level. So not much happened.

Fourth Five Year Plan (1969-74)

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

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

With the evolution of high-yielding varieties of seeds, a New Strategy for Agricultural Development was announced in 1966-67. Major changes were made in the working of the Indian Council of Agricultural Research; for instance, appointment of an outstanding scientist as the Chief Executive of the Council with the designation of Director-General, and bringing under the reorganized Council all the research institutions under the control of the Departments of Food and Agriculture, including those under the Central Commodity Committees. The basic intention behind these decisions was to make the Council a truly functional, technically competent, and fully autonomous organization for promoting, guiding, co-ordinating, and directing agricultural and animal husbandry research and

education throughout the country. Subsequently, nine Central Commodity Committees dealing with cotton, oilseeds, lac, coconut, sugarcane, jute, tobacco, arecanut, and spices and cashewnut were abolished; all research work handled by these Committees, including the administrative control of their research stations and institutes, was tranferred to the Council; and all the development and marketing programmes and schemes being handled by the Commodity Committees were taken over by the Department of Agriculture.

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

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

National Commission on Agriculture, 1976

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

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

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

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

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

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

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

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

of the total plan outlay under agricultural development programmes should be earmarked in the State budget for agricultural education and research.

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

The ICAR had introduced cadres of Agricultural Research Service. For the initial induction, the candidates for Agricultural Research Service should possess research experience and evidence of research capability, making it necessary to raise the age of candidates to 28 years. The impact of this innovation on the quality of research output should be watched and evaluated before any further changes were introduced.

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

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

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

sections of home science and nutrition education in the Directorate of Extension in the Centre should be suitably strengthened so that they could provide the desirable national leadership. All such programmes handled by other departments and universities should be brought into its fold.

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

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

Fifth Five Year Plan (1974-79)

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

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

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

In the Fifth Plan, a number of agricultural polytechnics, called Krishi Vigyan Kendras, were proposed to be set up. They were to be run by either agricultural universities or ICAR institutions and provide in-service training to the

extension staff of the departments of agriculture, animal husbandry, and fisheries, and public/private sector corporations, and to impart technical skills to selected farmers. They were to cater to the needs of those who were either already in employment or were self-employed. No diplomas were to be awarded by the Kendras. The emphasis was to be on imparting practical training in techniques which were of immediate relevance to the region concerned.

Farmers' Training

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

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

Sixth Five Year Plan (1980-85)

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

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

It had become increasingly difficult to implement many of the research projects/programmes in tribal and backward areas due to lack of competent technical manpower and specialists. Hence, a Comprehensive Project of additional compensatory benefits was sanctioned for scientists of the ICAR to attract them to such neglected areas. A programme of Human Resource Development was started to provide

financial assistance to deserving students from tribal and backward districts for higher studies up to post-graduate level, so that they could go back to their areas and help develop them. The educational programmes in the agricultural universities were to be strengthened to improve their quality and to make them increasingly relevant to the development needs of the country. Higher educational programmes to train the required manpower for research in different branches was to receive special attention. The Krishi Vigyan Kendra programme (KVKs) started towards the end of the Fourth Five Year Plan was to be further strengthened. The National Academy for Agricultural Research Management (NAARM), which was set up at Hyderabad during the Fifth Plan period for imparting better management skills to research scientists, was to be fully developed to train the new entrants and in-service personnel at various levels in ICAR institutes, Agricultural Universities and in States and Central Government development departments.

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

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

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

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

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

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

Seventh Five Year Plan (1985-90)

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

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

By 1986-87, of the 17 major States where Training and Visit system was in operation, 10 States had completed the project period of five years. To consolidate their experiences, the National Agricultural Extension Project (NAEP) was brought under operation in three separate parts. Under the first phase of the project (NAEP-1), the States of Madhya Pradesh, Rajasthan and Orissa were taken up for further improvement of the system. Centrally Sponsored Special sub-projects were drawn up from time to time to bridge gaps in the on-going extension system. The second phase of the project (NAEP-II) was taken up for the States of Gujarat, Haryana, Karnataka and Jammu & Kashmir and was largely devoted to strengthening the State component of the system. The third phase

(NAEP-III) which had been negotiated with the World Bank, besides covering some Central Sector and Centrally sponsored components, was also to cover extension projects in a number of States, other than those in the first and second phase.

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

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

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

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

The pace of implementation of the extension projects was not uniform in all the States. In some States there were serious problems mainly due to inadequate funding and delay in the recruitment and placement of personnel and execution of civil works. Nevertheless, the Mid-Term Appraisal of

the Seventh Plan found that the overall conclusion of the various evaluation studies was that the reformed extension had induced positive changes both institutional and economic. Of course, first, farmers' education was replaced by professional extension and then by its management.

Reorganization of the Ministry of Agriculture, 1985

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

Indian Council of Agricultural Research

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

The ICAR operated 18 schemes under the agricultural education programme covering three major aspects, viz., (i) institutional development, (ii) qualitative improvement of agricultural education and research; and (iii) manpower development. The ICAR was also implementing the National Agricultural Research Project (NARP) to strengthen the regional research capabilities of the agricultural universities for conducting need-based research. The project came into effect in January 1979 and Phase I of the NARP terminated on September 30, 1985. During Phase I, the research reviews of 22 agricultural universities (covering 16 States except Jammu & Kashimar) were completed. The reviews provided detailed information on each agro-climatic zone in the state, the constraints in production and the research requirements of the zone. Based on the information, investment proposals for strengthening the research programmes and for rationalisation of the research organisations of the state, were being formulated. Out of the 127 agro-climatic zones identified under the jurisdiction of 23 agricultural universities, 81 research sub-projects had been sanctioned up to March 31, 1985. In phase II of the Project commencing October 1, 1985 all agricultural universities were eligible for assistance subject to effective implementation of Phase I and the acceptance of basic eligibility conditions by the universities.

There were 26 State Agricultural Universities, which had functional linkages with the ICAR. By the end of the Sixth Plan, about 9,600 seats for agricultural graduates were available in 85 agricultural colleges in the country. These colleges were either part of the 26 agricultural universities

or affiliated to traditional universities. The erstwhile Central Staff College, now redesignated as the National Academy of Agricultural Research Management (NAARM), has been functioning since 1976 and is training new entrants to the Agricultural Research Service, besides giving orientation courses to senior scientists including directors of institutes.

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

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

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

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

undertaken. Other data to be collected included spread of markets, credit infrastructure, banks and cooperative societies, etc.

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

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

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

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

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

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

securing minimum standards of tillage to be observed in the village; and (viii) to assist in the procurement and sale of surplus foodgrains.

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

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DEVELOPMENT OF POPULATION POLICY IN INDIA

The paper traces the evolution of population policy in India since the beginning of the First Five Year Plan. During the first three Plan periods no targets or time span for reduction of birth rates was laid down. It was expected that public health, education and family planning programmes would help in reducing the birth rates. But the birth rates did not decline appreciably. Hence, with the commencement of the Fourth Plan, specific goal for reduction of birth rates from 39 per thousand to 25 per thousand within the next ten to twelve years was envisaged. By the Seventh Plan, the goal to be achieved was set in terms of the Net Reproduction Rate. An account of the development of the organisation set up for implementation of the population policy and the anomalies in it are given. Strategies adopted in each Plan period are discussed.

DIMENSIONS OF POPULATION POLICY

The term population policy in its broad connotation would cover decisions of the State to achieve certain social, economic and political goals. It has two interacting aspects - the quantitative and the qualitative - both essential for achievement of these goals. The quantitative aspect, includes the critical demographic variables such as the size, composition and growth of population, its geographical distribution and its demographic characteristics. The qualitative aspect relates to subjects like health, nutrition, human genetics, education, environment, shelter, physical and psychological well being, wage and employment, redistribution policies and other social and economic measures. It covers the whole spectrum of the life cycle and all activities where the population factor is important.

Population Growth and Family Planning Sub-Committee

The first step taken by the Planning Commission during planning exercises was formation of committees (panels) for different subjects. These committees included experts and others associated with the subject both from Government and non-Government sectors. One of the Panels appointed by the Planning Commission was on health programmes and another on social welfare. There were differences of opinion on family planning in both the Panels. There was not much difficulty in convincing the members of the Panel on Social Welfare of the importance of family planning in a social welfare programme. The situation in the Health Panel was different. The Health Minister who was Chair-person of the Health Panel strongly opposed the inclusion of family planning in health programmes, while a number of members of the Panel were in favour of its inclusion. The Health Panel, therefore, appointed a sub-committee on Population Growth and Family Planning, on April 11, 1951. The sub-committee submitted its report on April 14, 1951. The recommendations made were in three parts, viz., first, recognition of the need for family planning; second, specific Government measures in relation to family limitation; and third, improvement of population data and systematic studies of the population problem.

The sub-committee recommended that "the National birth rate should be reduced concurrently with the National death rate, until the population is stabilised at a level consistent with requirement of national economy." The rationale

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Summary by F.K. Wadia.

of two-fold family limitation would "assure the success of plans and programmes designed to promote the health and welfare of the people and develop the national economy." The sub-committee further emphasised that "family limitation is necessary and desirable in the interest of the family. It is necessary and desirable that the members of every family comprising the nation take all suitable and practicable steps for securing that the occurrence of a birth in the family is properly spaced in time and limited in number, so as to safeguard the health of the mother and child and enable an adequate share of the resources of the family being applied effectively to the care and upbringing of children." Specific Government measures recommended, included provision of facilities for sterilisation or giving advice on contraception on medical, social and economic grounds. The services for help and advice were however made conditional to the extent that personnel in hospitals and health services could undertake them, consistent with their duties. One member of the sub-committee, Lady Rama Rao, considered such conditional provision unduly restrictive. In a supplementary note to the report, among other recommendations, she suggested that a definite provision should be made for birth control under the guidance of medical officers trained for this purpose; all State hospitals, maternity and child welfare clinics existing and planned for the future, whether in urban or rural areas, all future programmes for the promotion of health measures for the people, whether medical or educational should include family planning as an integral part; and birth control appliances and literature should be part of the equipment of every health centre in the country and should be made available free of cost wherever free medical services were rendered to poorer classes.

Among the specific Government measures the sub-committee also recommended that the State should through financial aid and otherwise, assist in the establishment of a Research and Information Centre organised for collection, study and dissemination of information based on scientifically tested experience in the country and abroad in respect of all aspects of family limitations and the countering of ill effects of incorrect information; and research necessary for the development of inexpensive, safe and efficacious methods of birth control suitable for all classes of people; and methods of preparation of necessary appliances and material based on raw materials available in the country. Another member, Dr. Sushila Nayyar, expressed the view that "the first priority is education and improvement of living conditions which will create an incentive on the part of the people to limit their families... the utmost that can be asked of the State is that it should not interfere with the social agency which wishes to undertake family planning activities... the resources of the State should be utilised in the fundamental constructive activities... the state can never control population whether it be a drive for increasing or lowering birth rates... The social and economic factors alone can prove decisive..."[Planning Commission, 1951].

The report of the Sub-Committee on Population Growth and Family Planning was discussed by the Planning Commission in April 1952. It was decided that two Committees, viz., Population Policy Committee in the Planning Commission and Family Planning Research and Programme Committee, in the Directorate General Health Services, Ministry of Health should be set up.

The First Five Year Plan (1951-1956)

The Report of the First Five Year Plan was issued in December 1952. The plan was geared to attain sustained economic and social development, opportunities for gainful employment, improved living and working conditions of the people and the opportunity to lead a good life. The population policy emerged in the following words: "the reduction of birth rate to the extent necessary to stabilise the population at a level consistent with the requirements of national economy". While declaring this policy it was stated that "The main appeal for family planning is based on considerations of health and welfare of the family. Family limitations or spacing of children is necessary and desirable in order to secure better health for the mother and better care and upbringing of children. Measures directed to this end, should, therefore, form part of the public

health programme". Population policy was viewed as an integral and essential part of development [Planning Commission, 1953].

The Second Five Year Plan (1956-1961)

Within the general policy frame of the second plan, the earlier policy to slow down the rate of population growth was reiterated. The Plan came to "the conclusion that an effective curb on population growth is an important condition for rapid improvement in income and levels of living" [Planning Commission, 1956].

The Third Five Year Plan (1961-1966)

There was one notable difference in the policy in the Third Plan. While stating that "the objective of stabilising the growth of population over a reasonable period must be at the very centre of planned development", it specifically linked population policy with social policies like education of women, opening new employment opportunities for them and raising the age of marriage. It also referred to an enlarged scope of family planning progrpfamme. It stated that "In addition to advice on birth control, the family planning programme should include sex and family life education and advice on such other measures as may be necessary to promote welfare of family" [Planning Commission 1962(a)].

Inter Plan Period (1966-69) and Fourth Plan (1969-74)

The economic situation in the country was serious. Instead of a Five Year Plan, annual plans were drawn up during 1966-1969. This, however, did not effect the population policy. In fact, financial inputs were higher than in previous years. The basic policy continued as before, but in more specific terms. While referring to population growth as a crippling handicap the aim stated was a reduction of birth rate from 39 per 1000 to 25 per 1000 within the next 10-12 years [Planning Commission, 1970].

The Fifth Five Year Plan (1974-1979)

The Fifth Plan again emphasised the necessity of accelerating the reduction of birth rate through massive family planning efforts. The aim laid down was to reduce the birth rate to 25 per 1000 and population growth to 1.4 per cent by the end of the Sixth Plan. A new dimension was added to the population policy. Among the five items in the Minimum Needs Programme was an integrated package of health, family planning and nutrition. A 20-point programme was also launched.[1] This was supplemented by a 5-point social programme (which included family planning). The Third Five Year Plan had linked education and employment of women, raising age of marriage and other measures to promote family welfare. Some new aspects had come to the notice of government, like apprehension by some States doing well in family planning programme of reduced representation in the Parliament. A major policy Statement was made on April 16, 1976 entitled the National Population Policy. The Statement covered a package of measures, such as freezing the population base at 1971 level for determining the representation in the Parliament, and the State legislatures and also all cases where population was a factor as in the allocation of Central assistance to State Plans, devolution of taxes and duties and grants-in-aid, to the year 2001; raising the age of marriage for girls to 18 years and boys to 21 years; upgrading female education level, particularly above middle level, as well as non-formal education for women especially in some backward states; extending aid to voluntary organisations; introducing incentives and disincentives; evolving multi-media motivational strategy; increasing involvement of other ministries and full and active cooperation of the people at large. The Statement stressed that the real enemy was poverty and underlined the Minimum Needs Programme and 20-point economic programme [Ministry of Health and Family Planning, 1976].

The Draft Sixth Five Year Plan (1978-1983): Janata Regime

In 1975 when the Emergency was declared in the country, coercion in the sterilization programme was reported. Besides serious distortions in the declared policy, excesses in the family planning programme were highly politicised. The family planning programme became one of the major factors leading to the defeat of the Congress party in the 1977 elections. The Janata Party, which came into power in 1977, changed the

name of the Ministry from family planning to family welfare. A new statement of policy on Family Welfare Programme was issued in June 1977. The 1977 statement did not materially differ from the one issued in 1976, except for emphasis on 'no room for coercion or pressure of any sort' and on fertility and mortality [Ministry of Health and Family Welfare, 1977]. The basic needs revised programme was, however, silent on family planning, but showed increase in targets in several of its other sectors. The Draft Sixth Plan referred to the formation of a working group for suggestion of feasible and operational level of achievement for the Plan and for succeeding periods on which further population policy could be based.

A working group on population policy was formed in 1978. The working group submitted its interim report in March 1979 and final report in 1980. The objective was to reach the Net Reproduction Rate of unity (NRR) on an average in the country by 1996 and in all States by 2001.[2] To reach NRR of unity each State was to select 'the path which was socially, culturally and administratively suitable to reach the goal.' [Planning Commission, 1980] The working group gave equal importance to mortality and fertility declines. These recommendations were accepted by the Government. The revised Janata Sixth Plan stipulated that all resources of the country (at the Centre and States) needed to be harnessed towards NRR one by 1996 [Planning Commission, 1979].

While the policy was supportive to programme of fertility limitation, and the social, cultural and administrative aspects were underlined in official documents, the declared policy was seriously eroded due to the barrage of condemnation of population policy of the previous government. The programme personnel even in some leadership position appeared to be hesitant to take the declared policy seriously. The workers in the field especially in the Government organisations became over cautious and in some cases afraid to take any action. It appeared safe to let the programme drift. The poor performance alarmed the government officials and dedicated workers and a large section of people concerned with development issues. In the election held in the first week of January 1980, the Congress party won the elections by an overwhelming majority. The Draft Five Year Plan (1978-1983) was thus abandoned.

The Sixth Five Year Plan (1980-1985)

The Sixth Five Year Plan sought to make a massive attack on the problem of unemployment and poverty through specific programmes directed towards the target groups such as small and marginal farmers, rural artisans, landless labourers, women, scheduled castes and scheduled tribes. The family planning programme was viewed as a part of total national effort for providing a better life to the people. The new Government started rehabilitating the population policy and programme. The Government's total commitment to voluntary family planning was reiterated and emphasis was placed on 'family planning becoming a people's movement-of the people, by the people, for the people, and should be the centre of planned development'. The 20-point programme was revived and modified which this time included Family Planning. The Sixth Plan commencing 1980-1981 was interwoven with other development plans especially health and maternal and child care and nutrition as in previous Plans. Special mention was made of the household as a basic unit for poverty eradication; economic emancipation to enable children from poor families to go to schools, to receive adequate nutrition and develop into useful citizens; education and employment of women to liberate them from dependence and insecurity and to improve their status; measures to implement the legal provisions for increasing age at marriage; establishing linkages with basic needs, 20-point and other development programmes with family planning [Planning Commission, 1981].

The Planning Commission had constituted a Working Group on Health in September 1978 to discuss population issues and means and measures to achieve the objectives of health. Selected recommendations of the Working Group are given in the following Table [Ministry of Health and Family Welfare, 1981].

RECOMMENDED TARGETS OF 'HEALTH FOR ALL BY 2000 A.D.'

Index	1981	1985	1990	2000
Crude death rate	14.1	11.0	10.4	9.0
Infant mortality rate	129	..	80.90	Below 60
Perinatal mortality rate	60-109	..	..	30-35
Pre-school (0-5 years) death rate	35-40	..	20-25	10
Maternal mortality rate	5.8	..	...	below 2
Life expectancy at birth	52.6 males 51.6 females	..	58.0 males 57.7 females	64 years for both
Birth weight below 2500g	30%	..	..	10%
Crude birth rate	33.2 (1978)	29.5 (1983)	27.0 (1988)	21
Effective couple protection	22%	35%	44%	60%
Mean age at first marriage	17.2 female (1972)	.. 20 years ..		..
Net reproduction rate	1.67	..	..	1
Natural growth rate	1.9 (1978)	1.79 (1983)	1.66 (1988)	1.26
Family size	4.3 (1979)	..	..	2.3

The Seventh Five Year Plan (1985-1990)

The population policy laid down in the Sixth Five Year Plan (1980-1985) continued in the Seventh Five Year Plan. It emphasised that family welfare programme would continue to receive high priority to cause a sharp decline in birth rate and to achieve the goal of NRR 1, by 2000 A.D. It was again reiterated that the programme would be promoted as a people's movement and attention would be paid to reduce both fertility and mortality. A notable addition was made in revising the 20-Point programme in 1986.

Swings in Demographic Goals

The swings in demographic goals in population policy were due to various reasons. In the first few years no target and time span were stipulated for reduction in birth rates. The reasons for merely stating that reduction in birth rate should be achieved in 'reasonable time' or 'as expeditiously as possible', appear to be due to the fact that the planners appreciated that the changes in birth rates were known to be most complex and in the beginning it was not certain "how effective such efforts would become over the next five or ten years and the population projections were based on the assumption which were necessarily speculative in character" [Planning Commission, 1962(b)]. As a clearer picture emerged and tools of measurement improved, specific birth rates and later the duration in which they were to be achieved were mentioned. Experience showed that they were on the optimistic side. Recently, there has been a further precision, the immediate goal to be achieved being in terms of the Net Reproduction Rate (NRR).

In the early days, the high expectations were based on survey reports from Mysore, Bihar, Madras, Maharashtra, Delhi, Uttar Pradesh and West Bengal showing favourable attitudes towards family planning, small family size and willingness to learn family planning methods. In the Mysore study, 72 per cent of the persons did not want another child if they had three living children. A gap between the favourable attitude reported and practice was observed soon after. The prevalent view at that time was that this gap was expected to be filled if the methods available and services were provided within easy reach. The evidence started accumulating that many in rural area wanted large number of children for various reasons mainly economic, such as supplementing labour needed in the home and generating income and support in old age. High infant deaths seemed to reinforce their attitude to have a large family. In later years there was greater realisation of interaction of fertility and socio-economic factors. The term policies beyond family planning was used. It was replaced by 'population influencing policies' and 'population responsive policies'. The lack of reliable information between inter-census years posed difficulties. There were high expectations from the strategies adopted due to lack of appreciation of complex processes involved in behavioural changes, and full understanding of people's participation.

The projection of high level of achievement and low level of projected population estimates may be due to a conscious or unconscious (perhaps more the former than the latter) desire to present an over-optimistic picture of programme performance.

The experience during the Emergency period demonstrated that continued manipulation and compulsory participation of people can have transitory desired effect but is counter productive. Appropriate emphasis on social policies in population policy package did appear at a late stage. Although this aspect was well recognised since the 1950s, it is only recently that population influencing policies such as health care especially of mothers and children, drinking water, sanitation, environment, etc., and population responsive policies such as primary and secondary adult education, employment, status, education and employment of women, are specifically mentioned.

Over the years, the population policy has thus been in more or less the following sequence--population policy to reduce fertility through measures to control births; mainly through clinics and out reach personnel, followed by extension approach, which was replaced by target approach and incentives and disincentives, integration of birth control measures with maternal and child health and nutrition, further addition to the above by the population influencing and population responsive policies, and recently increasing emphasis on integration of all the above with poverty alleviation programmes (such as MNP, IRDP, NREP, RLEGP, IREPP, TRYSEM, DWCRA), land reforms, community development and Panchayat Raj and integration with social and economic development. The main focus of population policy continues to be on fertility and mortality.

DEVELOPMENT OF NATION - WIDE ORGANISATIONS AND STRATEGIES TO IMPLEMENT THE POLICY

Background of Maternal and Child Health Services in India

The British had introduced the modem health facilities initially for the defence services and for a select group of civilians. The general picture was that water supply, sanitation, preventive, and curative health services were available mainly in civil lines where the civil service personnel and the elite resided and cantonments where defence services personnel lived. These facilities were later extended with varying degrees to the rest of the cities and towns. The extent of these facilities diminished from the Capitals of Provinces (States) to Districts, to Tehsils and faded for the bulk of the population in villages. Generally, preventive services received attention of the Government at periodical intervals on the outbreak of epidemics. There were few exceptions such as in some Princely States like Travancore (Kerala), Mysore (Karnataka), Gwalior (Madhya Pradesh) and areas where the local population had access to health services (generally curative) through Missionaries, other philanthropic institutions and private practitioners; and in some cases Municipal and Government agencies. Within the health system, maternal and child health care received very little attention till 1931. The initial steps were taken by voluntary agencies and operated virtually in isolation. In 1885, the Countess of Dufferin Fund was established to provide relief to women by providing medical education and training for nurses and midwives. In 1902, the Victoria Memorial Scholarship Fund Committee was established to provide nucleus of services for children. One of the reasons for neglect appears to be that suffering, especially related to maternity, was accepted as normal. The ideas of prevention and promotion of positive health gradually emerged, but extended very slowly. The Church of England Zenana Mission attempted training of indigenous Dais (birth attendents) in 1866. The National Association for supplying Medical Aid to the women of India was established in 1885, for medical education of and medical relief to women including provision of nurses and midwives to hospitals and private work. The assistance provided was on a very limited scale. The Government of India gave some financial assistance to the Countess of Dufferin Fund in 1918 when the Lady Reading Health School was established. A year after in 1919 the Lady Chelmsford All India League for Maternal and Child Welfare was established. In the 1930s a number of activities began which stimulated action for the initiation of maternal and child care. Madras Presidency (Tamil Nadu) was the first state in India in 1931 to establish a special

section for maternal and child welfare in its Public Health Department. Field studies on mortality and morbidity among women and children, on the suggestion of the Surgeon General, Madras Presidency, were undertaken in 1931-1932. This study was followed by other such studies. Formation of an advisory committee on maternal morbidity and mortality in association with the Indian Research Fund Association (now Indian Council of Medical Research) was suggested by researchers. The Indian Research Fund Association established the advisory committee which met for the first time in 1938.

Several organisations in the voluntary sector were formed, notably the Bombay Presidency Infant Welfare Society. The Lady Chelmsford All India League for maternal and child welfare attempted to provide services for children and succeeded in providing nucleus of such services through committees in States. In the early 1930s, the Indian Red Cross Society was the major organisation for providing and coordinating maternal and child health services in the country. The Indian Red Cross Society in association with the Victoria Memorial Scholarship Fund and Lady Chelmsford All India League established at its headquarters a Maternity and Child Welfare Bureau. In 1933, the All India Institute of Hygiene and Public Health in Calcutta, in association with the Countess of Dufferin Fund, commenced Diploma Courses in Maternity and Child Welfare. The recommendations of the Maternal Morbidity and Mortality Advisory Committee in their first meeting in 1938 stimulated several States to appoint senior women medical officers with special qualifications and experience in maternal and child health. The appreciation of the need to provide adequate maternal and child care was further reinforced by recommendations of the Advisory Committee on Nutrition which was given the status of National Nutrition Committee. The need for maternal and child care was gradually recognised, but action lagged behind. Only four States in India had senior women officers specially appointed for maternity and child care in 1947. By the time the First Five Year Plan was issued their number had increased to nine. The Health Ministry faced the anomalous situation of one doctor for 6,300 people (doctors mostly working in urban areas) but one nurse for 43,000.

The Bhore Committee

Before India became independent, the medical administration had been making repeated attempts to make a detailed assessment of the health problem. But their suggestions did not find favour with the Government. The medical research workers in India in each of their annual conferences from 1923 to 1926 had exhorted the Government of India to appoint a Commission 'for the purpose of making a thorough enquiry into the wastage of life and economic depression'. The Government response was that the subject could be dealt with by the Royal Commission on Agriculture.

Later, in October 1943, the Government of India appointed the Health Survey and Development Committee with Sir Joseph Bhore as Chairman "to make (a) broad survey of the present position in regard to health condition and health organisation in British India and (b) recommendations for the future". Sir Joseph was informed that the term of reference had been framed in general terms to leave the fullest possible freedom to the Committee in its treatment of the subject matter of the enquiry.

The Committee laid emphasis on preventive work and medical relief "to the vast rural population of India" and the role of the doctor as a "social physician protecting the people and guiding them to a healthier and happier life" [Ministry of Health, 1946]. Government of India accepted the recommendations in principle, but implemented them on a much reduced scale. The First Five Year Plan provided for the development of rural primary health units--one unit for 10-12000 people with maternity and child health staff of two midwives and a centre with a lady doctor and two health visitors (at Taluk or Thana level) to cover a number of such health units. Concurrently other developments also took place in Community Development and Social Welfare programmes.

The First Five Year Plan (1951-1956)

The family planning objectives, laid down in the First Five Year Plan, were to "obtain an accurate picture of the factors contributing to the rapid population increase in India; discover suitable techniques of family planning and advise methods by which knowledge of these techniques can be widely disseminated; and make advice on family planning, an integral part of the services of Government hospitals and public health agencies". The Plan mentioned immediate formation of a Population Policy Committee in the Planning Commission and the Family Planning Research and Programme Committee (FPRPC) in the Directorate General of Health Service; and the appointment of a population commission, at a later date, to assess the population problem, consider different views held on the subject on population control, appraise the results of experimental studies and recommend measures in the field of family planning to be adopted by the Government and the people.

The plan laid emphasis on giving family planning advice, especially for health reasons and at the same time an education programme for reduction of birth rate and use of rhythm method. Activities in seven areas were mentioned:

"The provision, in Government hospitals and health centres, of advice on methods of family planning for married persons who require such advice: Medical Officers working at hospitals and health centres like maternity and child welfare clinics should give advice to women regarding family planning when such advice is necessary for health reasons. If a doctor feels that a woman patient cannot undergo the strain of pregnancy and parturition, without danger to her health, it is obviously his duty to give such advice as is necessary to enable the person to prevent conception. In these circumstances the doctor would be justified in suggesting any chemical, mechanical or biological methods of contraception or sterilization as may be indicated for the individual case.

Field experiments on different methods of family planning for the purpose of determining their suitability: acceptability and effectiveness in different sections of population. If it can be demonstrated that our people, particularly those living in rural areas, can be educated to accept the rhythm method and use it as a practical method of limiting family growth, Government support should be extended to propagation of the method. From the point of view of avoiding enormous expenditure as well as that of securing the ethical values that community life would gain by the self-imposed restraint which the rhythm method involves, it would be desirable to try out this method fully and thus ascertain its practicability. Whether the rhythm method is capable of wide application in the community with adequate results or not, actual experimentation alone can tell. Research and experiments need not however be confined to a single method. There are numerous voluntary agencies which are currently propagating the spread of information on family planning and the use of chemical and mechanical contraceptives. Their activities would need support.

Development of suitable procedures to educate the people on family planning methods: inexpensive means of rapidly educating the public in matters relating to family size will have to be evolved if large scale reduction in the national birth-rate is to be obtained. Scientific techniques are available to assess the effect of mass educational campaigns. These techniques should be used to develop educational programme suitable for different economic and social sections of the population.

Collection from representative section of the population of information on reproductive pattern, and on attitudes and motivations effecting the size of the family: The reproductive pattern in any population is largely determined by social and economic factors which may differ from one area to another. A thorough investigation of the differences in attitudes and motivations towards family size and the factors responsible for producing such differences is important. Research along these lines is necessary if we are to understand the particular sentiments and

aspirations to which the programmes of family limitation in various sections of the population should appeal.

Study of the inter-relationships between economic, social and population changes: The information obtained by such studies will form the necessary background for the formulation of a national population policy and development of appropriate measures of population planning based on factual information.

Collecting and studying information about different methods of family planning (based on scientifically tested experience in India and abroad) and making such information available to professional workers: and

Research into the physiological and medical aspects of human fertility and its control".

The preamble to the section on family planning in the plan underlined support to family limitation on health, social and economic grounds. It said: "The application of medical knowledge and social care has lowered the death rate, while birth rate remains fairly constant. This has led to the rapid increase in the growth of population. While lowering of the birth rate may occur as a result of improvements in the standard of living, such improvements are not likely to materialise if there is concurrent increase of population. It is, therefore, apparent that population control can only be achieved by the reduction of the birth-rate to the extent necessary to stabilize the population at a level consistent with the requirement of national economy. This can be secured only by the realisation of the need for family limitation on a wide scale by the people. The main appeal for family planning is based on considerations of the health and welfare of the family. Family limitation and spacing of the children is necessary" [Planning Commission, 1953].

Family Planning Research and Programme Committee (F P R P C)

The first step to develop programme strategies was the appointment of the FPRPC on May 6, 1953. The family planning programme in the First Five Year Plan is often considered as a period largely devoted to 'the coloured Beads' (the research on rhythm method). The fact is that during the first five year plan period, the FPRPC laid down the basic concepts and developed programme frame-work, which provided valuable guidelines for future work.

The first meeting of the FPRPC was held from July 13 to July 18, 1953. Persons engaged in promoting family planning in different parts of the country were invited to provide the members of the committee an opportunity for discussion with them on their experience in regard to different aspects of the problem. The report of the first meeting of the committee discussed a wide range of subjects such as scope and purpose of family planning: suitable location for delivery of services: studies on qualitative aspect of population, etc. The committee appointed two expert sub-committees: one on socio-economic, cultural and demographic aspect and the other on qualitative aspect. Most of the recommendations made by FPRPC are relevant even today.

The Committee stressed that "the purpose of family planning is to promote, as far as possible, the growth of the family as a unit of society in a manner designed to facilitate the fulfilment of those conditions which are necessary for the welfare of this unit from the social, economic and cultural point of view. Emphasis on maintaining the health of the mother and furthering measures for the welfare of children is an essential part of the family planning programme. Advice and guidance to those who propose to unite their lives in marriage; assistance towards enabling them to regulate and space appropriately the bringing forth of their children in relation to economic needs and social obligations; sex education both for the parents and children in order to provide the background necessary for the successful conduct of their lives in harmonious adjustment to the many difficulties that sexual urge, with all its demands on the individual may bring into being, promotion of measures to eliminate as far as may be possible, physical and mental defects arising out of hereditary or environmental factors -in fact a planned and scientific approach towards the solution of the problems of the family life."

The Committee was unanimous in its opinion that family planning programme should be developed as an integral part of the health system, as the scope envisaged "practically all the measures desirable for promoting the health and welfare of the family". The Committee further stated that sex education, marriage counselling, marriage hygiene, the spacing of children and matters intended for the welfare of the family such as family budgeting having a bearing on the maintenance of the health and well being of its members are the primary duties to be undertaken by the family planning centres, but they must be supplemented by services such as child guidance, advice in regard to nutrition, the teaching of mother craft and health education so as to train the people towards the acceptance and practice of the hygienic mode of life." As far as possible new family planning centres should be developed in association with institutions for the health protection of mother and children in hospitals, maternity homes and child welfare centres.

A rapid survey undertaken by two members of the Committee had shown that there were 165 family planning centres in the country at that time maintained by the Government, local bodies and voluntary organisations. There were also centres run by individuals not necessarily qualified to do so and generally for profit. None of them were being run on sound lines and they were poor in all essential requirements, space, equipment, auxiliary staff, etc. Follow up was almost non-existent. The Committee therefore recommended provision for accommodation, equipment and minimum staff consisting of one medical officer, under certain conditions a public health nurse and a social worker. The committee suggested clinical trials of contraceptives in selected clinics for acceptability, harmlessness and effectiveness; and legislative and administrative action directed towards the elimination of those contraceptives which were declared harmful.

Other studies recommended by the Committee included: field studies on social attitudes and motivations affecting family planning: long range studies based on the basic triad of epidemiological analysis (host factor including mother's age, marital status, cyclic susceptibility) and relative biological conditions: environmental factor including social, economic, biological and physical aspects: agent factor laying special emphasis on the spermatozoa and all the factors affecting male fertility and research on biology of human reproduction [Ministry of Health 1956(a)].

On February 27, 1954 the Ministry of Health informed all State Governments and some voluntary organisations that "the Government of India has generally accepted the recommendations" of the FPRPC and offered financial assistance for delivery of services on a sliding scale (First six months 100 per cent, Next twelve months 33 per cent). The financial assistance was given to fifteen States, eight local bodies and thirty-five voluntary organisations and one hundred and forty-seven centres were started including twenty-one in rural areas. Bombay State initially did not join the main stream of the National Family Planning Programme. However, a grant for one urban clinic in Nagpur was issued by the Government of India to Bombay State. Presumably, that clinic was restricted to give advice on safe periods only. A Grants Committee with Director General of Health Services as Chairman was appointed in May 1954. This did expedite provision of financial assistance in some cases. But generally the slow pace of issuing grants continued.

To prevent advertisement of pills and potions which could be ineffective or harmful or both, statutory action was proposed. A provision was made in Drugs and Magic Remedies (Objectionable Advertisement) Act, 1954 for controlling objectionable advertisements.

Financial assistance was given to the Indian Cancer Research Centre (ICRC), Bombay, for establishing a Contraceptive Testing Unit. The ICRC was established in December 1952 by the Ministry of Health, Government of India in collaboration with Sir Dorabji Tata Trust in Bombay. It already had departments of pathology, experimental biology, bio-physics, biochemistry, human variation and statistics. The contraceptive unit developed chemistry, biochemistry, biology and medical sections and later (September 1956) its own clinic in Naigaum area for field trials of contraceptives. There was at that time an approved list of contraceptives issued by

a medical committee of the Family Planning Association, London. It was, however, felt that wholesale adoption of one or more types of contraceptives used abroad widely might not be desirable, as the conditions in India both climatic and otherwise were different. The contraceptives were placed in three categories, viz., (i) those found to have satisfactory physical properties to reach the required level of spermicidal efficiency in laboratory tests and to satisfy the criteria for harmlessness in the short term harmlessness test (24 hour cap test:) (ii) Foam tablets which satisfy keeping qualities for unsealed tubes at 80 per cent humidity for 3 months: contraceptives which had reached the required level of spermicidal tests and which were found reliable and harmless by prolonged use: and (iii) Contraceptives approved by the Family Planning Association, London (approved provisionally for use). A standing committee was formed in 1951 for determining the procedure to be adopted for testing contraceptives and for recommending approved contraceptives to the Government.

Besides making available approved contraceptives, serious consideration was given to their manufacture in the country and to promote improvements in contraceptive technology, although on a limited scale.

The FPRPC had also recommended the setting up of family planning training centres for doctors, social workers, voluntary workers and local leaders. The first centre to be started was at Bombay in March 1957, called the Family Planning Training and Research Centre. The courses of instruction developed at this centre besides birth control included subjects like sex education, marriage guidance and counselling, dynamics of human behaviour, etc. The services provided included not only a family planning clinic and a MCH centre, but a well baby clinic and a day-care centre for children.

Two doctors, associated with rhythm study were sent for higher training in public health to the University of North Carolina in U.S.A. On their return to India, a Family Planning clinic was set up in New Delhi which was developed as a model urban clinic and a Family Planning Demonstration, Training and Experimental Centre was developed in Ramanagaram, Karnataka, which became a major centre for training persons required to work in rural areas. The educational programme was on a low gear, perhaps because of the unresolved problem of the precise message to be conveyed and the apprehension that education programme without availability of services would adversely affect credibility of the programme. Ministry of Information and Broadcasting produced two films on family planning and nine films were obtained from other sources. Seventy thousand posters and twenty thousand folders were printed and distributed mainly to satisfy frequent demand for such material.

Proposals for Demographic Studies and Council for Population Studies

The Sub-Committee on Demographic Studies had started functioning from March 1954. Recognising the need for setting up of an organisation for promoting concerted, co-ordinated and planned studies in population problem, it was suggested that an independent and autonomous Council for Population Studies should be set up with financial support from the Government, but Government control was limited to matters of audit. The composition of the Council suggested was: selected non-official institutions engaged or proposing to engage in population research, representatives of Ministries and other offices of the Central Government interested in population research and selected individuals who would be experts in one or other aspect of population problem.

The proposed functions of the Council were:

(i)to promote research on selected aspects of population problem, develop institutions in different parts of the country and support them with adequate financial assistance, technique and guidance where needed,

(ii)to hold seminars, conferences and discussion groups on various aspects of the population problem,

(iii)to promote and finance the setting up of research and training sections in demographic studies in the selected universities and research institutions in the country, and

(iv)to promote the training of research workers in demographic studies by award of scholarships, fellowships, etc., to selected individuals for study either in India or abroad and also if necessary special training programmes. [Ministry of Health, 1955]

The sub-committee also agreed that ad-hoc surveys should be taken up by Universities and research institutions to obtain reliable data on fertility and mortality patterns in selected rural and urban areas and their relation to socio-economic characteristics of the families concerned. Institutions, who could undertake such studies were also identified [Ministry of Health, 1956(b)]. It was agreed that in the first instance four demographic study centres, should be established one each at Indian Statistical Institute, Calcutta, All India Institute of Hygiene & Public Health, Calcutta, School of Economics, Delhi and Gokhale Institute of Politics and Economics, Pune [Ministry of Health, 1956(c)]. The field studies actually carried out or commenced during this period pertained to (i) Rhythm method at Lodi Colony (New Delhi) and Ramanagaram (Karnataka) from May 1952 to March 1955; (ii) Analysis and tabulation of fertility data collected during National Sample Survey, Indian Statistical Institute, Calcutta; (iii) Demographic Research by Gokhale Institute of Politics and Economics started in June 1954 to obtain demographic data necessary to compute fertility rates and if possible mortality rates, to collect information regarding socio-economic determinants of these rates, and to assess the attitudes towards family planning in general and in favourable cases, the acceptability of different contraceptive methods and means; (iv) Sample survey in Patna to assess the fertility and mortality rates and (v) Multi-purpose Family Planning Research Project, JK Institute of Sociology and Human Relations, Lucknow. These studies supplemented useful information from studies already available such as those carried out in Bengal during 1947-1949 (Ballygunge upper middle class urban, Banitola lower middle class urban and Singur rural), Census 1951 and Mysore Population Study 1952.

Proposal for Family Planning Organisation with Autonomous Status

These developments took place under several organisational constraints. There were long delays in implementing the FPRPC proposals, despite the formation of the Grants Committee. The proposals approved by the Grants Committee had to go for approval to the Ministries of Health and Finance despite the fact that their representatives were members of the Committee. After final sanction was received from the Government, further delays occurred before the money actually became available as it took some time for the transfer of funds by Accountant General of the areas in which the sponsors of the scheme were situated. The FPRPC therefore, in their fourth meeting in April 1955 made the following suggestions for early approval of the Government of India:

(i)"The family planning research and programme committee should be made an autonomous body so that family planning activities and studies of various aspects of the population problem may be developed on a broad basis and with as little delay as possible. By conferring on it the required measure of autonomy the committee will be enabled to sanction expenditure, to create posts and to select suitable persons for these posts. The Committee should be responsible for administration of funds made available for family planning in the present and subsequent Five Year Plans. The Committee will submit its annual budget to the Ministry of Health for sanctioning the amount as grant.

(ii)In order to assist the Committee in regard to financial matters, a representative of the Department of Finance with the status of a Joint Secretary should be added to its membership.

(iii)The Committee should appoint a Finance Sub-Committee for scrutinising the financial aspects of all the proposals taken up for consideration. The representative of the Ministry of Finance should be a member of this Sub-Committee.

(iv) With such advice on financial matters, as the officer gives, the approval of the Committee should mark the final stage of sanction for all proposals. As a safeguard found to protect the interest of the Government of India, it is proposed that in any case in which the representative of Ministry of Finance does not accept the view of the majority of the Committee, the matter should be referred to the Government for a decision.

(v)The Committee should appoint a Recruitment Sub-Committee from amongst its members for the selection of suitable candidates to the posts it creates. The recommendation of the Recruitment Sub-Committee must be approved by the Committee before they are put into effect.

(vi)The committee may co-opt as and when necessary suitable persons for rendering assistance towards the proper selection of candidates for specific posts."

The proposal to give autonomous status to FPRPC was not approved by the Government of India.

Leona Baumgartner and Notestein Mission

The constraints, organisational and others, in effective implementation of family planning programme and the slow pace of progress caused anxiety. National voluntary organisations were doing their best, but their resources were limited and flow of funds to them was tardy. In 1954, in collaboration with the Ford Foundation and the Rockfeller Foundation, the Population Council, New York, agreed to sponsor a Mission comprising Leona Baumgartner, the Commissioner Health, New York city and Frank W. Notestein the Head of the Demographic Centre at Princeton to examine the possibility of developing an autonomous non-government Family Planning organisation.

The Mission suggested that there were several forms which an organisation having necessary authority and staff could take. One that would seem likely to be effective and appeared to have support in the Ministry of Health and among other leaders was the semi-autonomous organisation somewhat analogous to the Indian Council of Medical Research. This could, for example, be a council for Family Planning or a Family Planning Board. There were several possibilities for the organisation of such a Board. One possibility that appeared likely to be successful would be the creation of a rather small Board, limited to fewer than ten members including senior officers from the Ministries of Health and Finance and from Community Development Project and otherwise composed of eminent persons of public standing whose interest in the field were not mainly professional. Such a Board should be responsible for the formulation of broad policy and for its implementation. The Board should be served by a moderate sized, competent and full time staff and should have available to it and to its staff the assistance of one or more scientific advisory committee composed of persons such as those that had already served well on the Family Planning Committee on Research and Programmes.

On population research the Mission stated that "Eventually India needs several centres that are able to undertake both advanced training and advanced research, but the immediate need is for one such centre. It should not only have appropriate academic affiliation but also be given considerable autonomy under the direction of a governing body, have the possibility of close liaison with medical biological work, be directed by a fully experienced demographer and have a staff on which skills of public health, sociology, social psychology, economic and statistical methods are represented and take part in the design of a limited number of field trials in family planning and be given assistance in the collection of information necessary for their evaluation".

A detailed proposal for a centre for Demographic Training and Research by Notestein was also included in the Mission's Report.

On methods of birth control, the Mission observed that "at present, the most practical procedure would be to concentrate on stimulating the use of rhythm and coitus interruption (separately or in combination with foam tablet.) Eventually they might be supplemented by other simple methods as experience dictates".

Other recommendations of the Mission included strengthening professional staff at the Central and State levels by the addition of well qualified personnel particularly those oriented to take care of children and preventive measures; setting specific goals and devising programmes for training including inservice training for the existing and projected staff; stimulating the use of opportunities for training and service in preventive paediatrics at many creches and nurseries operating for the children of industrial workers and other establishments caring for children;

promoting establishment of paediatrics departments and child health institutions in medical teaching institution; appointing well qualified health educators to senior posts; searching out and recruiting for Government programmes younger physicians with some training in paediatrics and an interest in preventive paediatrics and social medicine and working towards a closer integration of maternal and child welfare and general health services [Baumgartner & Notestein, 1955].

The major outcome of the Mission's recommendations were: formation of the Central Family Planning Board, establishment of one demographic training and research centre, and introduction of foam tablets for use on a wide scale. Several proposals of the FPRPC were dropped. Notable amongst them was establishment of an autonomous demographic training and research council. The Mission's report to some extent stimulated support for building a Family Planning and maternal and child health organisation, and paediatrics training and services.

Community Development

On October 2, 1952, the Community Development Programme was launched in 55 project areas "to generate a process of transformation of social and economic life of villages". Primary health units and centres formed an important part of Community Development activities. Each of the 55 projects covered three blocks, each block had 100 villages with a population of about 66,000. The Primary Health Centre formed the main hub of health activities. Its headquarters with a Medical Officer, a Sanitary Inspector, a Public Health Nurse, a Lady Health Visitor, a Public Health Oriented Nurse, a compounder, and three others, was located at the headquarters of the CD Block. It had three sub-centres with a Midwife/ANM in each. The Bhore Committee had recommended that serious consideration should be given to provide at least one Medical Officer for every 20,000-30,000 people, a Public Health Nurse or health visitor for every 500 people, a Sanitary Inspector for every 10,000 and a midwife for 100 births. It will be seen that the provision made was far below the absolute minimum recommended by the Bhore Commitee. Lack of appreciation of the Bhore Committee recommendations, competing demands of various sectors, financial constraints, shortage of trained personnel and unwillingness of doctors to work in rural areas seem to have led to the staffing pattern finally adopted.

Social Welfare

The objectives of social welfare were defined as: "the attainment of social health which implies the realisation of such objectives as adequate living standards, the assurance of social justice, opportunities for cultural development through individual and group self-expression and readjustment of human relations leading to social harmony". Social education formed an important part of social welfare programmes including general information on subjects like family relationships, family planning, mental hygiene, domestic economy, mother crafts and home crafts. The Central and State social welfare Boards were formed to mobilise activities of several thousand voluntary organisations for welfare of women and children. Among other activities, welfare extension projects were started, each serving some 25 villages and providing maternity and child health services, craft classes, social education for women and care of children through balwadis." Mahila Mandals (Women's clubs) were formed. The above mentioned and other projects were later handed over to Mahila Mandals with financial assistance from Central Social Welfare Board. New categories of social workers (Gram Sewaks) and child welfare workers (Bal Sewaks) were emerging on the rural scene. The community development and social welfare programmes had an important bearing on family planning programmes.

The Second Five Year Plan (1956-1961)

The Second Five Year Plan included further extension of Family Planning advice and services, establishment and maintenance of a number of centres for training of personnel, development of a broad based programme of education in family planning which included in its scope sex education, marriage counselling and child guidance;

research into biological and medical aspects of reproduction, demographic research, studies on communication and motivation, arrangements for inspection, and guidance of the work done by different agencies, governmental and non-governmental, to whom financial assistance would be given, development of evaluation system and reporting of progress. The Plan stipulated establishment of a Central Organisation and formation of Central Board (more or less autonomous in working) [Planning Commission, 1956].

In July 1956, the Government of India decided to establish the Demographic Training and Research Centre in Bombay. The decision to form a Central Family Planning Board (CFPB) was also taken. On September 1, 1956, the CFPB was formed, advisory in function, and not with semi-autonomous status.

At the commencement of the Plan, the Family Planning programme was being looked after by the Advisor, Health Programmes, Planning Commission. The Ministry of Health decided to strengthen the Central Family Planning Organisation and appoint an officer designated Director, Family Planning, who could spend his whole time to the development of the programme in the country.

The Central Family Planning Board (CFPB) was sanctioned, but had not met. There were no such boards or committees functioning in States other than Bihar (committee was functioning since 1954) and Madras (board was formed on July 18, 1956). There was virtual absence of family planning organisation in most states, except in Madras where the Family Planning Board was very active. The building of minimum supporting staff at the Centre and States and establishing support from different sections within the Health Ministry, Directorate General of Health Services and State Health Department were matters of high priority. With formation of the CFPB, the FPRPC Committee and its expert sub-committees were abolished.

The urgent proposals for consideration of the CFPB were prepared hurriedly, the first meeting of CFPB was held on October 27, 1956. Two recommendations among others were made at the first meeting-one to form an executive committee (a standing committee) in the Ministry of Health to scrutinise various proposals and another, appointment of Family Planning Officers at State Headquarters (in the office of State Directors of Health Services). A standing committee was formed on January 2, 1957. Secretary, Ministry of Health (as Chairman), Chairman, Central Social Welfare Board, and President, Family Planning Association of India, were among its members.

Health and Family Planning is a 'State subject'. States were not represented on CFPB at that time. Article 263 of the Constitution of India provided for establishment of a council by the President of India for making recommendations on subjects of common interest. Accordingly, the Central and State Health Ministers at their conference held in 1950 recommended formation of a Central Health Council. The Presidential order establishing the Central Health Council was issued on August 9, 1952. A few months after the first meeting of the CFPB, the subject of family planning was discussed for the first time by the Central Health Council (at its fifth meeting) in December 1956. This accelerated the pace of formation of family planning boards and appointment of Family Planning Officers in States. The State Governments were requested to appoint State Family Planning Officers (FPOs). The Government of India offered to provide the entire expenditure for these posts. A focal point was thus established in each State to develop the family planning programme. But the development of the programme was seriously limited by weaknesses in the health infrastructure at the Centre and States, and virtual absence in most places of maternity and child health services--the base on which family planning programme was to be developed.

Mudaliar Committee

There was some hope that further resources might be provided to implement the recommendations of the Bhore Committee as they were still accepted as a guideline. This hope was dampened by the recommendation of the Health Survey and Planning Committee (Chairman, A.L. Mudaliar). The Mudaliar Committee was formed in 1959, with the following terms of reference: (i)

Assessment in the field of medical relief and Public Health since the submission of the Health Survey and Development Committee Report (Bhore Committee); (ii) Review of the health projects under the First and Second Five Year Plans; and (iii) Formulation of recommendations for the future plan of health development in the country. The Mudaliar Committee instead of strongly recommending expansion of primary health care suggested consolidation of primary health care (not expansion), and large inputs in hospitals and medical education system [Ministry of Health, 1961(a)].

The selective approach of Mudaliar Committee and also inadequate financial allocation for health services as a whole retarded the expansion of primary health care. Consequently the expansion of delivery of family planning services was seriously affected, as it was primarily based on Primary Health Centres in Community Development Blocks in rural areas and maternal and child health centres in urban areas.

Family Planning Services

In the existing situation, two alternatives were available for developing the delivery of family planning services, viz., to provide a separate team of workers for family planning or to add additional personnel as integral part of MCH Centres/Primary Health Centres under MCH Community Development programmes for assuming additional family planning responsibilities. The existing maternal and child health centres/PHC centres/other centres in health institution could then deliver family planning services as their normal activity. The MCH Advisor strongly opposed provision of a separate family planning team which would create two administrative hierarchies and make MCH - FP integration difficult. The arguments in favour of separate team of workers were that the maternal and child health services were weak and non-existent in many places; Primary Health Centre sanctioned staff was much below the actual needs, there were budgetary and other constraints to increase the staff of MCH/PHC Centre and the overwhelming demand for maternal and child health and curative services could tend to the neglect of actual family planning services. The major deciding factors influencing the decision were that increased budgetary provision for MCH appeared difficult and there were pressures to have a separate family planning organisation. It was decided to provide separate family planning teams. It was, however, insisted that the separate family planning team should be considered as a supplement to the existing staff to work as an integrated MCH/PHC and family planning team. Administratively family planning staff in the Primary Health Centre was placed under the medical officer-in-charge of PHC.

The number of family planning workers, to supplement the health staff, gradually increased. The work load for family planning in rural areas was not known. There were (and still are) also difficulties of finding doctors willing to work in rural areas. Initially, therefore, one worker (social worker or Health Visitor or Field family welfare worker) was provided to strengthen the staff of Primary Health Centres. Two pilot centres in each State were authorised with a woman Medical Officer. Provision for accommodation for additional staff along with four other staff of PHC was also made. In the urban areas staffing pattern for family planning centre was: One lady doctor and one part time male doctor, one Health Visitor and field worker, one attendant, one male and one female social worker. All contraceptives in both rural and urban centres were authorised for free issue to those with income below Rs.100 p.m., at half the rate to those with income between Rs.100 - 200 p.m. and at full rates to those with income above Rs.200 p.m. Condoms and foam tablets were issued free irrespective of income.

By November 1958, 675 family planning centres/clinics were operating: 586 (452 rural and 34 urban) by State Governments, 20 (all urban) by local bodies and 69 (48 urban and 21 rural) by voluntary organisations. The slow pace of development of primary health care in the rural area, unwillingness of doctors to work in rural areas and difficulties in finding qualified paramedical personnel continued to cause concern. The experience showed that the MCH Adviser was right. The separate family planning team, created two administrative hierarchies, and influenced the perception of roles of MCH and

FP workers, created situations in which one or the other service was neglected. Difficulties to develop them as a fully integrated team were faced. The attempts to keep family planning as a part of MCH gradually diminished. Information on family planning methods which did not require medical consultation was disseminated and advice on family planning at every hospital, dispensary, primary health centre, maternity and child health centre and other health insitution was provided, to varying extent in different parts of the country. The 1959 Report of the Directorate General Health Services indicates that the aim was to impart knowledge on the subject to the maximum number of persons in the shortest time and to develop family planning as family welfare service and to motivate a large number of voluntary social workers in organised groups at all levels, State, District, Tehsil and Village.

A major change in the family planning programme took place in 1957, when sterilisation operation was officially approved as a method of birth control in the country. Sterilisation soon assumed a central place in the family planning programme in India and subsequently in other countries.

Further developments took place in training strategy. A training programme was launched and developed on a large scale including (i) a centre for training potential instructors: (ii) a rural training, demonstration and experimental centre: (iii) training teams: (iv) development of selected clinics into regional training centres: (v) regional training centres for family welfare workers: (vi) ad-hoc training centres for family welfare workers: (vii) ad-hoc training courses of short duration wherever trained personnel and clinical material was available: and (viii) incorporation of family planning in normal training programmes of teaching institutions for doctors and medical auxilliaries: (ix) fellowship programme for studies in India and abroad in the field of health, medical, biological, demographic research and communication. The fellowships for training abroad were offered by the Ford Foundation and Population Council.

The education programme was gradually further expanded. It included: (i) scheme to collect detailed information of the factors which were responsible for attitudes, belief and behaviour patterns and on the profile of couples in three groups with favourable, unfavourable and ambivalent attitudes towards family planning: (ii) identification of natural groups and natural group leaders and use of these leaders as a channel of communication: (iii) preparation and facility of basic materials and methods for (a) mass communication (b) community education (c) imparting specific technical knowledge and skills and (iv) formation of mobile teams including a health educator, and a physician with a view to training voluntary family planning educators (Pracharaks). The Central Health Education Bureau was developed about this time. This considerably helped in shifting focus from publicity to education.

At this stage, reinforcement to family planning information, education and communication programme was provided by the Ford Foundation given in the form of 'research-cum-action grant' in support of family planning communication. The objectives of the communication-cum-action research programme were: to provide better understanding of basic factors which influenced the acceptance of family planning, to collect and make available relevant knowledge and experience for improving educational aspects of the programme and to apply such knowledge and skills on developing, testing and demonstrating improved pattern of programme operation. Pilot projects of various types materialised at several institutions. These projects became a source of objective observation and fresh ideas about different problems of programme implementation; and became field laboratories for working out and evaluating improved educational and organisational methods. The activities of action- research communication projects were co-ordinated and guided by Action-Research Communication Committee with Professor P.C. Mahalanobis as Chairman.

Research activities in demographic, medical and biological fields were extended. The demographic research centres were developed in Bombay (DTRC), Calcutta (ISI), Delhi (Delhi School of Economics later shifted to Institute of Economic Growth) and Trivandrum (Department of Statistics). Later a demographic research centre was established in Dharwar. Financial support was given for research to other institutions notably Gokhale Institute of Politics and Economics, Pune. The demographic research was coordinated and developed by the Demographic Advisory Committee with Professor V.K.R.V. Rao as Chairman. Both applied and basic research in medical and biological aspect of reproduction was promoted. The former, in the beginning, mainly at the contraceptive testing unit at the Indian Cancer Research Centre, Bombay, later also at All India Institute of Hygiene and Public Health, Calcutta and Central Family Planning Institute, New Delhi, Central Drug Research Institute, Lucknow, Zoological Department of Delhi University, Banaras Hindu University, several medical colleges and other institutions. The bio-medical research was mainly carried under auspices of Indian Council of Medical Research guided by an Advisory Committee with Dr. V.R. Khanolker as Chairman. Director, Family Planning was member secretary of all the Advisory committees.

In 1960, a Population Council was formed with committees on Census and Vital Statistics; demographic studies; and social & economic studies. Home Ministrer Govind Ballabh Pant was Chairman of the Council and Health Minister and Professor Mahalanobis were Vice-Chairmen. The Council was short lived.

The strategy for research in human reproduction had five major components: (i) to look for support of experienced researchers and institutions; (ii) to develop centres for reproductive biology research around them; (iii) to train promising young persons; (iv) to provide support as needed by individual scientists; and (v) to conduct urgent comparable collaborative studies. Population Council, New York provided valuable support in research in human reproduction. At a later stage World Health Organisation provided notable support.

While the programmes expanded, the organisation remained thin. Despite all the administrative support, the rules and regulations especially concerning financial matters were often frustrating.

By the end of 1958, Family Planning Boards had been formed in most of the States. The family planning officers had also been appointed in many States. The family planning work was being looked after by the Maternity and Child Health Officer in those States where family planning officers had not been appointed [Ministry of Health, 1961(c)].

The next step was to develop family planning organisation at District level. In February 1960, the State Governments were requested to form District Family Planning Committees (as a subcommittee of the District Development Council wherever they had been formed) with District Magistrate/Collector as Chairman, Civil Surgeon, District Medical Officer of Health, representatives of Social Welfare Board, All India Women's Conference, Family Planning Association of India, the Community Development organisation, prominent welfare organisations and social workers as members and the officer-in-charge of State Family Planning Centres at the District Hospital as member-secretary. The Government of India offered financial assistance to cover secretarial and contingent expenditure.

A nation-wide infrastructure for management and delivery of services, training, education, demographic communication, bio-medical research and evaluation was further developed. A beginning was made to develop strategies for peoples' participation. Distinction between publicity and education was emphasised. Public minded persons in States and Districts were appointed as honorary family planning education leaders. By the end of the Second Plan village leaders' orientation camps were started. The number of centres delivering services increased from one hundred and forty seven to four thousand one hundred and sixty five. Despite the increase in number of Family Planning Centres, services could not reach a large number of families especially in rural areas because of inadequate health infrastructure. The staff at the

existing centres were urged to spend most of their time in the field and to help organise local groups and mothers' clubs with assistance of community leaders. Great stress was laid on enrolment of honorary village local leaders--the Pariwar Kalyan Sahayaks and Sahayakas. One of the criticisms of the strategy adopted during this period, with some justification, had been that the message of 2-3 Child family was disseminated throughout the country, irrespective of readiness of the people in many places to adopt such a norm. Another weakness often observed was that services did not keep pace with educational activities.

The major functions of the family planning organisation of the Ministry of Health evolved during this period may be summarised as stated below:

(i)Technical leadership and guidance including planning, research (communication and motivation, demographic, medical and biological fields) training, consultation services, and pilot projects.

(ii)Mobilisation of public opinion in favour of family planning and family planning practices.

(iii)Supply of material and equipment needed for operation of the programme, including educational material, contraceptives (production, storage and distribution), etc.

(iv)Scheme for provision of skilled personnel like fellowship programme for training in different fields both in India and abroad, developing a pool of scientific personnel.

(v)Development of infrastructure for the programme.

(vi)Financial assistance to State Governments, Local Bodies and voluntary organisation to support information, education and communication, delivery of services training and research activities.

(vii)Co-ordination of family planning programme throughout the country.

(viii)Evaluation of each aspect of the Programme.

(ix)Support for development of institutions with qualities of excellence and permanence which can seek and strive to advance knowledge related to educational, social, medical, biological, demographic, statistical, organisational, managerial and supply aspects of the national family planning programme.

(x)Measures to develop the strategies for people's participation at grass-roots

The Third Five Year Plan

The plan again laid emphasis on "intensive education, provision of facilities and advice on the largest scale possible and wide spread popular effort in every rural and urban community. The integration of family planning with the medical and health services especially maternal and child health was again stressed. The expanded biomedical research programme in the Plan included: human genetics, physiology of reproduction, a suitable oral contraceptive and more effective local contraceptive and follow up of sterilization cases. Another dimension added in the plan was "social policies", viz., education of women, raising the age of marriage, giving advice on sex and family life, education and advice on such other measures as may be necessary to promote the welfare of the family [Planning Commission, 1962(a)].

On June 17, 1961 the Ministry of Health constituted a Committee to study the question of family planning orientation courses for all categories of personnel with Secretary, Ministry of Health as Chairman. The committee suggested that the orientation in family planning might be integrated with the courses of instruction carried out by the Community Development organisations to train Gram Sevak/Sevikas, Gram Lakshmi, Social Education organisers, Block Development Officers, etc. Persons undertaking teachers training courses could also be given orientation at various stages. The Committee recommended that orientation could be extended to:

(a)Moulders of Public Policy, Planners, Legislators and Honorary Family Planning Education Leaders;

(b)Administrators: (i) senior administrator, (ii) junior officials in administrative posts under the Central and State Governments especially in Revenue, Agriculture, Education and Community Development Departments;

(c)Members of Panchayat Raj Institutions and Mahila Mandals;
(d)Local Leaders;
(e)Extension workers;
(f)School teachers;
(g)All medical, para-medical and medical auxiliaries already employed by State Government, Local Bodies and Voluntary organisations with special attention being given to the village dais and sanitary inspectors;
(h)All persons under training at medical colleges and medical training institutions for para-medical personnel and medical auxiliaries;
(i)Private medical practitioners;
(j)Instructors of Training Centres;
(k)Social scientists and those under training in the social welfare schemes or institutions (such as schools of social work); and
(l)Employees and workers organisation.[Ministry of Health,1963].

A notable decision to promote further people's participation was taken by CFPB. The Board recommended establishment of Family Planning Committees at village level. Approval of the Government of India was conveyed to State Governments in September 1961. In the communication to State Governments, Ministry of Health emphasised that family planning being a part of education for a fuller and better life must be inter-woven into all constructive endeavours directed towards raising the standard of living. Family Planning work in rural areas should be co-ordinated with activities of Primary Health Centre, Social Welfare Board and Education, Agriculture and other Departments. Panchayats, gram-sevaks, gram-sevakas, social welfare organisers, MCH staff should be entrusted with family planning education. Enrolment of voluntary workers (Pariwar Kalyan Sahayak and Sahayaka) should be promoted. The CFPB also recommended greater involvement of Dais (traditional birth attendants) in Family Planning Programme [Ministry of Health, 1961(b)].

Administrative problems continued to cause anxiety. The Central Family Planning Board in their meeting on December 12, 1961 at New Delhi recommended that "a stage has been reached for the setting up of an implementing agency with adequate administration and financial authority and recommends that a full-fledged Family Planning Department should be established at the centre and a Family Planning Directorate/Department in each State". On July 2, 1962 the Central Family Planning Board was informed that "it is not proposed at present to set up a separate Department of Family Planning, but the Ministry had under consideration proposals to strengthen the Family Planning Organisation at the Centre. The State Governments have been requested to take necessary action in as far as the establishment of a Family Planning Directorate or Department in the States is concerned. The Government of India offered assistance to the State Government for appointment of the following staff in the State Directorate of Health Services for implementing the Family Planning programme: one Health educator, one statistician/statistical assistant, one Stenographer/PA, one superintendent/head clerk, one Assistant/UDC and three Lower Division Clerks."

Reconstitution of CFPB

Initially, Health Ministers of five States were added to the CFPB. Later at the suggestion of the Health Secretary, the CFPB recommended that all State Health Ministers should be members of the Board. The CFPB was accordingly reconstituted to give representation to Lok Sabha, Rajya Sabha, all the State Governments, the Planning Commission, the Ministries and Organisations closely associated with family planning programme, the Chairmen of Expert Committees and scientists. The first meeting of the reconstituted Board was held in April 1963.

Family Welfare Planning

By this time the term family planning had become a euphemism for 'birth control'. The extreme distortion of scope of family planning was its identification with 'sterilization programme'. Such a development caused anxiety and attempts were made to revive the scope of family planning laid down by FPRPC in the 1950s. One of the suggestions made was to change the name of the programme to Kutumb Kalyan or Parivar Kalyan. The Family Planning Association of

India called their first centre as Kutumb Kalyan Kendra and their journal (subsidised by Ministry of Health and Family Planning) as Family Welfare. Several objections were raised during the consideration of adopting such a change: 'welfare' being a very wide concept and there were welfare organisations dealing with child welfare, women's welfare, labour welfare, social welfare and so on. A compromise was reached. It was agreed not to change the names of training and research institutions and the Ministry but the centres delivering services could be called Family Welfare Centres. On the advice of the Planning Commission it was finally decided to change the name of family planning centres to Family Welfare Planning Centres (Pariwar Kalyan Nyojan Kendras), providing a package of maternal and child health, nutritional, family limitation and other allied services. This change in name of centres was adopted throughout the country on the advice of Ministry of Health.

The broad based activities spelt out by the FPRPC were, however, provided in a few places only such as the centre of the Family Planning Association of India, Family Planning Training and Research Centre, Bombay, and Central Family Planning Institute (CFPI), Delhi. The CFPI provided family limitation, MCH family life education and marriage counselling, infertility, genetics and reproductive endocrinology services. It was hoped that trainees from these centres would provide services envisaged in changing the name of centres. The Ministry of Health was committed to integration of family limitation, maternal and child health and nutrition. The pace of integration was slow, often absent. The difficulties were both perceptual and real. Some programme personnel felt that integration would dilute family planning efforts. The pace of development of maternity and child health infrastructure was slow. At the organisational level maternal and child health officials were not given the position in the health hierarchy commensurate with their responsibility and importance of their programme. The integration of maternal and child health and family planning (family limitation) thus varied widely in different parts of the country. The main feature of the programme was: delivery of services through home visits by the para-medical personnel and health and family planning centres/clinics. The progress was not as expected. This led to developments in a number of directions, especially the re-organised family planning programme.

The highlights of the Third Five Year Plan were: initiation of the development of a National Family Planning Institute in mid-1960s; the recommendation of the Central Council of Health meeting at Mahabaleshwar in October 1962 to undertake pilot Demonstration Districts Programme in each State; establishment of a National Institute of Health Administration and Education; the launching of the Reorganised Family Planning Programme with extension approach and appointment of the Committee to study the question of Legalisation of Abortion in September 1964 with Mr. Shanti Lal Shah as Chairman.

Reorganised Family Planning Programmes

The Reorganised Family Planning Programme was a notable change in the strategy in the early 1960s. It was a shift from 'clinics' to 'extension approach'. The 'clinics' however were considered as an important second-echelon supporting service in the Reorganised Programmes. It may, therefore, be discussed in some detail.

There were a number of principles on which the Reorganised Programme was based. The major among them were:

(i)The people's participation does not imply extension of programme devised at higher levels. It means assisting people to discover their own needs, creating situations in which people make decisions, set goals, formulate policies and plans, implement and evaluate them in the light of their experience and changing needs, contribute their labour and resources and share equally the fruits of their effort;

(ii)The effective people's participation, self-help and self management require organisational structure, facilities to acquire knowledge and skills, mainly through their own social groups, assisted by professionals; and government functionaries;

(iii)The population is not a cluster of a number of persons, but has a social structure. The members of a family need to be viewed not only in terms of age, sex, education, employment and income, but also social relationships within the family and the community. The community is not homogeneous; a number of groups are recognisable based on social, economic, ethnic, religious and other characteristics;

(iv)The formal leadership in the villages such as reflected in the Panchayat does not necessarily always reflect views of all groups in the community. The formal leadership may represent the dominant elite or a powerful group with vested interests;

(v)The reproductive behaviour is conditioned by the various characteristics of each group in the community, especially social (education and health), economic, religious and cultural and their perception of the attitude of the community towards such behaviour;

(vi)The birth control practice will be facilitated if the people feel: that having a small family is valuable for various personal reasons, know that it is possible to control births and know the methods of birth control, know that having a small family is a desirable and normal behaviour and also know that such feelings and behaviour are shared and supported by the community to which they belong;

(vii)The Family Planning Programme infrastructure should be so designed as to maximise people's participation and fulfilment of their needs, to provide free flow of supplies, to deliver services required within easy reach, to have a strong component of information, education, communication and to ensure a two-way information system;

(viii)The success of the family planning programme is possible if it becomes a people's programme, and provides a feed back to programme managers through an adequate information system providing two way flow of communication.

The experience in different States had brought out several aspects of the programme which required immediate attention. Some of them were:

(i)Wide gap between expressed desire for number of children and actual birth control practice;

(ii)Information, education and communication activities for all practical purposes were limited to the centre or clinic and home visit interviews; education material produced did not pay sufficient attention to the message they contained, generally pre-testing was an exception than the rule; local leaders education camps were becoming 'a mechanical affair' with over-emphasis on achieving of "targets" for sterilization and use of birth control methods and not an activity to develop the programme as people's programme;

(iii)Available distribution channels for contraceptives had not been fully exploited;

(iv)The long distance of service centres from potential users, inconvenience inherent in supplies and services being available at a time not convenient to the users, lack of privacy and general environment were posing barriers to avail of the service provided;

(v)In some places the time when and place where services were available were not sufficiently known;

(vi)Integration of MCH and family planning services was fragile; in places there were reports of neglect of MCH services and in others dilution of family planning services; staff was not fully oriented with extension techniques: limitation of surgical beds was tending to delay in undertaking sterilization operations;

(vii)Monitoring and information system was weak. The two-way communication (from people to programme manager, and programme managers to people) was almost absent.

The situation was not uniform. Much depended on local leadership. The programme could be energised through (a) improvement of organisational, managerial, logistics aspects and information system: (b) the availability of services and supplies within easy geographical distance, without financial, bureaucratic and other barriers (c) strengthening infrastructure commensurate with the work load and guidance and supervisory staff at all levels, defining job description for each category of personnel and expanding training facilities for initial and continuous training

required to meet the need of the reorganised programme: (d) making such modifications as were required, based on experience in the field and action-research: and developments that may take place in technology including contraceptive technology; raising and maintaining morale of workers.... The action in various directions should be aimed at upgrading the quality of service, workers' job satisfaction giving attention to emoluments, housing, working environment, opportunities for further advancement, realistic work load, maintaining and raising their self-esteem.... and (e) supporting the Government organisation by a chain of voluntary workers at all levels making family planning a people's programme; with skilled help people could thus take responsibility for educating and motivating people, and distributing contraceptive material for planning, implementing and evaluating programme through their own institutions such as women's and Youth Clubs, Panchayat Samitis, Village Development Committee and local groups, and natural local leaders, Parivar Kalyan Sahayaks and Sahayakas at village level, Family Planning Education Leaders at Tehsil, District, Regional and State Levels and Co-ordinating honorary education leader at the national level.

Based on the above observations, proposals for reorganising the programme were submitted to CFPB. The operational goals of the reorganised programme in the proposal were to create for 90 per cent of married adult population the three conditions, viz., group acceptance, knowledge of the value of a smaller family and availability of contraceptive supplies within easy geographical distance. A number of organisational principles were laid down relating to development of extension wing of the programme, supplies, medical services, statistical aspects and organisational and administrative support.

The 1962-1963 Report of the Director, Family Planning stated in the following words: "Development of extension wing: The power inherent in a group itself to bring about a change in deeply rooted practice among the members of the group is greater than the influence of individual instruction by outsiders.... The extension approach whereby the forces of group pressure can be mobilized, involves methods for identifying influential leaders among different subgroups of the population, methods for encouraging them to gain knowledge and take interest in developing the small family norm among their group, methods of imparting to them basic information regarding family planning and methods of helping them actively to promote family planning practices among their group. This approach is not only more effective in bringing change, but it also allows a single worker to reach a greater number of people than through primary individual approach. It is possible to transfer responsibility, within the family planning and other programmes, to groups such as health committee of the panchayat samitis, village development committees or other groups. With skilled help, such groups are able to take up responsibility for educating and activating people, distributing contraceptive materials in an orderly way thus establishing all the basic conditions that are included among operational goals of the programme. It is essential to emphasize the use of male personnel with special training in extension education methods, for full-time work on this programme at various levels.... The availability of male workers and their high mobility, will enable the rapid creation of an effective network of supervision and support for the entire programme. This strengthened organisational structure will also make for better maintenance and use of audio-visual media and materials. Use of system of voluntary family planning education leaders who receive financial assistance for their work should be such as to supplement and strengthen the efforts of the full-time, specially trained and supervised educational workers employed under the (regular) official programme. In order to assure co-ordination this may require that selection of voluntary educational workers in the districts be delegated as much as possible to the Zilla Parishads in consultation with the District Family Planning Officer where they are working."

"Supplies:.... Lack of easy accessibility of the contraceptives is a barrier to successful use by that fraction of population who want them, and this dissatisfaction then may prevent the further spread for use of contraceptives.... Distribution of

contraceptive supplies should be arranged widely through village panchayats, midwives and at other depot holders, as well as through various health and rural development workers. For this purpose and to facilitate distribution through clinic/centres, record keeping procedures need to be reviewed and cut to the minimum. For accounting purposes, checks and surveys should be sufficiently simple and satisfactory. Commercial distribution of contraceptives is often preferred by the people themselves. In order to foster this aspect, strong encouragement needs to be given to mass manufacture of condoms in India, to reduce costs. Steps are needed to foster marketing through commercial channels and consumer cooperatives."

"Medical Services: The role of clinics to provide second- echelon supporting services needs to be clearly defined, so that they can best fulfil this function and so that clinic attendance is not mistakenly viewed as an indicator of programme effect. Programme personnel should actively resist any tendency to refer routinely normal couples interested in family planning (who can be successfully handled by the field staff) to clinics since the education of such couples should be taking place in the community; avoiding the development of field activities to stimulate natural processes of group education will only weaken the total programme. Special attention should be given to provide the most convenient and satisfactory sterilization services. Provision of these services should not compete with provision of other services in hospitals and clinics. In rural areas, 'the camp' technique needs all encouragement, since it provides important group psychological support to the people and also facilitates mobilisation of adequate surgical services. For clinical services to females, any existing maternal and child health services should be one of the important channels for education and supplies. At the periphery also, multiplication of auxiliary nurse Midwife personnel will accordingly strengthen the family planning programme. Because of their enlarged functions, the auxiliary nurse midwife may be considered to be the basic Family Welfare Worker".

"Statistical Aspects: Ultimate evaluation of the impact of the family planning programme rests upon detection of trends in fertility indices in population groups. This type of assessment is particularly important at this time in order to observe the relative effectiveness of different kinds of 'package' approaches that have been started in various parts of the country. Information about new births has additional practical importance at the block level since new mothers are a key group for education in child care and in family planning. Health workers also have good opportunities to detect such births in addition to existing registrars. It is therefore an essential step to place a computer (statistical clerk) at Block level to collect reports of vital statistics from village registrars and other sources. The family planning programme network can also be used for forwarding and compilation of such reports. Other methods of programme assessment need to be developed carefully, based on the criteria closely linked with mass-uptake of family planning practices. Data for such assessment should be largely collected by special, periodic studies rather than attempting to have them collected on a continuing basis by workers having operational responsibilities. For this purpose statistical personnel at District and State levels are essential."

"Organisational and Administrative Support: The family planning programme seeks to accelerate a mass movement towards smaller families through the cumulative impact of combination of measures. For this purpose, a well-knit programme organisation is essential. This will especially require strengthening of staff at State, District and Block level. At least one trained extension educator is required in addition to a number of male family planning field workers and strengthening of peripheral Auxiliary Nurse Midwife type of staff. There will be a need for increased attention also to such matters as job definitions, salary levels, adequate transport, living accommodation and provision and maintenance of audio-visual equipment. Development of the above organisation will require careful review and strengthening of training arrangements, according to the needs." The suggested staffing pattern was considered as minimal to

achieve a National impact: States could supplement it according to the needs.... parallel with the official structure, a network of voluntary workers and advisory groups at different levels must be formed and maximum support provided to non-government organisation to assist and support the official structure. The major role of the voluntary family planning educational workers was to maximise community participation and making the programme as people's own programme.

The CFPB in their meeting on April 8, 1963 commended the Family Planning Programme Report for 1962-1963 containing the above suggestions. The Board recommended strengthening extension education aspect of the programme especially, free flow of supplies, indigenous production of contraceptives and strengthening administrative machinery at all levels. Ministry of Health and Family Planning communicated the recommendations of the Board to the State Governments in May 1963 and financial sanction for the Reorganised Programme was granted in October 1963.

A tentative schedule for the implementation of the Reorganised Programme was prepared. According to this schedule, 20 per cent of staff for rural family planning organisation was to be completed by September 1964, another 30 per cent by March 1965 and the remaining 50 per cent by September 1965 and the entire Reorganised Programme in the country was to be on the ground by March 1966.

Uncertainties of Central financial assistance and constraints of State financial resources appeared to delay the implementation of the programme. There were some States who did not accept the Reorganised programme in its entirety. Gradually, some of the difficulties like Central support were ironed out and the Reorganised Programme was accepted and pace of the implementation increased.

Reinforced Programme

As the efforts were being made to promote the Reorganised Programme, the United Nation Advisory Mission visited India in 1965. A notable suggestion made by the Mission was to launch, parallel to the Reorganised Programme, "the Reinforced Programme". Three courses of action were recommended under the reinforced programme, viz., energetic loop (IUD) programme, intensified sterilization programme and promotion of the use of condoms especially making it widely available through commercial and other channels.[United Nations, 1966] The Mission considered the Reorganised Programme as sound but ambitious, not likely to be implemented soon. These observations seem to have shifted the focus from the reorganised programme with extension approach to "energetic loop programme".

Mukherjee Committee

The Central Family Planning Council recommended in December 1965 formation of a committee "to review what additions and changes are necessary as a result of greatly altered situation due to IUD having come in the fore-front of the programme, the staffing pattern, financial provisions, etc. A committee with Shri. B. Mukherjee, Secretary, Ministry of Health and Familly Planning, as Chairman, was set up. The Committee made recommendations on organisation, manpower, role of voluntary organisations and financial resources required. The Committee recommended not only retaining of the infrastructure under the Reorganised Programme but its further strengthening. The additional provisions suggested by the Committee included: appointment of male doctor at the HQ, PHC where female doctor was not available, one F.P. Health Assistant for a population of 20,000 and in difficult terrain the population covered by the Public Health Assistant could be further reduced to 15,000 or even 10,000; two Health Visitors in a C.D. Block, one under PHC Scheme and one under F.P. Scheme; mobile units, one per district for Sterilization programme and one IUCD Unit for 5 to 7.5 lakh population; strengthening the staff at District level; extension of Honorary Family Planning Education Programme up to the Community Development Block; training reserve for all cadres equal to 8 per cent of the cadre strength to ensure that personnel would be released by the State Governments for training. There were two other recommendations one: an

Under Secretary/Assistant Secretary (an administrative service officer) under a Joint Director, Health Services. Two: Implementation Committees at the District level with District Collector as Chairman [Ministry of Health and Family Planning, 1966].

Target Oriented and Time Bound Programme

In principle, support continued to be given to extension approach. But in practice, focus on extension approach gradually faded, before it took any roots. The 'target approach' was readily understood. In 1966, the Union Health Minister said in Bangalore: "For IUCD the targets for the country as a whole have been laid down at 20 insertions per 1000 population in the urban areas and 10 per 1000 in rural areas. Accordingly, an over all target of six million IUCD insertions have been fixed. In respect of sterilization operations, the target has been calculated on the basis of 2.5 per 1000 of population and has been fixed at 1.23 million for the country" [Ministry of Health and Family Planning, 1967(a)].

The support to targets concurrently led to increase in incentives and consideration of disincentives. The incentives continued to be called as compensation for loss of wages and other incidental expenditure. The infrastructure was increased and strengthened in the light of Mukherjee Committee recommendations. The provision of personnel in principle was on the basis of population. But for a long time in practice it was on the basis of geographical boundaries of Community Development Block, Taluk and District. The initial planning was on the basis of a Community Development Block with a population of 66,000. But gradually the population of Community Development Block increased to about 80,000-1,00,000. The result was that the work load of Primary Health Centre in a Community Development Block increased considerably and inevitably quality of service was affected. Attempts were gradually made to provide the staff on the principle of work load. This took into consideration not only the ratio of personnel to population, but also distances to be covered in places with dispersed population, difficult terrain and readiness of the local people to adopt small size family.

Possible Reasons for Collapse of the Reorganised Programme

The main reason for collapse or erosion of the Reorganised Programme was over-emphasis and over reliance on and almost an obsession with 'targets'. Sufficient time was not given for orientation of administration at various levels which was required to implement the programme in its proper spirit. The report on Evaluation of the Planning Programme stated that "almost all the assessment teams observed that people even at the highest level with the exception of the Family Planning officers at the State Level did not have an adequate understanding of the reorganised programme". The views on priority needed for family planning programme also varied in different States. The evaluation report also emphasised that there was a great need in many areas for some simple educational documents to help the family planning, as well as the health workers at all levels to undertake the special features of Reorganised Family Planning Programme. Besides this, seminars and discussions at various levels would prove helpful in promoting better understanding among the staff. "Every attempt should be made to improve communication between and among staff at all levels, as well as between the workers and the public." There were other constraints reflected in the evaluation report like questions of programme and budgetory priorities and administrative procedures, which appeared to cause delays especially in the creation and filling of posts. Although diversion of family planning funds to other non-plan health expenditure is commonly reported to occur, the Planning Commission and Ministry of Health were not in a position to intervene or ascertain the extent of diversion. "Outmoded record system and accounting procedures hindered the distribution of supplies" [Ministry of Health and Family Planning, 1967(b)].

Family Planning Programme: Evaluation and Planning Committee

The Central Family Planning Board had recommended formation of a committee to make a critical review of the programme and schemes in the Third Plan period; to assess in the light of the current trends and other available data, the position likely to be reached at the end of the Third Plan and to formulate proposals for the Fourth Plan in the perspective, wherever possible, of a 20-year period 1961-1981. The Committee was formed in July 1963. The committee formed nine study groups, viz., education, contraceptive supplies; medical services; biological research; demographic and social studies, social policy and legislation; training, relationship between official and non-official organisations; and programme organisation, administration and finance. The recommendations generally conformed with those in the programme with extension approach. Under social policy the committee recommended raising the minimum age of marriage to 18 years for girls and a sustained and widespread educational campaign by all social welfare and women's organisations for late marriages; registration of not only births and deaths but also marriages; dynamic efforts for women's education and increased employment opportunities for them, introduction of welfare services systematically 'keeping in mind inter-alia their effect on reducing fear of insecurity in old age' [Ministry of Health and Family Planning, 1967(b)].

Annual Plans (1966-1969)

While these recommendations were under consideration, the proposal for a separate department for family planning re-surfaced. The continuing high rate of growth of population and erosion of gains in social and economic development were major factors for restructuring the administrative machinery. In 1961, the CFPB had recommended establishment of a Family Planning Department. An Evaluation Committee of the Planning Commission had made specific suggestions to upgrade the family planning organisation headed by a health professional. On June 7, 1965, the Cabinet had decided that the head of the family planning organisation should be designated Commissioner Family Planning. The Department of Family Planning in the Health Ministry was established in 1969 [Ministry of Health and Family Planning, 1972]. Further strength to the programme was provided by establishment of the Cabinet Committee with Prime Minister as Chairman. The Central Family Planning Council and professional support through National Institute of Family Planning, Demographic and Communication Action-Research Committee, Bio-medical Research Committee (ICMR) and Institute for Population Studies (formerly Demographic Training and Research Centre) continued. Similar changes in administration took place in the States.

There were several anomalies in the structure of the organisation. Appointment of a separate Secretary for family planning created two bureaucratic hierarchies. This was soon resolved by having a single secretary for both the Departments--Health and Family Planning. The Commissioner Family Planning responsible for implementation of the programme, did not have the Planning Section under him. This was placed under the Secretariat Wing. Similarly, the Commissioner had no direct control over Chief (Media) and Intelligence and Evaluation section.

The Fourth Five Year Plan (1969-1974)

The pace of the programmes accelerated in the Fourth Plan. The sterilization target was fixed at 14.9 million to reduce crude birth rate from 39 to 25 per 1000 population in 10-12 years. The declared strategies generally conformed with those in the Reorganised Programme but in practice were diluted by setting targets and weightage given to mass media and incentives. A notable event during the Fourth Plan period was that in 1971 the Parliament passed the Medical Termination of Pregnancy Act, which became operative from April 1, 1972.[3]

The leadership of the family planning programme in the Ministry passed through three stages--Health professional in-charge of the

programme (the Director); sharing of the leadership between health professional (Commissioner) and bureaucrat (Joint Secretary/Additional Secretary) and finally the bureaucrat asuming full control of both administrative and technical wings.

The Fifth Five Year Plan (1974-1979)

The primary objective of Fifth Plan was to provide minimum public health facilities integrated with family planning and nutrition for vulnerable groups--children, pregnant women and lactating mothers.

Considerable progress in the family planning programme in various directions had been made by mid-1970s. The decline in birth rate was, however, not being achieved as anticipated. The birth rate goals had to be repeatedly revised. The reasons for the limited success of the programme were stated to be many, such as approach to the programme, insufficient emphasis on programmes which influenced reduction in fertility, over centralisation of programme operation and weaknesses in the community level action. In still broader perspective, poverty, disparities in income, wealth, status and power and increasing disparities were considered inhibiting factors to desired progress in the programme. These aspects had received attention of the planners in Five Year Plans, but seemed to have defied solution. On July 1, 1975, the 20-point economic programme was announced. A Minimum Needs Programme included education, health, water supply, roads, electrification, housing, environment and nutrition. Health, family planning and nutrition was viewed as a single package. But the financial allocations to different segments of social services and human resource development did not appear to match the declaration of importance to them in the Plan documents.

The reports on correlation of fertility with age at marriage, education, employment and status of women, health, nutrition and infant mortality had been underlined over the years. They were reflected in the Third Five Year Plan and in the Report of the Family Planning Programme Evaluation and Planning Committee. But they had not appeared as a single population policy package. On April 16, 1976, Health and Family Planning Minister issued a Population Policy Statement, incorporating the family planning programme strategies.

The measures suggested in the National Population Policy Statement were kept in view in recommending outlays in the Family Welfare Planning Programme 1974-1979. The integration of family planning, health, maternity and child care and nutrition was re-emphasised in the Fifth Five Year Plan [Planning Commission, 1976].

Sterilization programme, mass vasectomy camps and incentives started getting major support. This led to an all-time high performance in sterilization cases (8,261,173 during 1976-1977). The sterilization programme also contributed to the defeat of the Congress (I) in the elections and to the subsequent premature end of the Fifth Five Year Plan.

The Sixth Five Year Plan (1978-1983)

The Draft Sixth Five Year Plan 1978-1983, included a revised Minimum Needs Programme with increased targets and allocations for its several components. There were no major changes in the programme strategy. A notable activity referred to in the plan, which contributed to planning and development of family welfare programme in subsequent years, was formation of a working group for suggestions of feasible operational level of achievement for the plan and succeeding period on which further population policy could be based.[Planning Commission, 1979] The Working Group on Population Policy was formed in 1978 and submitted its interim report in March 1979.[Planning Commission,1980] Its recommendations included: Grouping of States in three categories- 'A' with effective couples protected above 15 per cent; 'B' with effective couples protected 15-25 per cent; and 'C' with effective couples protection rate 25 per cent. The desired level of protected couples suggested was 60 per cent to be reached by 'A' by 2001-2002, 'B' by 1996-1997 and 'C' by 1991-1992. The States falling in different groups based on the average rates achieved during 1976-1977, 1977-1978 and 1978-1979 according to the above cut-off points were:

Group A: Bihar, Jammu & Kashmir, Rajasthan and Uttar Pradesh;

Group B: Assam, Karnataka, Madhya Pradesh, Orissa, and West Bengal;

Group C: Andhra Pradesh, Himachal Pradesh, Kerala, Gujarat, Haryana, Maharashtra, Punjab and Tamilnadu.

Each State was required to select 'the path which was socially, culturally and administratively suitable to reach the goal'. The working group also emphasised that the population policy as indicated earlier should give equal importance to the decline both in mortality and fertility. The above recommendations were accepted by the Government. The integration of health, family planning, maternal and child health and nutrition services continued to receive support. An innovative approach to delivery of family welfare services was started in October 1977 - the Community Health Workers, - generally one such worker to 1000 population. The Community Health Worker after three months training was required to promote community participation in health and family welfare programme, and also for giving treatment for minor ailments, improving environmental sanitation and reporting of communicable diseases and vital events.

The title FAMILY PLANNING, wherever it occured was changed to FAMILY WELFARE. This change was also made in the name of the Ministry and Departments at the Central and State Government training, research and other centres. There was virtually no change in programme strategies. The Five Year Plan like its predecessor prematurely ended with the change in Government.

With the change in Government, the major prevailing problems were identified and strategies recommended at a meeting in December 1979. These observations were as follows:

(i)Any strategy in the population field, should be framed for a minimum period of ten years with adequate financial provisions for that period. Temptation for frequent changes in the implementation of strategy should be avoided.

(ii)Vigorous research and action to reduce infant mortality should be taken, especially studies in depth, of epidemiological, social and economic factors responsible for high infant mortality in different parts of India.

(iii)Political decision makers should be involved at all levels from the Parliament to Panchayats (Cabinet Sub-Committee at the Central and State levels presided by the Prime Minister and Chief Minister respectively to review, monitor and stimulate the programme; Voluntary all-party Groups from Parliament to Panchayats).

(iv)The fertility control programme should be a part of a broader movement for social change.

(v)The fertility control programme should be pursued as an integral part of overall socio-economic development. In such an integrated effort the importance of quality of health of the people and a small family norm should have distinct visibility.

(vi)The out reach of the health system being grossly inadequate should be improved by extension of the field level units.

(vii)The paradox of non-utilisation and maintenance to the optimum level of the existing services should be resolved.

(viii)The objectives of the innovative approaches already launched such as the Community Health Volunteer scheme and upgrading the skills of the traditional birth attendant and others. This would need reorientation of the personnel within the system to improve their social perspective and managerial programme.

(ix)In addition to improving reach of services in rural areas, the urban slums should receive similar attention.

(x)The high degree of credibility of the medical professionals among the people could be fully utilised through the analysis of the content of population and family planning education in their training and if necessary the Medical Council of India should be requested to bring in a large element of knowledge on population for all medical students.

(xi)The spacing methods of contraception should be encouraged. In terms of programme strategies one could think for instance in terms of the number of pregnancies averted rather than number of a particular birth control method.

(xii)The birth control delivery service should form a part of a package of health services. For instance during camps, wherever held, the entire family should be offered health check up and services (irrespective of their accepting birth control services) and simultaneously advantages of a small family and the use of different methods could be explained.

(xiii)Provision of maternal and child health service including immunisation have to play an important role in making women understand and accept the small family planning norm and adopt contraceptive devices.

(xiv)There should be selective, objective and independent studies (built into the programmes) to evaluate regularly certain infrastructure and services delivery models being developed, such as Community Health Volunteer Scheme, India Population Projects, Area Projects, Post-partum programme, etc.

(xv)The acceptors of medical termination of pregnancy should be persuaded to adopt one or other method of birth control, in the interest of her own future health.

(xvi)To increase the effectiveness of Auxiliary Midwives recruitment and training of local persons would be an essential step; in case suitably qualified persons are not available locally the entrance educational qualifications could be lowered, they could be given adequate training after recruitment and before admission to paramedical training centres.

(xvii)Not only mass media should be enlarged but their effectiveness should also be improved by organising audience participation group.

(xviii)The inter-personal contacts through group and individual discussion with messages in conformity with local cultural ethos are effective tools. The inter-face between the inter-personal communication and mass media should be further strengthened.

(xix)The population education inputs into the formal education system should be speedily extended. The efforts to strengthen further population education in adult education programme (aimed at the age group 15-35 years) should be taken, including recognition and promotion of activities by the voluntary organisations.

(xx)The system of lengthy Government procedure for support of voluntary organisations needs simplification.

(xxi)A comprehensive strategy should be developed to ensure proper enforcement of the law relating to age at marriage through education and enlightenment. Voluntary organisations, leadership group and influential persons in the community could play a vital role in this field. Compulsory registration of marriages could be considered.

(xxii)Involvement of the community could take the form of organising community groups consisting of cross-section of people drawn from various levels, age groups, economic status, social groups, etc., to act as catalysts for identifying needs and taking steps to pursue local requirements [Ministry of Health and Family Welfare,1979].

The Sixth Five Year Plan (1980-1985)

The Sixth Five Year Plan commencing 1980-1981 underlined that family planning should be interwoven with development plans especially with health, maternal child care and nutrition. Emphasis was laid on the household as the basic unit for poverty eradication; economic emancipation to enable children from poor families to go to schools, to receive adequate nutrition and develop into useful citizens; education and employment of women to liberate them from dependence and insecurity and improve their status, measures to follow the legal provision for increasing age at marriage; establishing linkages with basic needs, 20-Point and other development programmes with family planning.

The developments in health and family planning in the Sixth Five Year Plan period were greatly influenced by the historic meeting in September 1978 at Alma-Ata in Soviet-Kazakhistan. The representatives of 134 nations

including India at the International Conference sponsored by WHO and UNICEF on Primary Health Care issued the Declaration popularly known as HEALTH FOR ALL BY 2000.

The committee appointed by the Planning Commission on Health for All By 2000 recommended: "Universal provision of promotive, preventive and basic curative services. The preventive and public health problems; organising special plans to provide health care including family planning to vulnerable groups, i.e., children and pregnant women; prevention and control of endemic communicable and non-communicable diseases through immunisation, appropriate measures to leprosy, tuberculosis, goitre and curable blindness, interruption of vector borne diseases (Malaria, Filaria, and Kalazar) and reduction of diarrhoeal diseases-mortality through application of oral rehydration therapy and intestinal parasitic infestation, morbidity through enforcement of appropriate community measures; activities directed towards the promotion of food supply and the improvement of nutritional status; provision of protected water supply and sanitary disposal of excreta and population education to enable people appreciate, adopt and consciously practice the small family norm as part of the way of life." The recommended model (subject to adaptations to suit local situation) suggested by the Committee was as follows:

For each village/1000 population or population of 500 in case of hilly and tribal or sparsely populated or desert area: One Health Volunteer.

For population of 5,000 or 2,500 in case of hilly, tribal, sparsely populated or desert area: One sub-centre with one male and female multi-purpose worker and one part-time attendant.

For population of 30,000 or 15,000-20,000 in case of hilly, tribal, sparsely populated or desert areas: A Primary Health Centre fully equipped to render preventive, promotive and curative services.

For each Block/population of one lakh: A Community Health Centre with specialised medical care services in gynaecology (and obstetrics), paediatrics, surgery, medicine, general duty medical officer, public health, general duty Medical Officer in anaesthesia, general duty medical officer from one of the traditional systems of medicine, eight nurses including one to provide preventive dental health, technician, opthalmic assistant, statistical assistant and other supporting staff.

30 hospital beds for each Sub-Division/approximately 5 lakh population: A Sub-Divisional Health Centre with epidemiological wing attached to it.

For each District: District Health Centre with specialised curative services and public health experts.

The above were listed under the revised minimum needs programme [Ministry of Health and Family Welfare, 1981].

The Seventh Five Year Plan (1985-1990)

The strategy for the Seventh Plan was to streamline the entire spectrum of programme management, formulate the family welfare as multi-disciplinary and integrated efforts of all relevant development agencies, to elevate the programme into a genuine voluntary people's programme, and to "generate environment for fertility decline through relevant socio-economic intervention."

The family welfare goals envisaged in the Plan by 1990 were effective couple protection 42 per cent; CBR 29.1 per 1000, CDR 10.4 per 1000 of population, infant mortality 90 per 1000 live birth, anti-natal care 75 per cent; immunisation universal coverage; to achieve 42 per cent couple protection, annual increase of 2 per cent points annually will be needed.[Planning Commission, 1985]

The present aim was to achieve the following objectives in a phased manner, through successive Plan period by 1990 A.D.: (i) For every village, One trained Dai and one Health Guide, (ii) in each Community Development Block covering a population of about 100,000, one Primary Health Centre for every 30,000 population (20,000 population in tribal and hilly areas) and sub-centres one for 5,000 population (3,000 in tribal and hilly areas), (iii) One Community Health Centre for four Primary Health Centres with beds and specialised services in medicine, surgery, paediatrics, gynaecology and obstetrics

and public health; at sub-district/taluk hospital and District Health Organisation level considerable strengthening of staff to meet the uncanny needs in the District to enable the District organisation to plan, implement and monitor the programme and to provide facilities for referal services.

A committee of Health Secretaries and Health Directors of the States in their meeting on September 23, 1985, recommended that while the above norms might continue to be the ultimate goal of health infrastructure in future, "efforts should be made to work out revised norms which can be reasonably achieved" [Ministry of Health and Family Welfare, 1985].

In the process of quantitative expansion of health care services, adequate attention had not been paid towards the quality of services rendered, as a large number of sub-centres, subsidiary health centres, primary health centres and community health centres had been established without ensuring availability of essential physical facilities, equipment and trained personnel. Further, in certain States, new infrastructure had been created by diverting equipment and trained personnel from existing institutions like PHCs and sub-centres, thus not only creating new institutions which were not in a position to function effectively, but also adversely affecting the functioning of the existing institutions. The Committee of Health Secretaries and Health Directors of States in their meeting referred to the above-mentioned factors, and emphasised that "the first priority should be given to consolidate the infrastructure already developed by making up deficiencies in respect of equipment, trained manpower, etc. As most of these deficiencies are to be made up from the non-plan budget of these States, workable procedures should be found to ensure that the required funds for consolidation of the infrastructure are made available in the plan or non-plan budgets of the States/Union Territories, as the case may be, new infrastructure should not be set up by diverting facilities/ equipment/personnel from the existing sub-centres; subsidiary health centres, Primary Health Centre, etc.; advance planning should be done both at the State and District level to ensure that the required equipment, trained personnel and other physical facilities are available not only for new infrastructure to be created but also for making up the deficiencies in the existing infrastructure; and the States should be committed to include in their Seventh Plan the necessary programmes and activities towards this end and adequate resources for the same".

The Central Councils of Health and Family Welfare in their joint meeting held in September 1985 recommended that "at the primary health centres where operation theatres exist, services like vasectomy, mini-lap, IUD, MTP should be made available within a period of one year by either posting the trained staff or training the existing staff; the build up of Rural Health and Family Welfare Centres, conversion of IUD rooms into operation theatres and construction of Post-Partum Centre; construction which is in progress must be completed within a period of two years of the receipt of sanction orders by the State Governments, failing which the States may bear the cost of completing such schemes".

In some areas the demand for services exceeds the services available. "The existing institutions, Post-Partum centres, Primary Health Centres, etc., are no longer in a position to cope with the pressure of work. Their output far exceeds the well accepted norm". The Central Councils of Health and Family Welfare in their meeting referred to above, recommended "selective increase in the sterilization beds for institutions which need it and upgradation of post-partum centres where the work load is justified."

The Seventh Five Year Plan (1985-1990) reiterated the importance of the people's participation and integrated approach. This is reflected in the following statements in the plan. "In the success of the family welfare and MCH programmes, the most important single factor is the active participation and involvement of the people, non-governmental organisations and community organisations. The role of Mahila Mandals, Youth Clubs and Village Health Committees is of paramount importance". "Measures for encouraging community participation in the programme will be encouraged. The Block and District Panchayats would be fully involved in the planning, organising and running

health services". The Seventh Plan underlines structural integration of health, family planning, nutrition and MCH.

The ways in which the community participation is to be achieved is reflected in the recommendations of the September 1985 meeting of the Central Councils of Health and Family Welfare. They include encouragement and assistance to Non-Governmental Organisations (NGOs), implementing the programme in certain earmarked areas for setting up training facilities for their workers engaged in family welfare like Dais, Village Health Guides, ANM, etc.; provision of training facilities by the Government to NGO workers and office bearers; encouragement of a few selected organisations with proven record of voluntary action to provide consultancy services for identifying existing organisation for family welfare work for project designing and evaluation and monitoring; and encouragement and assistance to "local self-help and action groups like Mahila Mandals, women cooperatives, Nehru Yuvak Kendras, Farmers Forums, NSS; local bodies including Panchayat Raj institutions and other local groups."

One of the schemes within the rural health programme, which is aimed at people's participation is Village Health Guides Scheme. They are seen as providers of curative services at the doorstep of villagers and are reported to be masquerading as "mini village doctors". Certain lapses in the implementation of such schemes are attributed to "poor selection of personnel; absence of continued education; bad implementation of scheme and improper value judgement in respect of the programmes".

The State Health Ministers in September 1985 recommended development of "a mechanism under which the Chief Ministers should review every month the entire range of programme activities so that efforts in the Government and the non-government sectors are closely linked and coordinated to yield the maximum results".

20-Point Programme 1986

A major step was taken in August 1986 in revising 20-Point Programme as follows: (i) Attack on rural poverty; (ii) Strategy for rainfed agriculture; (iii) Better use of irrigation water; (iv) Bigger harvest; (v) Enforcement of land reforms, (vi) Special programme for rural labour; (vii) Clean drinking water; (viii) Health for all; (ix) Two-child family norms; (x) Expansion of education; (xi) Justice to Scheduled Castes/Tribes; (xii) Equality for women; (xiii) New opportunities for youth; (xiv) Housing for the people; (xv) Improvement of slums; (xvi) New strategy for forestry; (xvii) Protection of environment; (xviii) Concern for the consumer; (xix) Energy for the villages; (xx) A responsive administration.

Revised Strategy

The Ministry of Health and Family Welfare prepared a revised strategy for family welfare programme. The specific objectives sought to be achieved during 1986-1990 in the revised strategy are to; Raise mean age at marriage for women over 20 Years; Promote "two-child family limit" as preferred family size; Substantially increase demand for contraception to achieve couple protection rate of over 42 per cent; Improve and strengthen the infrastructure and the quality of service; Enhance child survival through universal immunisation and promotion of Oral Rehydration Therapy; Broad-base programme outreach by maximum involvement of non-governmental structures; Secure more effective intra-sectoral and inter-sectoral coordination; Streamline and improve programme management at all levels; Generate environment for fertility decline through relevant socio-economic interventions".

"Major tasks to be achieved during the Seventh Plan are: 31 million sterilizations, 21.2 million IUD insertions and 14.5 million conventional contraceptives and oral pill users to be enrolled by 1989-1990; Attempt to reach higher targets by converting awareness and knowledge into acceptance through mass media and interpersonal communication and motivation; Immunize 82 million infants and 90 million mothers; Universalize (150 million households) the use of Oral Rehydration Therapy; Population education to all children in the age group of 11-15 years (estimated 109 million); Family Life lessons for youths (15-19 years); Population education to those out of schools and colleges as a part of Adult Education and Non-Formal Education System; One round of training for all

personnel (about eight lakhs) to improve professional and other relevant skills; ..... Intra and intersectoral coordination among various development departments will be strengthened and enhanced; The present health and family planning infrastructure will be properly consolidated, suitably augmented and optimally utilised through organisational and management improvement; Various apprehensions about the existing methods of family planning will be removed through effective communication programmes and improved quality of services; Research focus will be on developing more acceptable techniques and improving the acceptability of the existing methods; The two-child family norm will be promoted through a structural system of material and non-material incentives; Female literacy and employment programmes will be substantially stepped up; The programme will be progressively debureaucratised and non- governmental structures promoted on a much wider scale to effectively involve the community at large in the programme."

The special feature of the Revised Strategy is that it spells out in detail the specific interventions to achieve the objectives and shows determination to achieve the goals expeditiously. The demographic goals appear optimistic. The health goals are achievable; in fact already a decline in infant mortality rates is perceptible in several States. The real apprehension is in the case of those States which are lagging behind. These are the States which are most populous.

The implementation of the revised strategy will be a tremendous task in financial inputs, manpower management, logistics, training, etc. In many cases radical changes may be necessary.

FOOT NOTES

1. The 20-Point Economic Programme included:

(i) Continuance of steps to bring down prices of essential commodites, streamline production, procurement and distribution of essential commodities. Strict economy in Government expenditure.

(ii) Implementation of agricultural land ceilings and speedier distribution of surplus land and compilation of land records.

(iii) Stepping up of provision of house sites for landless and weaker sections.

(iv) Bonded labour, where it exists, will be illegal.

(v) Plan for liquidation of rural indebtedness. Legislation for moratorium on recovery of debt from landless labourers, small farmers and artisans.

(vi) Review of laws on minimum agricultural wages.

(vii) Five million hectares to be brought under irrigation. National Programme for use of underground water.

(viii) An accelerated power programme. Super Thermal Stations under Central control.

(ix) New development plan for development of handloom sector.

(x) Improvement in quality and supply of people's cloth.

(xi) Socialisation of urban and urbanizable land. Ceiling on ownership and possession of vacant land on plinth area of new dwelling units.

(xii) Special squads for valuation of conspicuous construction and prevention of tax evasion. Summary trials and deterrent punishments for economic offenders.

(xiii) Special legislation for confiscation of smugglers' properties.

(xiv) Liberalisation of investment procedures. Action against misuse of import licences.

(xv)New schemes for workers' association in industries.

(xvi) National permit scheme for road transport.

(xvii) Income tax relief to middle class, exemption limit placed at Rs. 8,000.

(xviii) Essential commodities at controlled prices to students in hostels.

(xix) Books and stationery at controlled prices.

(xx) New apprenticeship scheme to enlarge employment and training especially of weaker sections.

2. Net reproduction rate implies average number of daughters that would be born to a woman if she experiences the current fertility and mortality patterns throughout her reproductive span 15-49 years.

3. The legislation on medical termination of pregnancy was based on the recommendations made in the Report of the Committee to Study the Question of Legalisation of Abortion, Ministry of Health and Family Planning, New Delhi. The Committee was appointed on September 29, 1964 and submitted its report to the Minister of Health and Family Planning in December 1966.

ABBREVIATIONS

ANM	Auxiliary Nurse Midwife
CBR	Crude Birth Rate
CDR	Crude Death Rate
CFPB	Central Family Planning Board
CFPI	Central Family Planning Institute
DTRC	Demographic Training and Research Centre
DWCRA	Development of Women and Children in Rural Areas
FP	Family Planning
FPO	Family Planning Officer
FPRPC	Family Planning Research and Programme Committee
HQ, PHC	Headquarters, Primary Health Centre
ICMR	Indian Council of Medical Research
ICRC	Indian Cancer Research Centre
IRDP	Integrated Rural Development Programme
IREPP	Integrated Rural Energy Planning Programme

ISI	Indian Statistical Institute
IUD/IUCD	Intra-Uterine Contraceptive Device
MCH	Maternity and Child Health
MNP	Minimum Needs Programme
MTP	Medical Termination of Pregnancy
NREP	National Rural Employment Programme
NSS	National Sample Survey
PA	Personal Assistant
PHC	Primary Health Centre
TRYSEM	Training of Rural Youth for Self Employment
UDC	Upper Division Clerk

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AGRICULTURAL GROWTH AND INVESTMENT IN INDIA

Nilakantha Rath

The annual rate of growth of the net domestic product as well as the total production from agriculture in India reached a peak during the fifth five year plan period, and has shown a declining trend during the Eighties. This appears to be largely due to reduction in the growth of real fixed capital formation in agriculture. There has been a declining trend in the share of public investment in agriculture during the Sixth and the Seventh Plans. This is sought to be made good by increased private investment in agriculture. But private investment in agriculture, increasingly financed from bank loans, has been geographically very unevenly distributed. It appears unlikely that without greater public sector investment and other appropriate policy measures, the vast regions characterised by poor agricultural growth can come up and use institutional credit to a greater extent.

After three and half decades of planned economic development, India continues to be a predominantly rural and agricultural society. More than three-fourths of the population live in rural areas. While this proportion has steadily declined over the past 30 years, the percentage of population dependent on agriculture for its living remained unchanged at around 70 per cent for 50 years till 1971; it has registered a marginal decline only during the last one and a half decades. It means, the rate of growth of the population dependent on agriculture has been the same as, and after 1971 only marginally lower than, the rate of growth of the total population in the country. The rapid decline of rural handicrafts and of the artisan class has added to the increase in the number of people dependent on agriculture and kept its proportion unchanged.

This sustained rate of growth of population dependent on agriculture for its living has been matched - but just matched - by the rate of growth of total net income generated in the agriculture sector, i.e. the net domestic product (NDP) in agriculture. The annual compound rate of growth of the total net income (NDP) generated in the agricultural sector during the 30 years, 1955-56 to 1984-85, (at constant prices) has been 2.14 per cent, just about the rate of growth of population dependent on agriculture. (The First Five Year Plan period has been excluded since the data are not free from serious omissions despite efforts of the statistical agencies.) As a result, the average real per capita income of the people living on agriculture has remained practically stagnant during the last 30 years or more. This should be a matter of great concern.

One would have expected the introduction of the new varieties of cereal seeds, propagated in Indian agriculture soon after the middle of the sixties, combined with extension of irrigation and use of fertilizers and insecticides, to result in a higher rate of growth of income in the agricultural sector than before. But this does not appear to have happened. The annual compound rate of growth of income (NDP) in agriculture during the 10 years, 1955-65, was 2.23 per cent a year. This was followed by two years of severe drought; but just after this the new wheat, rice and millet seeds were introduced. The compound rate of growth of income in the agricultural sector during the period 1968-69 to 1984-85, however, has been 2.26 per cent, not very different from the growth rate in the pre-Green Revolution decade.

There is also no evidence of a steady increase in the rate of growth of agricultural income in the successive Plan periods. During the Fourth Five

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Year Plan period (1968-69 to 1973-74), the growth rate of NDP was 2.07 per cent; in the Fifth Plan period (1973-74 to 1978-79) it was 3.95 per cent; and in the Sixth Plan period, i.e., 1978-79 to 1984-85 (excluding 1979-80, a year of severe drought), it was 1.66 per cent only. (If the income in 1979-1980 were at the same peak level as in the previous year, the growth rate of agricultural income in the Sixth Plan period would not be greater than 2 per cent a year.)

These growth rates are calculated by taking the agricultural income generated in every year - good, bad or indifferent - of the period. A way of measuring the growth in the achieved potential levels of income generation is to calculate the growth rates of peak incomes over the period. In the decade 1955-1965 it was 2.66 per cent per year. During the Fourth Plan period it was 2.9 per cent (this is rather high because the base year, 1968-69, income was lower than the income in 1964-65); during the Fifth Plan it was 3.72 per cent.; but during the Sixth Plan, i.e., 1978-79 to 1984-85, it was 1.35 per cent only.

Thus, it appears that the growth rate of income in the agricultural sector was significantly high only in the Fifth Plan period;during the Fourth Plan period it was comparable to the rate of growth in the pre-Green Revolution decade, and in the Sixth Plan period (including 1979-80) it was distinctly lower.

What is true of the trend in net agricultural income in India, is also true of the trend in gross agricultural production.[1] The annual compound growth rate of agricultural production in the decade preceding the Green Revolution, i.e., 1955-1965, was 2.95 per cent. During the Fourth Plan period it was around 2 per cent (1967-68 to 1973-74 it was 1.97 per cent; excluding the years of poorer production, i.e., 1968-1969, 1971-72 and 1972- 73, it was 2.18 per cent); during the Fifth Plan period it was 4.45 per cent; and during the period 1978-79 to 1985-86 (i.e., the Sixth Plan and first year of the Seventh Plan), excluding 1979-80, it was 2.36 per cent only. Over the entire period 1967-68 to 1985-86 the annual compound growth rate of gross agricultural production was 2.66 per cent only, which is less than during the pre-Green Revolution period.

If we compare the trend rates of growth of peak levels of production we also find similar differences. During 1955-65 this growth rate was 2.78 per cent a year; during 1967-86 it was 2.69 per cent. During the Fourth, Fifth and Sixth Plan periods it was 2.18, 4.00 and 2.13 per cent, respectively.

Indeed agricultural production and income appear to have registered the highest rates of growth during the Fifth Five Year Plan period; thereafter there has been a distinct slowing down. Against the background of the dependence of more than two-thirds of the population on agriculture and the stagnancy of their average per capita income level, this slowing down in the growth of agricultural production and income deserves careful attention.

Growth of agricultural production depends upon a number of factors,the most important of which are technological improvement in crops and production methods, investment in agriculture, the institutional structure in land holding, as well as the trend in relative prices and terms of trade. Rainfall and other weather conditions are also particularly important in explaining trends over relatively shorter periods, like a Plan period. We begin by examining the trend in investment in agriculture, in order to see to what extent the trend of growth in agricultural production and income can be related to it. While attention will not be paid to the other factors, it is useful to note that the impact of technological changes in agriculture, like new seeds and crops as well as application of fertilizers, is dependent on acts of investment like irrigation and land development.

Let us first review the Plan targets and performance in regard to outlay and investment during the last three Plans. The percentage of total Plan Outlay on agriculture (including irrigation, forestry and fisheries) in the Public Sector has been better than 20 per cent in most Plans: it was 24, 20.6 and 25.3 per cent in the Fourth, Fifth and Sixth Five Year Plans, respectively. In actuality, these percentages were more or less achieved in the three Plans: these were 23.3, 22.2 and 23.9, respectively recording a marginal shortfall in the Fourth and the Sixth Plans and a marginal rise in

the Fifth Plan period.[2] It suggests that there was no great diversion of actual public sector Plan Outlays from agriculture to other sectors.

But these are only percentages of actual total Plan Outlay in the Public Sector during a Plan period. It would be more relevant to ascertain if the projected total Plan Outlays or investments in agriculture were actually achieved. Unfortunately direct comparable data are not available for the purpose. But indirect method of estimation,[3] shows that the actual investment in agriculture and allied matters in the Public Sector was about 10 per cent less than planned during the Fourth Plan period, somewhat higher than planned during the Fifth Plan, and nearly 23 per cent less than planned during the Sixth Plan.

What about the investment in agriculture in the private sector? The Fourth Plan visualised private sector investment in agriculture to be about a third of the total investment in agriculture[4]. In fact, private sector investment in agriculture turned out (at comparable prices) to be 2.7 times that planned. This is what made the actual total investment - public plus private - in agriculture during the Fourth Plan much larger in both absolute terms and in terms of share of total gross capital formation in the economy, than what had been planned. The Fifth Plan did not present estimates of private sector investment. But the National Accounts Statistics of the Central Statistical Organisation (CSO) show that both total as well as private sector investment in agriculture increased at about the same rate during the Fifth Plan over the Fourth. In the Sixth Plan, as noted above, there was 23 per cent shortfall in public sector investment in agriculture; but simultaneously, there was an almost 19 per cent higher investment in agriculture in the private sector than planned, leaving the total investment in agriculture only about 2.5 per cent less than planned.

This review of investments in agriculture during the last three Plans shows that the total actual investment in agriculture in the public and private sectors together was higher than planned during the Fourth Plan period, and thereafter has been approximately equal to Plan targets. But the actual public sector investment was lower by 23 per cent than planned during the Sixth Plan period. The investment by private sector in agriculture, on the other hand, registered a sharp increase over that planned in the Fourth Plan and has continued at the high level. Indeed, its share in total investment in agriculture increased in the Sixth Plan, when private sector investment made good the very considerable shortfall in the investment in the public sector.

The long term constancy in the rate of growth of real income generated in the agricultural sector as well as of gross agricultural production, indeed the slight decline in it during the Sixth Plan period, cannot, therefore, be attributed to any serious divergence of the total investment in agriculture from the planned levels in the three successive plans. Could it then be that the planned level of total investment in agriculture was inadequate to sustain a higher rate of growth of production and income in the sector? In order to examine this question we propose to use the data on Gross Capital Formation in the Public and Private Sectors in the National Accounts Statistics put out by the Central Statistical Organisation. It is useful to remember here that while the CSO data on public sector investment in agriculture relate only to direct investments in agriculture (and related items including irrigation), the Plan document includes many other items (like agricultural education and research, land reforms, warehousing and storage, co-operation, investment in rural financial institutions, management of natural disasters, community development and Panchayati raj institutions, parts of investments in IRDP and special area programmes, etc.), investments under which are classified under other heads in the National Accounts Statistics.

Long term time series show that Gross Domestic Capital Formation in agriculture as a share or percentage of Gross Domestic Product (GDP) in Agriculture in India, both valued at current prices, has steadily risen since the middle of the sixties. Gross capital formation which formed less than 6.0 per cent of the GDP in agriculture till the middle of the sixties, rose steadily thereafter and was about 14 per cent of GDP during the Sixth Plan period.[5] One would have thought that with investment in agriculture forming a growingly larger proportion of the income generated in agriculture, this income

should grow at a faster rate. But that does not appear to have happened. There can be several reasons for this.

First of all, it may be repeated that in the above calculation the GDP and gross capital formation have been valued at current prices. If the relative prices of farm products and capital goods as well as current inputs have changed very much, then a higher value of investment will become necessary to sustain a given rate of growth of income. There is some evidence to suggest that during the Sixth Plan period the terms of trade of agriculture were somewhat lower than what they were earlier [Rath, 1985(a)]. But from the point of view of capital formation, it is important to note the very sharp increase in the relative price of capital assets in agriculture. The CSO data show that while the implicit index of prices at which the income (GDP) in agriculture is computed, had risen by 76 per cent between 1973-74 and 1984-85, the implicit price index of Gross Capital Formation in agriculture had risen by 169 per cent during the same period. The bulk of the rise in the latter price index was between 1973-74 and 1980-81, when it rose by 89 per cent, while the GDP's price index rose by only 34 per cent. However, during the Sixth Plan period there was a spectacular rise in the implicit price index of Gross Capital Formation in agriculture in the Public Sector. Its price index rose by 78 per cent over five years (during 1980-81 and 1984-85), while those of private capital formation as well as of GDP in agriculture rose by around 32 per cent only.

This sharp increase in the cost of investment in agriculture since 1973-74 implies that in order to create additional assets of a given quantity a relatively much larger sum was needed compared to the value of the output it could produce, than was the case earlier. This has become more so in case of Public Sector investment in the Sixth Plan period.[6]

If we adjust for these price changes and compare Gross Domestic Capital Formation (GDCF) in agriculture with the Gross Domestic Product (GDP) in agriculture at constant (1970-71) prices, we find that real Gross Capital Formation as a percentage of real GDP rose from around 6 per cent in the early sixties to 7.5 per cent in the latter half of the sixties, to about 11.5 per cent during 1978-81, then declining to around 10.5 per cent in the last four years of the Sixth Plan period. Thus, it appears that the rising share of gross capital formation to GDP at current prices was partly due to rising costs. Nevertheless, there appears to have been an increase in the proportion of real gross capital formation in agriculture to the GDP from agriculture, during the last two decades.

But the second fact that deserves attention in this context is the role of changes in stock or inventories in the gross capital formation in agriculture. Gross capital formation consists of fixed capital formation plus changes in inventories. While inventories are a necessary part of any enterprise, changes in it from year to year are generally of a fluctuating character. The calculation of inventories in the private sector in agriculture (which accounts for the bulk of it) is done by a very unsatisfactory indirect method, which the Committee on Capital Formation and Savings in India (1982), (the Raj Committee) has recommended to be changed.[Reserve Bank of India, 1982 p. 90] In any case, the crucial investment from the point of view of growth in production and income is investment in fixed capital formation. It would be useful, therefore, to examine how fixed capital formation in agriculture has behaved during the last three Plan periods.

Changes in inventories formed less than two per cent of the Gross Capital Formation in agriculture till the beginning of the Fourth Five Year Plan. Thereafter, it increased greatly and during the last 7-8 years (i.e., since 1978-79) came to form 16 to 22 per cent of the real gross capital formation in agriculture. Netting this from Gross Capital Formation, one gets Gross Fixed Capital Formation in agriculture at constant (1970-71) prices. These data show that real fixed capital formation in agriculture as a percentage of real income (GDP) in Agriculture increased from around 6 per cent at the end of the Third Plan period to 7.5 per cent in the later part of the sixties, reaching 8.5 per cent by the end of the Fourth Plan. Thereafter, it increased to 9 - 9.8 per cent during 1976-77 to 1980-81, declining again to 8.5 per cent during the Sixth Plan period.[7] This shows that there was no significant increase in the share of fixed capital

formation in the total income from agriculture in the Sixth Plan period over the Fourth Plan period; only the five years, 1976-81, recorded a distinctly higher level.

But the matter does not end here. In order to assess the impact of investment in agriculture on the growth rate of income, we need find out if the entire investment was adding to the productive assets in agriculture, by taking account of replacements. The point can be illustrated with an example.

One of the items of fixed capital formation in agriculture is tractors and related farm machinery. The All India Livestock Census of 1976 shows that there were 2.76 lakh tractors with farmers in India in 1977 [Ministry of Agriculture and Rural Development, 1985, Pp.178-179]. The Seventh Five Year Plan document states that there were 5 lakh tractors in use in India in 1984-85 [Planning Commission, 1985, p. 2]. This means there was a net addition of 2.24 lakh tractors during the nine years since 1977. But the number of tractors produced in India and sold in the domestic market during these years was around 5 lakh [Ministry of Agriculture and Cooperation, 1986, p. 74]. It means, 2.76 lakh tractors were phased out during this period. Therefore, more than 50 per cent of the investment in tractors during this period can be said to have been for replacement, not addition to fixed capital formation. About one-fifth of the total term loans to agriculture in India is for the purchase of tractors[8]. With the help of this one can estimate the extent of total gross fixed investment on replacement of tractors. Somewhat similar is investment in pumpsets. Rural electrification has resulted in a large measure in replacement of diesel pumpsets by electric ones. Most of these diesel sets remain as standby units with the farmers, without making any significant contribution to further growth of agricultural production. The data on these are not readily available. But it is likely that adjustment for this to a similar extent as for tractors would put the share of effective fixed capital formation at less than 8 per cent of the GDP in the agricultural sector during the Sixth Plan period. This is lower than the levels in the Fifth Plan period.

A few other factors may also be taken into account in this context. One is the under-use or non-use of capital assets created. Creation of an asset can lead to greater output provided it is used. While there has been no change in the percentage use of potential created under major and medium irrigation projects completed, a new phenomenon reported during the Sixth Plan period is the under-use of minor irrigation projects completed, to the extent of about 6 or 7 per cent of the total potential [Ministry of Finance, 1987, p. 15].

The nature of investment is another matter that may lead to poorer income generation with the help of assets. A glaring instance appears to be the investment under IRDP. The total investment due to IRDP accounts for about 15 per cent of the total fixed capital formation in agriculture during the Sixth Plan. The concurrent monitoring surveys by the Department of Rural Development, in the Ministry of Agriculture and Cooperation, lead one to believe that the capital-output ratio of this investment is very high, possibly around 6 or 7, if estimated at constant prices. This is a new type of investment during the Sixth Plan, with a relatively short gestation period. Therefore, its impact on the growth rate of income from agriculture (including dairy and animal husbandry) could not have been in the direction of raising it.

The net result of all this is that effective fixed capital formation in agriculture has not been a growing proportion of the total income generated in agriculture during the last three Plans. There was a distinct improvement in this in the last three years of the Fifth Plan, but the actual achievement in the Sixth Plan has been significantly lower than that. There was a distinct decline year by year, in real capital formation in the Public Sector during this Plan, and the bulk of the decline was in the field of irrigation which had a distinctly lower share in actual total public sector outlay than had been planned [Ministry of Finance, 1987, p. 15]. While decline in Public Sector investment was made good by increased investment on private account, the instances relating to tractors, pumpsets, minor irrigation and IRDP suggest that a growing proportion of this was either for replacement of assets or wasted in idle capacity

or on investment along lines with very low income generating capacity. The net effect is a lowering of effective investment in agriculture.

The matter may be looked at in a different way. The total fixed capital formation in agriculture in the economy (at constant prices) was nearly 31 per cent higher during the Fourth Plan over the investment in the previous five years[9]. But the total fixed capital formation during the Fifth Plan was only about 16 per cent greater than during the Fourth Plan, mainly because of the sharp decline in investment in the private sector due to inflation and stringent credit restrictions to fight it during the first two years, 1974-76. In the remaining three years the annual level of investment in agriculture was much higher than during the Fourth Plan. The fixed capital formation in the Sixth Plan was 23 per cent higher than during the Fifth Plan. But if we could make allowance for replacements and IRDP - a brand new low productive investment - the rest would most likely not record a better than 18 per cent increase over the Fifth Plan. Indeed, the annual average fixed investments net of replacements during the Sixth Plan would, in all probability, turn out to be lower than during 1976-80. For an economy planning for a higher rate of growth based on a higher level of agricultural production and income, it does not auger well.

We can compare these incremental rates of capital formation with incremental rates of growth in income. The annual GDP in agriculture (at constant prices) had increased by about 14 per cent over the pre-Fourth Plan peak by the end of the Fourth Plan. During the Fifth Plan this increase was more than 20 per cent. But during the Sixth Plan the increase in peak GDP was less than 11 per cent (1983-84 over 1978-79). Normally, one would expect many fixed investments in agriculture to register their full potential impact with a lag of a few years. In a rough way one can say that the high rate of growth of GDP in agriculture in the Fifth Plan was due to the high rate of fixed capital investment in the Fourth Plan. Of course, the weather was another contributing factor: the last four years of the Fifth Plan period recorded reasonably good rainfall leading to increased farm production. The poor growth rate of income in the Sixth Plan period may not be entirely due to lower rate of growth of capital in agriculture. The plan period was plagued (and the Seventh Plan period continues to be) with indifferent or poor weather, except in 1983-84 when agricultural production recorded an unprecedented peak. Yet this peak level of income compared with 1978-79 (an earlier peak also) records an increase in GDP-Agriculture of less than 11 per cent.

This long review of trends of investment and income in agriculture shows that during the last 15 years there has been no significant increase in the rate of fixed capital formation, and the Sixth Plan records an effective decline. The steady decline in public investment in agriculture has been in hard investments like irrigation; the compensating increase in private investment has been in IRDP. The advocacy of a direct attack on rural poverty was in the nature of a programme to supplement the best possible planned investment for agricultural development [Dandekar and Rath 1971]. It was observed that the normal plan programmes for agricultural development, constrained by the requirement for material balance in the economy, were unlikely to raise the income of the large body of rural poor above the poverty level in a reasonable span of time. Therefore, a supplementary programme, with little material input other than unskilled labour, to be financed through transfer of earnings from the upper income classes, was advocated. Unfortunately, however, this direct attack on rural poverty whether through NREP, EGS and RLEGP or IRDP, appears to have substituted planned investment in agriculture, instead of being a supplement to the best possible efforts in agricultural investment. It is possible that the large buffer stock of foodgrains created a feeling of complacency; it appears to have given rise to a feeling that agriculture is no longer a pressing priority in development effort. If true, it is dangerous.

But, it appears, that is what was proposed in the Seventh Five Year Plan. The Plan provides for 19 per cent of the total Plan expenditure on Agriculture and allied matters, while in the Sixth Plan it was 21.1 per cent. But unlike in the Sixth Plan, the investment in the Public Sector in Agriculture is put at 17.9 per cent of total Public Sector

Investment, while in the Sixth Plan it was 20.7 per cent. There is a similar lowering in the share of private sector investment in agriculture, from 21.55 per cent to 20.2 per cent.

But the more meaningful way of comparing the Seventh Plan allocations is with the achievements during the Sixth Plan. The proposed total investment, public plus private, in agriculture in the Seventh Plan (including both direct and indirect investments, as the Plan documents give it) is only 9.5 per cent higher than the total actual investment in agriculture during the Sixth Plan period (both at 1984-85 prices). This, against an almost 33 per cent increase in the proposed total Seventh Plan investment over the actual Gross Capital Formation in the economy during the Sixth Plan. But what is more, the proposed Public Sector investment in agriculture is marginally lower than what was achieved during the Sixth Plan (which itself was 23 per cent lower than what had been proposed), while the proposed private sector investment in the Seventh Plan is almost 25 per cent higher than what was achieved during the Sixth Plan (which was also almost 18 per cent higher than what had been proposed). Thus, there is a distinct shift in proposed investment away from Public Sector and in favour of the Private Sector. Since the direct investment in agriculture in the Public Sector, as measured by the CSO's Gross Domestic Capital Formation in Agriculture in the Public Sector, formed about 50 per cent of the total achieved Plan Investment in Agriculture (both direct and indirect), we can fairly suggest that the same is proposed in the Seventh Plan. This estimated Gross Capital Formation in Agriculture in the Public Sector plus the proposed private sector investments in agriculture in the Seventh Plan turns out to be only about 16 per cent higher than the actual investment during the Sixth Plan. We may recollect that the actual percentage increases in Gross Capital Formation in Agriculture in the Fourth, Fifth and Sixth Plan periods were 31, 16 and 23 per cent, respectively higher than during their preceding five year periods. It appears from this that the rise in capital formation in agriculture is going to be of the order of what it was during the Fifth Plan - the lowest during the last three Plans. Apart from the fact that the Fifth Plan was plagued by severe inflation and drastic credit control measures during the first two years, while the Seventh Plan is a proposal, there is a basic difference in the pattern of public and private investment then and now. Unlike in the Fifth Plan, Private (and even Public) investment in the Seventh Plan has a large component of IRDP investment, as was in the Sixth Plan. There is no indication if the under-utilization of minor irrigation potential created -noticed for the first time in the Sixth Plan - would vanish now. The replacement factor would become increasingly important in the gross capital formation. Thus, with the same set of problems in the Seventh Plan as in the Sixth Plan, the percentage rise in Gross Capital formation has been proposed at 16 per cent during the Seventh Plan, while this rise was 23 per cent in the Sixth Plan. The effective fixed capital formation is sure to be lower in such a situation.

One wonders if even these proposed investments would materialise, particularly in the public sector, in view of the short fall in Plan resources due to mounting non-Plan expenditure, to which the Planning Commission has already drawn attention. As for private investment, the very low productive investments like IRDP dominate the field. But what is even more important, the private investments, particularly from loan funds, are regionally very unevenly distributed. Let us turn our attention to this.

An important source of gross capital formation in the private sector in agriculture is loans from financial institutions, cooperative and commercial banks. (The Government's direct loans to agriculturists are a very minor part of the total loans.) The term loans made to cultivators by these financial institutions are essentially for creation of durable capital assets. Therefore, it is proper to compare actual term loan advances to agriculture in a year to the Gross Fixed Capital formation in agriculture in the private sector in that year. Data show that at the beginning of the seventies institutional loans accounted for about 25 per cent of the gross fixed capital in agriculture in the private sector[10]. But soon, with the nationalised commercial banks entering the field in a big way, the share of institutional finance increased to more than 30 per cent in the remainder of the seventies and to more than 45

per cent in the Sixth Plan period, reaching 54 per cent by 1984- 85. Loan finance has thus become progressive important in fixed capital formation in the private sector in agriculture, which in turn has become steadily more important in the total fixed capital formation in agriculture over the years.

The growingly important term loans for private fixed capital formation in agriculture have been very unequally distributed amongst regions in the country[11]. In 1973-74, the last year of the Fourth Plan, six States, Punjab, Haryana, Gujarat, Maharashtra, Tamil Nadu and Kerala, which traditionally had been in the forefront of the cooperative credit movement in the country, received 50 per cent of total term loans disbursed during the year, while they accounted for only 30 per cent of the total agricultural land in the country. As against this, six States, namely, the four States of eastern India - Assam, West Bengal, Bihar and Orissa - and the two States of Madhya Pradesh and Rajasthan in Central India, accounting for 40 per cent of the total agricultural land in the country, received only 21 per cent of all term loans disbursed. The rapid growth of term loans in the subsequent decade has seen realignment in the dominant position of some States: while Punjab and Haryana have continued to dominate, increasing their share by nearly 50 per cent over the years, Maharashtra and Gujarat have lost their dominant position (thanks to the relative decline in the performance of the cooperatives), and Andhra Pradesh emerged as another State with a larger share than its cropped area. In 1976-77, Punjab, Haryana, Andhra Pradesh, Karnataka and Kerala, with only about 22 per cent of the total cropped land received 44 per cent of the total term loan. In 1983-84, Punjab, Haryana, Andhra Pradesh and Kerala, with only 16 per cent of the total cropped land received 32 per cent of the total term loan, in 1984-85 Tamil Nadu substituted Andhra Pradesh amongst the top four, which received more than 28 per cent of the loans with only 11 per cent of the cropped land. Thus, Punjab and Haryana and the four southern States have by and large received the bulk of the term loan - twice as large a share as their share in total agricultural land.

As against this, the share of the four eastern Indian States and Madhya Pradesh and Rajasthan remained unchanged at around 22 per cent over the entire period, and the share of the four eastern Indian States in the total term loans has remained below 10 per cent without any improvement. However,if one takes only direct term loans for land-based activities in agriculture (excluding allied activities), the share of the four eastern Indian States had come down to only 4 per cent in 1984-85. (These data are not presented here).

This skewed distribution of term loans for capital formation in agriculture is sure to be reflected in the performance of agriculture. The average annual growth rate of cereal production in the four eastern Indian States and Madhya Pradesh, during the period 1967-68 to 1984-85, was between 0.5 and 1.5 per cent, which was less than half or quarter of that for the country as a whole.

Indeed, in many other states where the share of term loan has been comparable to their share in total agricultural land, one can still find a low rate of growth in agriculture because of very skewed distribution within the State. The irrigated pockets - the pockets of faster agricultural development within a State - are likely to absorb larger share of the term loans for agriculture. (Even IRDP loans show this characteristic.) Tamil Nadu shows a much better growth rate of sugarcane than the all-India average, while for most other crops its performance has been poor. Rajasthan shows a very high rate of growth of rice, wheat and sugarcane - three major irrigated crops - while in case of other, mainly unirrigated crops, the growth rate has been negligible if not negative. It can be safely conjectured that most of the term loans must have gone to the canal irrigated areas in the state. In Punjab nearly 90 per cent of the total cropped land is irrigated and Punjab's share in total term loans is not only three times as high as its share in total cropped land, but nearly half of its term loans is for purchase of tractors and other farm implements. Indeed, NABARD has to check Punjab's propensity to demand larger term loans for the purpose, in order to ensure that other regions are not starved of the earmarked funds for refinancing.

The greater the level of agricultural development, the greater the capacity and desire of farmers to take term loans to finance capital formation in agriculture. The poor credit-deposit ratios of banks in any agriculturally underdeveloped region indicate only the other side of this coin.

The implication of this is that one cannot depend increasingly upon institutional credit and, through it, on private sector investment in agriculture to bring about greater investment, production and income in the vast regions of the country presently agriculturally underdeveloped. Let us remind ourselves of the Planning Commission's statement that only 15 per cent of the cropped land in the country has accounted for more than 50 per cent of the increased cereal production in India in the post-green revolution period. The under-developed areas are mainly the eastern Indian States and the relatively low rainfall regions spreading from north to south in the western part of the country.

The low rainfall (or the so-called dry) regions in central and peninsular India are characterised by low flow irrigation potential as well as greater uncertainty of sub-soil water for irrigation [Rath and Mitra, 1986]. A wider spread of the limited flow irrigation in these regions would not only give greater stability and growth to agriculture, but also lead to greater income generation from the given quantity of water and its wider distribution amongst farmers and labourers than under the existing pattern of use of water. The redesign of the existing irrigation projects in this region as well as the design of new ones keeping this principle in view, will also have a beneficial impact on exploitation of underground water through wells and tubewells. The wider spread of irrigation water and irrigated crops in this vast region will lead to greater possibility of tapping and recycling seeped water, thereby providing a better basis and possibility of private investment in wells and pumps. Greater public sector investment in the flow irrigation schemes in this manner would have useful impact on private investment in irrigaton and related matters; not otherwise [Rath and Mitra, 1989].

Public investment in major and medium irrigation projects in the proper manner in the dry regions cannot, however, reach more than half the agricultural lands in the region. For the rest, land bunding, terracing and other land development measures are a crying need. These will conserve top soil and rain water, and, through this, lead to some improvement in farm production. But such soil and rain water conservation measures, carried out on both public and private lands, cannot yield a large enough incremental income over a reasonable period of time in order to qualify as private investment measures with the help of loan finance. In the interest of long term conservation of soil and water, the state has to undertake this task as a public investment. But this in its turn will provide wider basis for private investment in wells in these areas. Public and private investments are in this manner closely tied, the successful execution of the latter being dependent on the full and proper implementation of the former.

In the eastern Indian States, the problem is of a different order. Most upland regions have no assured water supply despite reasonable rainfall in the Kharif season. Design of flow irrigation systems to benefit the uplands deserves greater care and attention than appears to have been given so far by the public sector. As for the plains there, which contain some of the best agricultural lands, several factors, like floods and cyclones, excessive fragmentation of land, poor (or no) roads and communications, besides the socio-political hangover of the feudal system of land settlement till the middle of the fifties, are responsible for poor investment in the development of agriculture. Greater attention to flood control than has been bestowed in the past is needed. Despite good underground water potentiality, well (or now tube-well) irrigation was uncommon in these regions until now, and in many parts even today. Apart from floods, poor communications and fragmentation appear to be the major obstacles. Public investment in these, as well as interest or capital subsidy to farmers sinking shallow tubewells, and free dugwells by the public sector on every farmer's land provided the farmers agree to consolidation of holding, may break the age-old inertia of farmers in this type of private capital formation in agriculture [Rath, 1985(b)].

Enough has been said to indicate how successful private investment in the agriculturally undeveloped regions is crucially dependent on acts of public investment. Unfortunately, the Seventh Plan has put lesser resources on such types of public investment in agriculture than what was achieved during the Sixth Plan, not to mention what was originally planned. There appears to be a conviction that rural development needs IRDP type of programmes rather than rapid growth of agricultural production potential. This is why a substantial part of the planned private investment, and even a part of the reduced public investment, is on these schemes.

One cannot overemphasise the fact that development of agriculture is the first and major method of reducing rural poverty. The rural regions with high incidence of poverty are also regions with poor agricultural development; and regions which had rapid agricultural growth show lower incidence of poverty - indeed, they help the migrant labourer from the poor regions. A properly worked out public sector investment plan in irrigation, soil and water conservation and communication development can at the same time absorb large bodies of wage labour in the poverty stricken regions. Agricultural growth arising out of these acts of public investment can create increasing scope for private investment both in agriculture as well as in other self-employment generating enterprises advocated under IRDP.

Nor is there any reason to feel complacent about the performance of India's agriculture. The large buffer stock should not be misread: one must remember that it has been built over the years entirely through imports. Bad agricultural years in succession can see the usable parts of the stock vanish in no time. The growth rate in agricultural production between 1978-79 and 1983-84, two good years, was 2.13 per cent, and of income between these years was only about 1.7 per cent. With no higher, but somewhat lower level of real investment in agriculture, one cannot reasonably expect a much higher growth rate. In fact, the reduced investment of the Sixth Plan is likely to show its impact in the Seventh Plan period. And the still lower investment in the Seventh Plan can scarcely ensure a better performance in the following years.

The stagnant level of per capita income in agriculture and the unchanging rate of growth of agricultural production and income - a variant of the late Prof. Raj Krishna's Hindu rate of growth - needs a boost. Greater attention to agricultural investment is the minimum that is needed for the purpose, if the vast mass of Indians living in rural areas is not to be cheated by the urban middle and upper classes of the fruits of economic development.

FOOT NOTES

1. The data on Net Domestic Product in Agriculture at 1970-71 prices, and the Index of Gross Agricultural Production are presented in Table 1.

2. Refer to Table 2.

3. The actual total Plan outlay figures for any Plan period cannot be directly compared with the projected outlay figures in the Plan document, since the former are at prices of the respective years while the latter are at the pre-Plan year's prices. There is no way of recomputing these at common prices either. Comparison can be attempted only indirectly, and the procedure is explained below:

The Plan documents give sector-wise as well as total Planned Investment figures. This (gross) Investment figure is the Total Plan Outlay minus the Current Outlay during the Plan period. For the total Private and Public Sector and the national total, this (gross) Investment implies the same as the Gross Capital Formation calculated in the *National Accounts Statistics* published annually by the Central Statistical Organisation. Therefore, it is possible to compare the total Planned Investment in the Public (and Private) Sector in the Plan document with the actual Gross Capital Formation figures in the *National Accounts Statistics*. However, such a comparison is not possible for the individual sub-sections in the Plan document, like agriculture and allied activities. For, the *National Accounts* classify the Gross Capital Formation in the Public (and Private) Sector into sub-sectors (or, what is termed industry-of-use) by taking only direct investments into the sub-sector into account, while in the Plan document many indirect investments also feature in the sub-sectoral investments relating to agriculture, etc., in the Public Sector.

Therefore, in order to estimate the actual Investment in agriculture (in terms of the Plan document) during the Plan period, the following procedure is adopted :

Fourth Plan :- The share of agriculture and allied activities in the Public Sector Plan Outlay was 24 per cent while in the actual it was 23.3 per cent; that is, there was a short-fall of 2.92 per cent in this share. Assuming that there was an identical short-fall of 2.92 per cent in the share of agriculture in the actual total Public Sector Investment as against planned (which was 23.4 per cent, that is Rs.3,191 Crores out of Rs.13,655 Crores), the share of agriculture in actual total Public Sector Investment would be 22.71 per cent only, or Rs.2,863 Crores (Total actual Public Sector Investment, at 1968-69 prices, = Rs.12,603 Crores). This is 10.3 per cent less than what was planned in the Public Sector, while the short-fall in total Public Sector Investment was 5.3 per cent.

Fifth Plan :- Unlike the other Plans, the Fifth Plan document presents only total Plan Outlay figures for the Public Sector and its sub-sectors, but no Investments. However, the actual total Gross Capital Formation (i.e., gross investment) in the Public Sector during the Fifth Plan turned out to be equal to 96 per cent of the total planned Outlay in the Public Sector (both at comparable prices). Since Investment in the Public Sector in a Plan constitutes around 85 per cent of the total Plan Outlay, it can be safely inferred that the actual Investment in the Public Sector was somewhat higher than planned. And since the share of agriculture, etc., in the actual Plan Outlay was marginally higher than planned, it can also be inferred that the actual Investment in agriculture, etc., in the Public Sector was somewhat higher than intended.

Sixth Plan :- The share of agriculture, etc., in total Public Sector Outlay was 25.3 per cent in the Plan, and 23.9 per cent in actuality, a short-fall of about 5.5 per cent. Therefore, assuming the same percentage short-fall in the share of agriculture, etc., in the actual investment over planned investment in the Public Sector (20.7 per cent), we may say that agriculture's share in the actual Public Sector Investment in the Sixth Plan was 19.55 per cent. This comes to Rs.13,456 Crores (at 1979-80 prices). This was 22.52 per cent less than what was planned (Rs.17,367 Crores), while the short-fall in total Public Sector investment during the Sixth Plan was 8.5 per cent only. This implies a relatively significant diversion of plan investment from agriculture, etc., during the plan period.

4. Refer to Table 3 for Plan investments in the Public and Private Sectors in agriculture, etc., for the four Plans, Fourth to Seventh.

5. The detailed data are presented in Table 4.

6. Indeed, the rise in the implicit price index of gross capital formation in agriculture in the public sector during 1980-81 and 1984-85 has been much greater than the rise in the implicit price index for gross capital formation in the total public sector, the former being 78 per cent while the latter was 52 per cent only. This in itself deserves serious attention. For the implicit price indices, see Table 5.

7. These comments are based on Gross Fixed Capital Formation in Agriculture, calculated by deducting the inventories in agriculture from the gross capital formation figures, adjusted for errors and omissions, and presented in columns 16 to 21 and 28 to 33 in Table 4. Separate estimates for Gross Fixed Capital Formation in Agriculture, without adjustments for errors and omissions, are presented in columns 34 to 41 in Table 4. These show the Gross Fixed Capital Formation in Agriculture as a percentage of GDP in agriculture, both at 1970-71 prices, to be about one percentage point higher during the Sixth Plan than towards the latter part of the Fourth Plan, and only about 0.5 percentage point higher than during the Fifth Plan.

8. This is estimated by assuming the total loans for tractors to form the same percentage of all term loans to agriculture as in case of total NABARD refinance for agricultural loans by all banks.

9. Refer to Table 4, for the relevant data.

10. The data for the beginning of the seventies, not presented here, relate essentially to term loans by the cooperatives and Land Development Banks. Data from 1973-74 to 1984-85 are given in Table 6.

11. For detailed State-wise data on term loans to agriculture and allied activities, see Table 7.

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TABLE 1. INDIA'S NET DOMESTIC PRODUCT IN AGRICULTURE, AT 1970-71 PRICES, AND INDEX OF GROSS AGRICULTURAL PRODUCTION (1970-71=100)

Year	Net Domestic Product-Agr. (at 1970-71 Price) (Rs. Crores)	Index of Agricultural Production (Triennium ending 1969-70=100)	Year	Net Domestic Product-Agr. (at 1970-71 Prices) (Rs. Crore)	Index of Agricultural Production (Triennium ending 1969-70=100)
1950-51	9859	58.5	1968-69	14121	97.3
1951-52	10013	59.4	1969-70	15034	103.8
1952-53	10560	62.9	1970-71	16354	111.5
1953-54	11419	71.0	1971-72	16209	111.2
1954-55	11417	72.2	1972-73	15118	102.2
1955-56	11383	71.9	1973-74	16298	112.4
1956-57	11953	76.2	1974-75	15934	108.6
1957-58	11321	70.8	1975-76	18066	125.1
1958-59	12604	82.2	1976-77	16886	116.3
1959-60	12364	80.1	1977-78	19046	132.9
1960-61	13143	86.7	1978-79	19569	138.0
1961-62	13234	86.8	1979-80	16886	117.0
1962-63	12875	85.3	1980-81	19071	135.3
1963-64	13204	87.2	1981-82	19860	142.9
1964-65	14429	96.9	1982-83	19215	137.5
1965-66	12279	80.8	1983-84	21461	156.4
1966-67	12084	80.7	1984-85	21218	155.0
1967-68	14043	98.9	1985-86	n.a.	156.0

Sources: 1. NDP from National Accounts Statistics 1970-71 - 1984-85, January 1987, C.S.O., Government of India, Statement 6, and Coresponding Tables in earlier volumes.
2. Index of Agricultural Production from Indian Agriculture in Brief, 20th Edition, Directorate of Economics and Statistics, Ministry of Agriculture and Rural Development, Govt. of India, Table 1.72 upto 1981-82, and Economic Survey, 1986-87, Govt. of India, Appendix Table 1.4 from 1982-83 to 1985-86.

TABLE 2. PROJECTED PLAN OUTLAY AND ACTUAL OUTLAY ON AGRICULTURE AND RELATED FIELDS IN THE PUBLIC SECTOR IN THE SUCCESSIVE PLANS SINCE THE FOURTH FIVE YEAR PLAN.

(Rs.Crore)

	Planned Outlay				Actual Outlay		
	Fourth Plan	Fifth Plan	Sixth Plan	Seventh Plan	Fourth Plan	Fifth Plan	Sixth Plan
1. Agriculture & Allied Sectors.	2728 (17.2)	4643.59 (11.8)	5695.07 (5.8)	10573.62 (5.9)	2320.4 (14.7)	4864.9 (12.3)	6623.5 (6.1)
2. Rural Development.	-	-	5363.73 (5.5)	9074.22 (5.04)	-	-	6996.8 (6.4)
3. Special Area Programmes	-	-	1480.00 (1.5)	3144.69 (1.8)	-	-	1580.3 (1.4)
4. Irrigation and Flood Control	1087 (6.8)	3440.18 (8.8)	12160.03 (12.5)	16978.65 (9.4)	1354.1 (8.6)	3876.5 (9.8)	10929.9 (10.0)
Sub-Total	3815 (24.0)	8083.77 (20.6)	24698.83 (25.3)	39771.18 (22.1)	3674.5 (23.3)	8741.4 (22.2)	26130.5 (23.9)
5. Total Plan Outlay	15902 (100)	39287.49 (100)	97500 (100)	180000 (100)	15778.8 (100)	39426.2 (100)	109291.7 (100)

Note: The planned Outlay for the Fourth, Sixth and Seventh Five Year Plans are in 1968-69, 1979-80 and 1984-85 prices respectively. For the Fifth Plan they are as follows: for 1974-75 they are at current prices, and for the remaining four years, 1975-79, at 1975-76 prices. The outlay figures exclude inventories for the Fifth Plan.
Sources: Planned Outlay:-(i) Fourth Five Year Plan 1969-74,, Table 1, P.53; (ii) Fifth Five Year Plan, 1974-79, P.52; (iii) Sixth Five Year Plan, 1980-85, Annexure 4.3; (iv) Seventh Five Year Plan, 1985-90, Vol.I, Table 3.4(a)
Actual Outlay:-Economic Survey, 1986-87 (Govt. of India), Appendix Tables 2.4 - 2.6. Figures in brackets are percentages to total.

TABLE 3. INVESTMENT IN PUBLIC AND PRIVATE SECTORS IN AGRICULTURE AND THE TOTAL PLAN IN THE FOURTH, FIFTH, SIXTH AND SEVENTH FIVE YEAR PLANS

(Rs. Crore)

Item	4th Plan	5th Plan	6th Plan	7th Plan
1.Total Plan Investment	22635	N.A.	158710	322366
2.Total Plan Investment in Public Sector	13655	39287	84000	154218
3.Total Plan Investment in Private Sector	8980	N.A.	74710	168148
4.Total Planned Agricultural Investment	4791	N.A.	33468	61622
5.Total Planned Agricultural Investment in Public Sector	3191	8084	17367	27574
6.Total Planned Agricultural Investment in Private Sector	1600	N.A.	16101	30048
Actual Capital Formation: (at comparable Prices)				
7.Total Gross Domestic Capital Formation (GDCF) in India	33343	83407	145204	
8.GDCF in Agriculture	6407	15352	26689	
9.GDCF in Public Sector	12933	37787	68815	
10.GDCF in Public Sector in Agriculture	2094	4820	7458	
11.GDCF in Private Sector	20410	45620	76389	
12.GDCF in Agriculture in Private Sector	4313	10532	19231	
Actual Capital Formation: (at 1970-71 Prices)				
13.Total GDCF	37548	48252	63325	
14.Total GDCF in Agr.Sect.	7109	8939	11545	
15.Total GDCF in Pub.Sect.	12603	22066	30919	
16.GDCF in Agr.in Pub.Sect.	2053	2766	3177	
17.GDCF in Private Sector	24945	26186	32406	
18.GDCF in Private Sector in Agriculture	5056	6173	8368	
19.(2) as % of (1)	60.3	N.A.	52.9	47.8
20.(3) as % of (1)	39.7	N.A.	47.1	52.2
21.(4) as % of (1)	21.2	N.A.	21.1	19.1
22.(5) as % of (2)	23.4	20.6	20.7	17.9
23.(5) as % of (4)	66.6	N.A.	51.9	44.7
24.(6) as % of (3)	17.8	N.A.	21.6	17.9
25.(6) as % of (4)	33.4	N.A.	48.1	55.3
26.(7) as % of (1)	147.3	N.A.	91.5	
27.(9) as % of (7)	38.8	45.3	47.4	
28.(9) as % of (2)	94.7	96.2	81.9	
29.(8) as % of (7)	19.2	18.4	18.4	
30.(10) as % of (9)	16.2	12.8	10.8	
31.(10) as % of (8)	32.7	31.4	27.9	
32.(11) as % of (7)	61.2	54.7	52.6	
33.(11) as % of (3)	227.3	N.A.	102.2	
34.(12) as % of (11)	21.1	23.1	25.2	
35.(12) as % of (8)	67.3	68.6	72.1	
36.(12) AS % of (6)	269.6	NA	119.4	
37.(15) as % of (13)	33.6	45.7	48.8	
38.(17) as % of (13)	66.4	44.3	51.2	
39.(14) as % of (13)	18.9	18.5	18.2	
40.(16) as % of (15)	16.3	12.5	10.3	
41.(16) as % of (14)	28.9	30.9	27.5	
42.(18) as % of (17)	20.3	23.6	25.8	
43.(18) as % of (14)	71.1	69.1	72.5	

Source: The figures in rows 1 to 6 are from the respective Plan documents. The data for the Fifth Plan refer to total outlays and not investment. The data in rows 13 to 18 are taken from the different volumes of the National Accounts Statistics (C.S.O.). The figures for 1969-70 for the Public Sector have been guessed by us. The data for agriculture include fishing forestry and logging as well. The data in row 7 to 12 are calculated by using the implicit Price Indices in the National Accounts Statistics.

TABLE 4. GROSS DOMESTIC PRODUCT AND DOMESTIC CAPITAL FORMATION IN AGRICULTURE, 1960-85

(Rs. Crore)

Year	Gross Domestic Product in Agriculture		Gross Domestic Capital Formation in Agriculture											
			Total		Public Sector		Private Sector							
	at Current Prices	at 70-71 Prices	at Current Prices	at 70-71 Prices	at Current Prices	at 70-71 Prices	at Current Prices	at 70-71 Prices	(4) as % of (2)	(5) as % of (3)	(6) as % of (2)	(7) as % of (3)	(8) as % of (2)	(9) as % of (3)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
1960-61	6751	13395	395	736					5.9	5.5				
1961-62	6966	13500	376	660					5.4	4.9				
1962-63	7111	13169	428	766					6.0	5.8				
1963-64	8235	13500	480	791					5.8	5.9				
1964-65	10091	14753	583	927					5.8	6.3				
1965-66	9798	12643	721	1104					7.4	8.7				
1966-67	11713	12474	799	951					6.8	7.6				
1967-68	15542	14441	838	955					5.4	6.6				
1968-69	14146	14539	949	1049					6.7	7.2				
1969-70	15539	15477	1118	1179					7.2	7.6				
1970-71	16778	16778	1298	1298	329	329	969	969	7.7	7.7	2.0	2.0	5.7	5.7
1971-72	17380	16661	1396	1323	382	349	1014	974	8.0	7.9	2.2	2.1	5.8	5.8
1972-73	19169	15601	1648	1444	505	419	1143	1025	8.6	9.3	2.7	2.7	5.9	6.6
1973-74	25879	16805	2034	1519	567	416	1467	1103	7.9	9.0	2.2	2.5	5.7	6.5
1974-75	28029	16462	1945	1230	591	358	1354	872	6.9	7.5	2.0	2.2	4.9	5.3
1975-76	26645	18613	2119	1217	718	408	1401	809	8.0	6.5	2.7	2.2	5.3	4.3
1976-77	27258	17464	3261	1795	1013	561	2248	1234	12.0	10.3	3.7	3.2	8.3	7.1
1977-78	31372	19651	3561	1883	1206	644	2355	1239	11.3	9.6	3.8	3.3	7.5	6.3
1978-79	32095	20218	4782	2394	1391	683	3391	1711	14.9	11.8	4.3	3.4	10.6	8.4
1979-80	32990	17578	4717	2056	1618	690	3099	1366	14.3	11.7	4.9	3.9	9.4	7.8
1980-81	40838	19804	5762	2274	1845	690	3917	1584	14.1	11.5	4.5	3.5	9.6	8.0
1981-82	44261	20654	5967	2134	1964	625	4003	1509	13.5	10.3	4.4	3.0	9.1	7.3
1982-83	46562	20032	6239	2068	2143	566	4096	1502	13.4	10.3	4.6	2.8	8.8	7.5
1983-84	58908	22337	7480	2232	2296	539	5184	1693	12.7	10.0	3.9	2.4	8.8	7.6
1984-85	60147	22159	8529	2370	2547	536	5982	1834	14.2	10.7	4.2	2.4	10.0	8.3

(Contd.)

TABLE 4. GROSS DOMESTIC PRODUCT AND DOMESTIC CAPITAL FORMATION IN AGRICULTURE, 1960-85 (Contd.)

Year	Changes in Inventory						Gross Domestic Fixed Capital Formation in Agriculture*					
	Total		Public Sector		Private Sector		Total		Public Sector		Private Sector	
	at Current Prices	at 70-71 Prices	at Current Prices	at 70-71 Prices	at Current Prices	at 70-71 Prices	at Current Prices	at 70-71 Prices	at Current Prices	at 70-71 Prices	at Current Prices	at 70-71 Prices
(1)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)
1960-61	18	33					377	703				
1961-62	1	2					375	658				
1962-63	10	17					418	749				
1963-64	15	24					465	767				
1964-65	9	19					574	908				
1965-66	14	19					707	1085				
1966-67	13	18					786	933				
1967-68	6	7					832	948				
1968-69	54	53					895	996				
1969-70	49	46					1069	1133				
1970-71	52	52	2	2	50	50	1246	1246	327	327	919	919
1971-72	64	65	8	7	56	58	1332	1258	374	342	958	916
1972-73	109	107	-19	-16	128	123	1539	1337	524	435	1015	902
1973-74	164	122	8	6	156	116	1870	1397	559	410	1311	987
1974-75	173	110	32	19	141	91	1772	1120	559	339	1213	781
1975-76	299	205	26	15	173	190	1820	1012	692	397	1128	615
1976-77	416	249	-4	-2	420	251	2845	1546	1017	563	1828	983
1977-78	232	130	16	9	216	121	3329	1753	1190	635	2139	1118
1978-79	720	415	45	22	675	397	4062	1979	1346	661	2716	1318
1979-80	651	337	44	19	607	318	4066	1719	1574	671	2492	1048
1980-81	830	385	24	9	806	376	4932	1889	1821	681	3111	1208
1981-82	1003	416	78	25	925	391	4964	1718	1886	600	3078	1118
1982-83	892	356	36	10	856	346	5347	1712	2107	556	3240	1156
1983-84	1019	348	40	9	981	339	6461	1884	2256	530	4205	1354
1984-85	1730	519	68	14	1662	505	6799	1851	2479	522	4320	1329

(Contd.)

TABLE 4. GROSS DOMESTIC PRODUCT AND DOMESTIC CAPITAL FORMATION IN AGRICULTURE, 1960-85 (Concld.)

							Gross Domestic Fixed Capital Formation in Agriculture**							
							Public Sector		Private Sector					
(1)	(22) as % of (2) (28)	(23) as % of (3) (29)	(24) as % of (2) (30)	(25) as % of (3) (31)	(26) as % of (2) (32)	(27) as % of (3) (33)	at Current Prices (34)	at 70-71 Prices (35)	at Current Prices (36)	at 70-71 Prices (37)	(34) as % of (2) (38)	(35) as % of (3) (39)	(36) as % of (2) (40)	(37) as % of (3) (41)
1960-61	5.6	5.2							406	692			6.0	5.2
1961-62	5.4	4.9							393	646			5.6	4.8
1962-63	5.9	5.7							438	702			6.2	5.3
1963-64	5.6	5.7							480	749			5.8	5.5
1964-65	5.7	6.2							566	834			5.6	5.7
1965-66	7.2	8.6							657	949			6.7	7.5
1966-67	6.7	7.5							747	893			6.4	7.2
1967-68	5.4	6.6							882	991			5.7	6.9
1968-69	6.3	6.9							913	1009			6.5	6.9
1969-70	6.9	7.3							1047	1112			6.7	7.2
1970-71	7.4	7.4	2.0	2.0	5.4	5.4	775	775	1102	1102	4.6	4.6	6.6	6.6
1971-72	7.7	7.6	2.2	2.1	5.5	5.5	874	829	1248	1171	5.0	4.9	7.2	7.0
1972-73	8.0	8.6	2.7	2.8	5.3	5.8	901	804	1425	1239	4.7	5.1	7.4	7.9
1973-74	7.2	8.3	2.2	2.4	5.0	5.9	1074	811	1633	1221	4.1	4.9	6.3	7.3
1974-75	6.3	6.8	2.0	2.1	4.3	4.7	1254	800	1813	1139	4.5	4.8	6.5	6.9
1975-76	6.8	5.4	2.6	2.1	4.2	3.3	1411	800	2103	1197	5.3	4.3	7.9	6.4
1976-77	10.4	8.8	3.7	3.2	6.7	5.6	1717	959	2734	1522	6.3	5.5	10.0	8.7
1977-78	10.6	8.9	3.8	3.2	6.8	5.7	1777	951	2967	1586	5.7	4.9	9.5	8.1
1978-79	12.7	9.8	4.2	3.3	8.5	6.5	2177	1097	3523	1758	6.8	5.4	11.0	8.7
1979-80	12.3	9.8	4.7	3.8	7.6	6.0	2566	1130	4140	1801	7.8	6.4	12.5	10.2
1980-81	12.1	9.5	4.5	3.4	7.6	6.1	3056	1201	4877	1882	7.5	6.1	11.9	9.5
1981-82	11.2	8.3	4.2	2.9	7.0	5.4	3502	1221	5388	1821	7.9	5.9	12.2	8.8
1982-83	11.5	8.5	4.5	2.7	7.0	5.8	3884	1258	5991	1814	8.3	6.4	12.9	9.1
1983-84	10.9	8.4	3.8	2.3	7.1	6.1	4879	1456	7135	1986	8.3	6.6	12.1	8.9
1984-85	11.3	8.4	4.1	2.4	7.2	6.0	5646	1578	8125	2100	9.4	7.1	13.5	9.5

Source: Taken from different volumes of the National Accounts Statistics (C.S.O.) except for Public Sector inventories, at current prices, made available prices, using the same implict price index as for total GDCF in Agriculture in the Public Sector.

* Adjusted for errors and omissions, For Gross Domestic Fixed Capital Formation, the inventories have been deducted from GDCF (with adjustments for errors and omissions).

** Without adjustment for errors and omissions.

TABLE 5. IMPLICIT PRICE INDICES

Year	GDP in Agriculture	GDCF in Agriculture	GDCF in Public Sector in Agriculture	GDCF in Private Sector in Agriculture
(1)	(2)	(3)	(4)	(5)
1970-71	100.0	100.0	100.0	100.0
1971-72	104.3	105.5	109.5	104.1
1972-73	122.9	114.1	120.5	111.5
1973-74	154.0	133.9	136.3	133.0
1974-75	170.3	158.1	165.1	155.3
1975-76	143.1	174.1	176.0	173.2
1976-77	156.1	181.7	180.6	182.2
1977-78	159.6	189.1	187.3	190.1
1978-79	158.7	199.7	203.7	198.2
1979-80	187.7	229.4	234.5	226.9
1980-81	206.2	253.4	267.4	247.3
1981-82	214.3	279.6	314.2	265.3
1982-83	232.4	301.7	378.6	272.7
1983-84	263.7	335.1	426.0	306.2
1984-85	271.4	359.9	475.2	326.2

Source: Data in Table 4 at current and at 1970-71 prices

TABLE 6. TOTAL TERM LOANS TO AGRICULTURE AND ALLIED ACTIVITIES AS PERCENT OF GROSS FIXED CAPITAL FORMATION IN AGRICULTURE AND FISHERIES IN THE PRIVATE SECTOR.

Year	Gross Fixed Capital Formation in Agriculture & Fisheries in Private Sector (Rs. Crore)	Total Term Loans to Agriculture & allied Activities by Financial Institutions (Rs. Crore)	(3) as Per cent of (2)
(1)	(2)	(3)	(4)
1973-74	1378	437.77	31.8
1974-75	1283	427.15	33.3
1975-76	1199	512.90	42.8
1976-77	1924	680.58	35.4
1977-78	2255	680.64	30.2
1978-79	2817	872.09	31.0
1979-80	2593	1109.85	42.8
1980-81	3242	1412.66	43.6
1981-82	3217	1651.98	51.4
1982-83	3396	1593.14	46.9
1983-84	4401	1908.94	43.4
1984-85	4547	2435.42	53.6

Source: Gross Fixed Capital Formation figures taken from col. 26 of Table 4 and GDCF in Fishing added to it. Total Term Loans to Agriculture and allied activities (including animal husbandry and fishing) obtained from the National Bank for Agriculture & Rural Development (NABARD).

Table 7. PERCENTAGE SHARES OF DIFFERENT STATES IN THE MEDIUM AND LONG TERM LOANS TO AGRICULTURE AND ALLIED ACTIVITIES BY (1) COOPERATIVE AND LAND DEVELOPMENT BANKS, (2) COMMERCIAL BANKS INCLUDING RRBs, AND (3) TOTAL INSTITUTIONAL TERM LOANS

No. STATES	1973-74			1974-75			1975-76			1976-77			1977-78			1978-79		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
1. Haryana	4.8	5.0	4.9	5.3	6.4	5.6	5.1	4.9	5.0	5.3	7.2	6.0	6.7	7.3	6.9	6.8	7.5	7.1
2. Himachal Pradesh	1.2	0.2	0.8	1.0	0.5	0.9	1.1	0.5	0.9	0.8	0.7	0.8	0.9	0.4	0.7	1.1	0.5	0.8
3. Jammu & Kashmir	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.3	0.1	0.1	0.1	0.1	0.3	0.2	0.3	0.2	0.4	0.3
4. Punjab	7.6	6.5	7.1	6.2	5.7	6.0	5.9	8.6	6.9	7.0	9.5	7.9	4.9	10.5	7.2	5.3	10.8	8.1
5. Rajasthan	2.9	7.0	4.8	3.1	5.7	3.9	2.5	5.1	3.5	3.2	5.1	3.9	5.2	6.0	5.5	4.7	6.7	5.7
6. Assam	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.2	0.5	0.3	0.3	0.2	0.3	0.2	0.2	0.2
7. Bihar	6.1	5.1	5.6	5.0	3.3	4.5	6.3	4.1	5.5	4.7	5.6	5.1	2.1	4.9	3.3	2.1	4.8	3.4
8. Orissa	1.9	0.5	1.3	2.9	1.0	2.4	2.2	1.1	1.8	4.1	1.5	3.2	3.0	2.1	2.6	3.9	2.4	3.2
9. West Bengal	0.6	4.5	2.4	0.8	2.0	1.2	1.5	2.8	2.0	2.0	1.5	1.8	3.0	4.1	3.5	5.4	3.2	4.3
10. Madhya Pradesh	7.4	6.5	7.0	8.1	7.9	8.0	6.2	7.8	6.8	7.5	7.6	7.5	4.2	7.2	5.4	5.7	5.1	5.4
11. Uttar Pradesh	11.5	14.2	12.8	11.4	13.8	12.2	10.7	11.3	10.9	12.0	13.2	12.4	15.5	15.5	15.5	13.3	15.4	14.3
12. Gujarat	13.5	11.3	12.4	24.8	5.3	19.0	10.0	4.6	8.0	4.5	4.5	4.5	9.2	5.4	7.6	6.3	6.1	6.2
13. Maharashtra	11.2	19.3	15.1	7.5	12.6	9.0	17.2	10.0	14.5	9.5	9.2	9.4	7.7	9.0	8.2	10.0	8.3	9.1
14. Andhra Pradesh	7.1	4.5	5.8	5.4	8.8	6.4	12.4	7.6	10.6	16.5	7.0	12.9	18.7	6.0	13.5	13.5	7.2	10.4
15. Karnataka	9.3	7.3	8.4	7.2	13.1	9.0	9.5	15.5	11.7	11.7	13.4	12.4	6.1	9.5	7.5	4.4	10.4	7.4
16. Kerala	3.8	1.6	2.7	3.4	5.6	4.0	3.2	6.0	4.3	4.9	4.2	4.6	7.0	3.6	5.6	10.1	3.6	7.3
17. Tamil Nadu	9.4	5.4	7.5	7.5	6.1	7.0	5.8	8.0	6.6	5.9	6.4	6.1	5.0	5.9	5.4	5.9	5.8	5.9
18. Others	1.5	0.9	1.2	0.2	1.8	0.6	0.2	1.7	0.8	0.1	2.8	1.1	0.2	2.2	1.0	0.1	1.6	0.9
19. India	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total (Rs.Cr.)	229.23	208.54	437.77	298.99	128.16	427.15	320.51	192.39	512.90	426.71	253.87	680.58	399.34	281.30	680.64	437.11	434.98	872.09

Table 7. PERCENTAGE SHARES OF DIFFERENT STATES IN THE MEDIUM AND LONG TERM LOANS TO AGRICULTURE AND ALLIED ACTIVITIES BY (1) COOPERATIVE AND LAND DEVELOPMENT BANKS, (2) COMMERCIAL BANKS INCLUDING RRBs, AND (3) TOTAL INSTITUTIONAL TERM LOANS (Contd.)

No STATES	1979-80			1980-81			1981-82			1982-83			1983-84			1984-85		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
1. Haryana	6.6	7.7	7.1	6.3	6.5	6.4	6.3	5.4	5.8	5.2	5.2	5.2	6.1	5.9	6.0	5.7	5.1	5.3
2. H.P.	0.7	0.8	0.8	1.0	0.6	0.8	1.0	0.8	0.9	0.8	0.7	0.8	1.1	0.6	0.8	1.2	0.5	0.8
3. J & K	0.2	0.5	0.3	0.2	0.7	0.4	0.2	0.8	0.6	0.2	0.8	0.5	0.2	0.8	0.5	0.2	0.7	0.5
4. Punjab	5.7	14.2	9.7	6.6	14.7	11.2	7.0	11.6	9.7	5.9	10.3	8.1	7.7	11.8	10.1	7.4	8.3	8.0
5. Rajasthan	5.9	5.6	5.7	8.2	5.6	6.7	9.0	5.5	6.9	8.4	6.7	7.6	3.8	6.3	5.3	5.9	5.4	5.6
6. Assam	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.2	0.4	0.3	0.3	0.6	0.5	0.3	0.5	0.4
7. Bihar	2.1	4.3	3.1	2.7	3.7	3.3	4.6	4.5	4.6	2.8	5.7	4.2	2.0	4.1	3.3	2.3	5.7	4.5
8. Orissa	5.7	1.5	3.7	3.7	5.1	4.6	3.0	3.2	3.1	3.1	2.6	2.8	3.0	2.4	2.7	1.9	3.3	2.8
9. W.B.	1.8	1.9	1.9	1.5	1.9	1.7	1.5	1.9	1.8	0.9	1.8	1.4	2.2	2.0	2.0	1.0	1.7	1.4
10. M.P.	10.1	7.0	8.6	4.8	6.2	5.6	4.4	5.1	4.8	4.8	6.4	5.6	6.1	2.9	4.2	5.4	5.9	5.7
11. U.P.	21.8	14.6	18.4	13.1	14.1	13.7	13.3	14.6	14.0	11.8	14.0	12.9	12.4	10.8	11.5	12.4	12.4	12.4
12. Gujarat	3.5	6.7	5.0	2.9	5.6	4.5	10.1	4.5	6.8	12.0	6.3	9.2	9.2	0.4	7.5	4.5	6.0	5.5
13. Maha.	9.2	9.0	9.1	14.4	7.0	10.1	11.4	8.5	9.7	12.6	7.4	10.1	13.7	8.8	10.8	15.2	8.8	11.0
14. A.P.	11.2	6.5	9.0	16.6	6.6	10.8	11.5	6.6	8.6	12.4	7.6	10.0	10.4	8.5	9.3	11.0	8.2	9.2
15. Karnataka	3.9	7.9	5.8	5.9	7.2	6.6	4.5	7.7	6.4	5.6	9.8	7.6	7.2	10.8	9.3	8.2	11.3	10.2
16. Kerala	9.1	3.6	6.5	10.4	4.7	7.2	9.0	4.3	6.2	9.2	4.1	6.7	11.3	3.6	6.8	10.5	3.0	5.6
17. T.N.	2.4	6.4	4.3	1.4	8.5	5.5	2.8	13.6	9.1	3.9	8.2	6.0	3.1	8.9	6.5	6.7	10.9	9.5
18. Others	0.1	1.7	0.9	0.2	1.2	0.8	0.2	1.1	0.7	0.2	1.9	1.0	0.2	4.8	2.9	0.2	2.3	1.6
19. India	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total (Rs.Cr.)	589.84	520.01	1109.85	600.39	812.27	1412.66	683.00	968.98	1651.98	808.78	784.36	1593.14	780.20	1128.74	1908.94	830.95	1604.47	2435.42

Table 7A. PERCENTAGE SHARES OF DIFFERENT STATES IN THE MEDIUM AND LONG TERM LOANS TO AGRICULTURE AND ALLIED ACTIVITIES BY (2.1) COMMERCIAL BANKS, AND (2.2) RRBs

No. STATES	1980-81 (2.1)	(2.2)	1981-82 (2.1)	(2.2)	1982-83 (2.1)	(2.2)	1983-84 (2.1)	(2.2)	1984-85 (2.1)	(2.2)
1. Haryana	6.7	4.2	5.7	2.6	5.5	3.5	6.6	1.6	5.2	4.1
2. Himachal Pradesh	0.6	1.1	0.7	1.7	0.6	1.3	0.5	1.3	0.4	1.2
3. Jammu & Kashmir	0.5	1.5	0.7	2.0	0.4	2.8	0.4	3.0	0.4	3.0
4. Punjab	16.0	-	13.0	-	12.3	-	13.4	0.1	9.3	0.4
5. Rajasthan	4.9	12.9	4.6	13.2	6.0	10.2	5.9	9.6	4.9	9.3
6. Assam	0.1	0.5	0.2	1.2	0.3	0.8	0.5	1.2	0.5	0.5
7. Bihar	2.5	17.8	2.9	19.5	3.0	20.4	2.2	17.3	4.5	15.3
8. Orissa	5.3	3.6	3.0	5.7	1.7	7.2	2.0	5.0	3.4	2.6
9. West Bengal	1.8	2.9	1.8	3.0	1.7	2.3	1.6	4.2	1.6	2.1
10. Madhya Pradesh	6.3	5.1	5.1	5.3	6.4	6.0	2.3	7.3	5.2	11.5
11. Uttar Pradesh	13.7	18.1	13.8	21.2	12.2	23.4	8.9	23.8	10.8	26.1
12. Gujarat	6.0	0.5	4.9	0.6	7.3	0.7	7.1	1.5	6.4	2.1
13. Maharashtra	7.6	-	9.4	-	8.9	-	10.1	0.3	9.6	2.4
14. Andhra Pradesh	6.0	12.7	6.3	9.3	7.8	7.0	8.7	7.1	8.3	7.2
15. Karnataka	7.2	8.3	7.7	7.7	10.1	8.4	10.7	11.9	11.5	9.6
16. Kerala	4.8	4.6	4.4	3.4	4.2	3.6	3.8	2.2	3.1	2.5
17. Tamil Nadu	8.9	4.2	14.8	2.4	9.5	1.6	9.9	1.8	12.3	-
18. Others	1.1	2.0	1.0	1.2	2.1	0.8	5.4	0.8	2.6	0.1
19. India	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total (Rs.Cr.)	744.83	67.44	872.50	96.48	659.92	124.44	985.77	142.97	1426.12	178.35

SOME ASPECTS OF GROWTH OF BANKING IN INDIA

S.P. Gothoskar

Nationalisation of 14 major commercial banks in 1969 marked the beginning of a new phase of growth and development of banking in India. This study is an attempt to present differentials in profiles of pre- and post-nationalisation branches of banks in India, as emerging at the end of June 1980 and June 1985. The magnitudes involved were large and qualitative changes profound.

At the end of 1949, the number of commercial bank branches in India was only 4,263 of which rural branches numbered about 700. Twenty years later, at the end of June 1969, the number of branches had increased to 8,262, of which 1,832, that is, 22.2 per cent were in rural areas. But the share of the rural branches in deposits and credit was still only 2 to 3 per cent. Metropolitan cities contributed about 50 per cent of the bank deposits and shared more than two-thirds of bank credit. There was transfer of funds, mostly from semi-urban areas to metropolitan cities.

In July 1969, fourteen major commercial banks were nationalised. Since then, there has occurred a large spatial expansion. Thus, from a coverage of a mere 1,692 rural centres at the end of June 1970, the network was spread over 11,968 rural centres at the end of June 1980 and 26,569 centres by the end of June 1985 (Table 1). Coverage of semi-urban centres was also extended from 2,407 in June 1970 to 3,940 at the end of June 1985[1]. Roughly, rural centres had one branch each while semi-urban centres had about 2-3 branches each. The number of urban and metropolitan centres remained unaltered during 1970-85, though the number of branches increased.

TABLE 1. NUMBER OF CENTRES WITH BANK BRANCHES

Area	No. of centres and branches at the end of							
	June 1970		June 1975		June 1980		June 1985	
	Centres	Branches	Centres	Branches	Centres	Branches	Centres	Branches
Rural	1,692	1,790	4,791	5,108	11,968	12,889	26,569	28,195
Semi-urban	2,407	4,104	3,040	6,447	3,497	9,199	3,940	10,971
Urban	217	2,358	217	4,002	217	6,057	217	7,595
Metropolitan	10	1,718	10	3,026	10	4,324	10	5,205
Total	4,326	9,970	8,058	18,583	15,692	32,469	30,736	51,966

In this article, we shall examine some aspects of this growth, by considering branch level data, classified by the age of the branch and the area of its location. In Section I, we shall analyse the pattern of deposits. In Section II, we shall analyse the pattern and size of bank credit and the credit-deposit ratio. Results of a sample survey on profitability of bank branches are given in Section III.

The source of data for Sections I and II is the Basic Statistical Returns (BSR) submitted by the banks[2]. The data relate to public sector banks including regional rural banks, and other scheduled commercial banks. The Basic Statistical

(Late) S.P. Gothoskar was the Principal Adviser, Department of Statistical Analysis and Computer Services, Reserve Bank of India. Unfortunately, on April 28, 1989, he died suddenly of a heart-attack while in London. In the circumstance, the editing has been done without the advantage of consulting the author. We deeply regret the loss of a valued colleague.

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Returns (BSR) were modified in 1983 and uniform branch-wise data are not available on all the items, as a time series. Our study for deposit and credit growth relates to about 28,600 branches while the detailed credit profiles relate to about 27,000 branches. To ensure consistency, the credit-deposit ratio analysis is based on a common set of branches, covering about 95 per cent of bank deposits and credit in June 1980. We have generally presented data in the form of percentages and ratios as the absolute figures are easily available in banking statistics.

For the purpose of our study, bank branches have been grouped into three age groups, namely, A : established prior to June 1970, B : established during July 1970 to June 1975 and C : established during July 1975 to June 1980. In each age-group, branches are further classified according to their location, namely, rural, semi-urban, urban and metropolitan areas, as defined in the BSR system. Besides, the cities of Bombay, Delhi, Calcutta and Madras are treated separately. The branch group performance is then analysed for assessing the changes in their profiles during the period 1980-1985.

As will appear from Table 1, during 1970-1980, 22,499 new branches were opened and the banking network was extended to 11,366 new centres which were mostly in rural and semi-urban areas. Table 2 gives the details of the number of unbanked centres where bank branches were opened since 1970 and the number of bank branches functioning in them at the end of June 1975, 1980, and 1985.

TABLE 2. NUMBER OF BRANCHES OPENED DURING 1970-1985 IN UNBANKED CENTRES

Area	Period	No.of unbanked centres covered	No.of branches functioning		
			End June 1975	End June 1980	End June 1985
Rural	1970-75	3,098	3,147	3,368	3,591
	1975-80	7,172	..	7,290	7,477
	1980-85	14,601	..	..	14,683
Semi-Urban	1970-75	633	686	842	963
	1975-80	457	..	488	534
	1980-85	443	..	..	465

SECTION I

This Section deals with deposit profiles of bank branches in June 1980 and June 1985, classified by area of location and age group of bank branches. One of the questions which we would like to examine is how far the aggregate bank deposit growth rate has been accelerated by the emergence of new branches in the post-nationalisation period and whether the growth rate in deposits of pre-1970 branches, i.e. the A Group, has been stunted due to emergence of new branches (i.e. B and C Groups) after 1970. Besides examining the average amount of deposits per branch and their growth during 1980-85, the composition of aggregate deposits in terms of current, savings, and term deposits is also studied. Further, the average amount of deposit per account and contributions of branches in different area - groups to total deposits are also given. As the scope of our analysis is restricted to branches established upto June 1980 only, the ratios/patterns for June 1985 given in this article might differ from the published data for June 1985 which are inclusive of branches established after June 1980.

One of the aspects of our study is to examine groupwise contributions in deposit mobilisation and to assess whether the new branches had stunted the growth of old branches and how far the new branches have succeeded in exploiting additionally the total deposit potential in the economic system. For this purpose, we require branchwise data on deposits, as a time series. These data are available only for the period June 1980 onwards.

Table 3 shows growth in deposits during 1980-85 according to branch groups in different areas. As the Group C branches started with a low deposit base, the percentage increases recorded by them in all the areas were more than double the increases recorded for branches in Group A. The growth in respective age groups was almost the same in the case of semi-urban, urban and metropolitan areas. Despite the massive branch expansion in rural areas resulting in stiff competition to Group A branches, the Group A branches in rural areas recorded a substantially higher growth in deposits as compared with Group A branches in other areas.

TABLE 3. DEPOSIT GROWTH-RATES DURING 1980-85 ACCORDING TO BRANCH GROUPS

Area/City	Percentage increase in total deposits during 1980-85			
	Group A	Group B	Group C	Total
Rural	114.8	154.3	268.6	162.7
Semi-urban	94.2	138.0	220.7	116.1
Urban	87.4	139.6	210.2	111.6
Metropolitan	83.7	139.4	201.7	105.0
Bombay	90.8	144.8	232.2	107.4
Delhi	92.6	147.7	204.4	116.7
Calcutta	58.4	130.0	177.5	84.2
Madras	76.9	149.2	196.8	99.1

Among the four metropolitan cities, branches in Delhi recorded the highest growth while branches in Calcutta had the lowest growth. Madras city recorded higher growth in all the groups as compared with branches in Calcutta city. The C Group of branches in Bombay city recorded the highest growth in all the four metropolitan cities.

In order to explain the growth of bank deposits, Rangarajan [Rangarajan, Pp. 6-8] had used national income at current prices and the number of bank branches as explanatory variables. While fitting a regression equation over a long time period, a dummy variable can be used to capture the change in marginal propensity due to changes in qualitative and other factors not used as explanatory variables in a regression equation. Rangarajan regressed total deposits (TD) on national income at current prices (Y) and a dummy variable D. Using data for the period 1951-52 to 1975-76 and giving value '1' to the dummy variable from 1969-70 onwards and '0' for the earlier years, the estimated regression equation was

$$TD = -968.151 + 0.185Y + 0.037\ YD$$
$$(11.286)\ \ (3.11)$$

with $\overline{R}^2 = 0.983$. The equation showed that the marginal deposit income ratio had risen from 0.185 before 1969-70 to 0.222 thereafter.

Co-efficient of the dummy variable used in the above regression equation has captured the effect of post-nationalisation developments and explains the deposit growth. This technique can further be modified [Johnston, Pp. 225-233] to capture simultaneously the changes in the intercept and the slope of the regression line, by changing the equation from

$$TD = a_o\ b_1Y + b_2DY \text{ to}$$
$$TD = a_o + a_1D + b_1Y + b_2DY$$

We estimated this equation by using data for the period 1950-1985 and defining the dummy variable as D = 1 from 1970-71 onwards and D = 0, otherwise. But with longer period, Y and DY became highly correlated, when D was defined as unity over a long period. Branch expansion impact was positive but insignificant. Because of the problem of collinearity between Y and DY, the coefficient of DY was not stable in different equations.

Hence the total period of 1950 to 1985 was split up into two sub-periods of 1950 to 1969 and 1970 to 1985 and separate regression equations were fitted, which gave the following results.

I. Period 1950-1969

TD = a + bY where TD was aggregate deposits and Y, the national income at current prices.

The estimated equation is

$$TD = -448.15^{**} + 0.17^{**}Y$$
$$(4.9)\ \ (32.1)$$

S.E.E. = 170.13 $\overline{R}^2 = 0.98$

D.W. = 1.30 Elasticity = 1.20

II. A. Period 1970-85
(without dummy variable)

$$TD = -14367.83^{**} + 0.52^{**}Y$$
$$(10.6)\ \ (40.2)$$

S.E.E. = 2520.35 $\overline{R}^2 = 0.99$

D.W. = 1.12 Elasticity = 1.43

II. B. Period 1970-85
(with dummy variable)

Dummy D = 1, for 1980-81 onwards
= 0, otherwise.

$$TD = -12087.4^{**} + 0.48^{**}Y + 0.03\ DY$$
$$(12.3)\ \ (1.2)$$

S.E.E. = 2490.32 $\overline{R}^2 = 0.99$

In all the equations, the figures in brackets are the 't' values. The coefficients were highly significant except for the dummy variable. The estimated equations show that the marginal propensity has gone up from 0.17 in the pre-nationalisation period to 0.51 in the post-nationalisation period.

The distributions of bank branches in Groups A, B and C, according to deposit amount, show significant shifts towards large sized branches. These distributions for the rural, semi-urban, urban and metropolitan areas, for the periods June 1980 and June 1985 and the average deposits per branch are given in Table 4. During 1980-85 the average deposit amount per branch had more than doubled in all the areas. The disparity between rural branch and metropolitan branch, which was higher than the ratio of 1:11 in June 1980 had got reduced to the ratio of 1:9 in June 1985.

In the case of rural areas, in June 1980, 51.5 per cent of A Group branches, 22.4 per cent of B Group and only 3.1 per cent of C Group had deposits of more than Rs.50 lakhs. By June 1985, these percentages had moved to 86.6, 65.5 and 29.5 respectively. In the C Group, the percentage of bank branches with deposits of less than Rs.10 lakh had got reduced from about 59.9 per cent to 10.4 per cent.

TABLE 4. DISTRIBUTION OF BANK BRANCHES ACCORDING TO SIZE OF DEPOSITS

(Per cent)

Size of Deposits (Rs.lakh)	Rural						Semi-Urban					
	June 1980			June 1985			June 1980			June 1985		
	A	B	C	A	B	C	A	B	C	A	B	C
Less than 10	1.7	10.4	59.9	0.2	0.7	10.4	0.4	1.6	16.2	0.3	0.3	1.5
10 - 20	10.4	25.5	22.6	0.7	4.1	21.2	2.0	8.9	19.9	0.2	0.8	3.7
20 - 30	12.7	18.9	8.4	2.5	9.0	17.1	3.5	12.1	17.8	0.5	2.1	5.0
30 - 40	13.1	13.4	3.9	5.2	10.5	12.5	4.9	11.9	14.4	1.3	3.2	6.3
40 - 50	10.6	9.4	2.1	4.8	10.2	9.3	6.1	11.3	9.4	1.6	3.4	6.3
50 - 100	32.4	18.0	2.6	30.9	33.3	20.2	29.6	34.8	18.1	11.5	25.7	32.9
More than 100	19.1	4.4	0.5	55.7	32.2	9.3	53.5	19.4	4.2	84.6	64.5	44.3
Average deposit per branch (Rs. lakh)	69.1	36.4	12.5	148.4	92.4	46.1	146.9	69.9	35.9	285.3	166.3	115.0
Average Deposit per branch (A+B+C) (Rs. lakh)		29.8			78.4			95.4			206.1	

Size of Deposits (Rs.lakh)	Urban						Metropolitan					
	June 1980			June 1985			June 1980			June 1985		
	A	B	C	A	B	C	A	B	C	A	B	C
Less than 10	0.3	1.1	7.6	0.2	0.4	0.3	0.4	0.9	2.3	0.5	0.5	0.3
10 - 50	5.2	20.9	51.2	0.9	3.7	10.1	1.0	10.4	36.1	0.2	1.5	3.0
50 - 60	2.3	5.9	9.2	0.6	2.0	3.7	0.8	4.4	7.6	0.1	0.6	1.9
60 - 70	2.3	7.9	7.6	0.8	1.9	5.7	0.8	3.6	9.2	0.1	0.8	2.1
70 - 80	2.8	7.2	5.0	0.8	2.4	4.4	1.3	4.6	6.2	0.1	1.2	2.7
80 - 90	3.5	6.4	4.4	1.0	3.5	3.7	0.7	4.6	5.4	0.3	1.9	3.0
90 - 100	3.8	5.9	3.4	1.2	2.7	5.0	1.5	4.7	4.9	0.3	1.4	2.8
More than 100	79.8	44.7	11.6	94.5	83.4	67.1	93.5	66.8	28.3	98.4	92.1	84.2
Average deposit per branch (Rs. lakh)	276.6	121.5	55.3	518.4	291.0	171.4	590.3	192.7	106.8	1084.7	461.2	322.2
Average Deposit per urban branch (A+B+C) (Rs. lakh)		162.5			343.9			327.4			671.2	

In the case of semi-urban areas, more than 83.1 per cent in A Group, 54.2 per cent in B Group and 22.3 per cent in C Group had deposits of more than Rs.50 lakh, in June 1980. These percentages had moved up to 96.1, 90.2 and 77.2, respectively. Here also, we see that the distribution of rural branches in June 1985 was closer to the distribution of semi-urban branches in June 1980. Similar shifts are observed in urban and metropolitan branches, particularly in Groups B and C. In June 1985, more than 90 per cent of branches in Group A in these two areas had deposits of more than Rs.100 lakh each. In both these areas, there were very few bank branches with deposits of less than Rs.10 lakh.

Table 5 shows changes in percentage contributions in different types of bank deposits in different areas by the three age groups during 1980-85. In June 1980, Group A branches in rural areas were far ahead as compared with Group C branches. 42 per cent of rural deposits were held by Group A, 36 per cent by Group B and 22 per cent by C branches. This position had evened out by June 1985 and the contributions of the three groups were almost equal for all types of deposit accounts in rural areas. (34, 35 and 31 per cent respectively).

TABLE 5. GROUPWISE SHARES IN BANK DEPOSITS IN 1980 & 1985

(Percent contribution within area)

Area	Group	June 1980				June 1985			
		Current	Savings	Term	Total	Current	Savings	Term	Total
	A	41	39	44	42	38	32	35	34
Rural	B	35	37	36	36	33	36	35	35
	C	24	24	20	22	29	32	30	31
	A	71	70	72	71	66	63	65	64
Semi-urban	B	17	18	17	18	18	20	19	19
	C	12	12	11	11	16	17	16	17
	A	70	67	69	68	64	59	60	61
Urban	B	20	21	21	21	22	23	24	23
	C	10	12	10	11	14	18	16	16
	A	75	68	73	72	69	62	65	65
Metropolitan	B	14	22	18	18	17	24	21	21
	C	11	10	9	10	14	14	14	14
	A	81	76	80	79	74	68	76	73
Bombay	B	12	17	14	14	16	20	15	17
	C	7	7	6	7	10	12	9	10
	A	72	63	70	69	62	58	63	61
Delhi	B	16	25	17	19	19	26	20	22
	C	12	12	13	12	19	16	17	17
	A	75	68	69	71	70	63	55	61
Calcutta	B	14	22	21	19	15	23	29	24
	C	11	10	10	10	15	14	16	15
	A	76	65	77	75	67	63	67	66
Madras	B	15	26	16	17	20	25	21	22
	C	9	9	7	8	13	12	12	12

Compared to the rural areas, the semi-urban branches in Group C appeared to have made much slower progress. Their contribution has increased from 11 per cent to 17 per cent only during the period 1980-85. This was also the position in the case of urban areas. In both these areas, the B Group of branches had improved their shares only marginally. Unlike in rural areas, the importance of A Group of branches in these two areas got reduced by small margins during this period.

In metropolitan cities also, the contribution of B Group of branches improved from 18 per cent to 21 per cent only during this period. However, the contribution of C Group of branches in these cities improved significantly for all types of accounts.

Coming to the four major cities, a different type of pattern was seen. In Bombay city, the B and C

Groups of branches increased their shares in current and savings deposits whereas in Delhi city these Groups improved their shares mainly in term deposit accounts. This was also the case in Calcutta and Madras cities. Overall, noticeable change in the contributions to deposits of different types was observed for the C Group of branches in these cities.

TABLE 6. SHIFTS IN TYPES OF DEPOSITS DURING 1980-85

(Percent Pattern)

Area	Group	June 1980				June 1985			
		Current	Savings	Term	Total	Current	Savings	Term	Total
	A	8	40	52	100	8	36	56	100
Rural	B	7	44	49	100	7	39	54	100
	C	9	47	44	100	7	40	53	100
	A	11	33	56	100	10	34	56	100
Semi-urban	B	11	35	54	100	10	36	54	100
	C	12	36	52	100	10	35	55	100
	A	16	27	57	100	16	27	57	100
Urban	B	15	28	57	100	15	27	58	100
	C	15	31	54	100	13	30	57	100
	A	21	21	58	100	24	22	54	100
Metropolitan	B	16	27	57	100	18	27	55	100
	C	21	23	56	100	22	24	54	100
	A	21	23	56	100	26	21	53	100
Bombay	B	17	28	55	100	25	28	47	100
	C	24	26	50	100	26	27	47	100
	A	17	19	64	100	17	23	60	100
Delhi	B	14	28	58	100	15	29	56	100
	C	17	20	63	100	19	22	59	100
	A	27	20	53	100	27	23	50	100
Calcutta	B	19	23	58	100	14	21	65	100
	C	27	20	53	100	23	21	56	100
	A	20	14	66	100	26	20	54	100
Madras	B	17	24	59	100	25	24	51	100
	C	23	18	59	100	27	21	52	100

Table 6 shows shifts in pattern of deposits of different categories of bank branches. In rural areas, significant shifts from savings deposits to term deposits were observed in all the Groups, but in semi-urban areas, the pattern remained stable over the five year period in all the Groups. Further, the term deposits share in June 1985 was 56, 54 and 53 per cent in Groups A, B and C in rural and 56, 54 and 55 in Groups A, B and C in semi-urban areas. In fact, if we look to the corresponding figures for urban and metropolitan areas, we find that there are no significant differences in the shares of term deposits in different categories (age and area) of bank branches. The rural branches which were lagging behind in June 1980 in this respect had caught up with other areas by June 1985. Typically, the shares of current deposits have remained stable in rural, semi-urban and urban areas over the period 1980-85, and showed an increasing trend as we move from rural to urban areas.

Metropolitan branches showed a different phenomenon. In this area, the shares of savings deposits remained stable during 1980-85. Between term deposits and current deposits, significant shift was observed in favour of current deposits only in the case of A Group of branches.

The patterns of deposits in metropolitan branches can be seen more closely by examining the figures for the four metropolitan cities. In all the four cities, the shares of term deposits have declined, particularly so in Madras City. The shares of current deposits showed substantial increase in Bombay and Madras; but in Delhi and Calcutta, a larger share of fall in term deposits was taken over by savings deposits. The mixed trends in these four cities could have arisen more

due to fierce competition with other financial and non-financial institutions. Current deposits are generally held by trading and manufacturing establishments and this is reflected in higher shares of such deposits in Bombay and Calcutta as compared with Delhi and Madras. However, by June 1985, Madras seems to have come closer to Bombay.

Thus, except in the case of rural branches, the opening of new branches has had little impact on the shares of different types of deposits and the pattern was similar in all groups within the respective areas. But once again, in the four metropolitan cities, the impact of new branches was varied. The changes in pattern of deposits over different groups within a city confirm the importance of strategic location of bank branches. Age-wise, B branches in June 1980 and C branches in June 1985 were at the same level, but their patterns of deposit were significantly different.

TABLE 7. AVERAGE AMOUNT PER DEPOSIT ACCOUNT

(Rs.)

Area	Group	Current		Savings		Term		Total	
		June 1980	June 1985	June 1980	June 1985	June 1980	June 1985	June 1980	June 1985
Rural	A	2,440	8,303	1,026	1,312	3,492	4,894	1,742	2,493
	B	3,728	6,880	867	1,161	2,936	4,843	1,446	2,183
	C	4,349	6,163	690	957	2,137	3,964	1,102	1,777
Semi-urban	A	4,689	8,814	1,105	1,465	4,003	5,172	2,169	2,903
	B	4,359	7,396	959	1,340	3,471	5,439	1,832	2,678
	C	4,059	6,550	1,015	1,405	3,099	5,252	1,808	2,741
Urban	A	7,739	13,856	1,275	1,759	5,194	6,131	2,915	3,919
	B	6,925	12,314	1,189	1,694	4,751	6,779	2,652	3,890
	C	5,080	8,964	1,248	1,776	3,845	5,922	2,401	3,590
Metropolitan	A	15,598	29,769	1,784	2,875	9,374	13,076	5,202	7,872
	B	9,683	18,808	1,506	2,233	5,699	8,228	3,391	5,087
	C	10,881	18,607	1,581	2,294	6,429	8,572	3,990	5,570
Bombay	A	17,472	37,126	2,134	3,081	13,220	17,435	6,235	9,378
	B	11,430	29,965	1,741	2,525	6,391	9,393	3,786	5,934
	C	12,418	23,476	1,650	2,540	7,108	10,608	4,078	6,190
Delhi	A	18,103	27,618	2,061	3,857	13,274	16,373	6,711	9,755
	B	9,859	15,901	1,923	3,026	6,823	10,321	4,112	6,255
	C	16,926	21,322	2,124	2,933	8,837	12,471	5,563	7,558
Calcutta	A	20,031	30,890	1,792	2,998	8,301	11,031	5,267	7,604
	B	13,668	19,189	1,661	2,347	5,883	10,904	3,964	6,393
	C	13,733	17,506	1,579	2,295	6,408	8,397	4,388	5,828
Madras	A	13,192	23,855	1,154	2,038	4,565	12,927	3,560	6,667
	B	6,403	15,746	1,022	1,390	4,082	6,370	2,458	3,742
	C	8,583	16,358	1,100	1,707	4,996	6,150	3,229	4,432

TABLE 8. AVERAGE AMOUNT PER DEPOSIT ACCOUNT IN NEWLY BANKED CENTRES

(Rs.)

Area	Group (New Centres)	Current		Savings		Term		Total	
		June 1980	June 1985	June 1980	June 1985	June 1980	June 1985	June 1980	June 1985
Rural	B	3,549	6,667	868	1,152	2,908	4,717	1,430	2,139
	C	4,207	6,011	667	906	2,013	3,726	1,047	1,669
Semi-urban	B	5,042	8,509	821	1,267	2,977	5,069	1,462	2,303
	C	6,178	5,646	796	1,016	2,629	4,428	1,350	1,791

We have discussed earlier the deposit growth during 1980-85 for different categories of bank branches, along with average deposit per branch. The increase in deposits could arise partly due to increase in the number of deposit accounts. Tables 7 and 8 give average amounts per deposit account for different areas, for four metropolitan cities and for newly banked centres in rural and semi-urban areas. These Tables reveal interesting patterns.

First, the average amount of savings deposit per account in June 1980 ranged between Rs.690 for the C Group branch in rural areas to Rs.1,784 for A Group in metropolitan areas. But by June 1985, this variation had widened, from about Rs.957 to Rs.2,875. The increases in average amount per deposit account during 1980-85 become more significant as we move from rural areas to metropolitan areas.

In the case of term deposits, the increase in average amounts per account during 1980-85 were less pronounced as compared with the increase in average current account deposits in all the areas. Rural and semi-urban branches in Group C were closer in respect of current accounts. The distance between urban and metropolitan branches had widened during the period.

In all types of accounts, A Group of branches had higher average deposits per account, followed by B and C Groups in that order. This would, perhaps, indicate that the A Group of branches could attract customers from the higher strata of society. But between B and C Groups, the latter Group fared better in metropolitan areas. Within a Group, the range of variation between areas was about the same.

By and large, the B and C Groups were a little behind the A group in June 1980 but the position had evened out by June 1985 in all the areas except in rural areas. In urban and metropolitan areas, the A Group branches had larger size of current and term deposit account but the average size of savings deposit account was almost the same in all the groups. As expected, the average size of different types of accounts increased as we go from rural branches to metropolitan areas but the inequality between different areas does not seem to have widened over the period 1980-85. The C group of branches in metropolitan areas generally had higher size of deposit accounts than the B group in all types of deposits. This pattern was distinguishable in all the four selected cities.

Out of 11,099 branches opened in rural areas during 1970-80, 10,600 were opened in unbanked centres, whereas in semi-urban areas, only about 1,300 branches out of 5,095 branches were opened in unbanked areas during the same period. We, therefore, examine below the average amount per deposit account for B and C Groups of branches in the newly banked centres vis-a-vis the corresponding amounts in all the centres. The relative amounts for newly banked centres are shown in Table 8.

As expected, for the rural areas, these average amounts for different types of deposit accounts are fairly close as the branches in B and C Groups were opened almost wholly in unbanked centres. But it is remarkable that in semi-urban areas, branches in unbanked centres were not far behind the branches in the respective groups in other centres.

A survey of ownership pattern of bank deposits held by different types of deposit account holders is conducted biennially in the BSR system. These data for branches classified by areas and Groups are available for period ending March 1982 (Table 9). It is seen that in the case of A and B Groups of branches in rural areas, about 90 per cent of deposits were held by individuals, but for the C Group, 31.3 per cent of the deposits were held by institutions other than public sector and private corporate sector. In semi-urban branches, the ownership pattern did not differ significantly between A, B and C Groups. Reliance on individuals in mobilising deposits was more in B and C Groups of urban and metropolitan branches. Public sector and private corporate sector deposits with A Group of branches in metropolitan areas accounted for 25.8 per cent of aggregate deposits of A Group, but it is noteworthy that B and C Group branches also did not lag far behind the A Group. It is interesting to note that C group of branches in all the areas were more successful, as compared with B Group branches, in capturing public sector and private corporate sector deposits.

TABLE 9. INSTITUTIONAL OWNERSHIP PATTERN OF DEPOSITS IN BANK BRANCHES IN MARCH 1982

(Per cent)

	Group	Deposits owned by				
		Public Sector	Private Corporate	Other Institutions	Individuals	Total
Rural	A	1.5	3.3	4.9	90.3	100
	B	2.1	3.8	4.6	89.4	100
	C	1.5	7.5	31.3	59.6	100
Semi-urban	A	3.3	10.0	7.3	79.4	100
	B	3.8	5.4	5.7	85.0	100
	C	4.3	5.1	7.6	83.0	100
Urban	A	6.0	11.0	10.4	72.6	100
	B	4.5	4.6	8.6	82.2	100
	C	6.2	8.8	11.1	73.9	100
Metropolitan	A	11.2	14.6	15.5	58.6	100
	B	7.4	9.2	14.3	69.2	100
	C	6.0	11.6	9.7	72.7	100

In the context of assessing additional deposit mobilisation of banks, the NIBM Study [NIBM] showed that banks had succeeded in capturing even the small savers, which is also borne out by the small size of an average deposit account discussed earlier. Of the financial savings of households, bank deposits accounted for 78 per cent in rural areas and 68 per cent in urban areas. Narrating different profiles of bank account holders and non-holders, the Study observed that banking was largely a habit with educated families, as only 6 per cent of urban deposit holders and 14 per cent of rural deposit holders were illiterates. Among the literates, 40 per cent in urban areas and 20 per cent in rural areas were graduates and above. Income profile of deposit holders showed that 11 per cent in urban areas and 31 per cent in rural areas had annual incomes of less than Rs.6,000. About 23 per cent of deposit holders in urban areas and 3 per cent in rural areas had annual income of Rs.40,000 and more. Further, 78 per cent of financial savings of urban deposit holders were in the form of bank deposits, while in the rural areas, this percentage was 68. However, considering the overall findings of the study and high density of bank branches in urban and metropolitan areas, it would appear that the deposit growth rate can be accelerated only by extension of banking network to unbanked centres. This conclusion is also borne out by the analysis given earlier on deposit mobilisation by branches opened newly in unbanked centres.

The findings of this Section can now be summarised as follows:

a) The dampening of deposit growth rate during 1980-85 was mainly in the A Group of branches, which was partly affected by the emergence of B and C Groups.

b) A two-way analysis of variance of branch deposit growth showed that the age effect on deposit growth was highly significant. This age effect got diluted after 10 years. Area effect on deposit growth appeared to be significant only because of high deposit growth of branches in rural areas.

c) Had there been no branch expansion in unbanked centres, the deposit growth during 1980-85 would probably have been three-fourth of what was actually achieved.

d) The disparity between average deposits per branch in rural and metropolitan branches got reduced, from a ratio of 1:11 to 1:9 during 1980-85.

e) There were significant shifts towards large sized branches even in rural areas. About 86.6 per cent of A Group branches, 65.5 per cent in B Group and 29.5 per cent in C group in rural areas had deposits of more than Rs.50 lakh per branch. In urban and metropolitan areas, more than 90 per cent of the A Group of branches had deposits of more than Rs.100 lakh each.

f) Term deposits share for all the Groups of branches in all the areas was about the same, around 55 per cent. During 1980-85, in the rural

areas, there was a shift from savings deposits to term deposits, whereas the patterns in other areas were fairly stable.

g) Average amounts of deposit per account in branches in newly banked centres did not lag far behind as compared with the corresponding levels in banked centres.

On the whole, the question which can now be posed in the above context is that, if the new branches in unbanked centres have succeeded in accelerating deposit growth, did they get their due shares in credit extension and if yes, which sectors got this increased credit. This question has been examined in the next Section.

SECTION II

In this Section, we discuss the growth of bank credit and its various profiles. Area-wise classification of credit has more relevance to credit utilised rather than credit sanctioned. BSR 1A gives data on credit limits sanctioned and outstanding, by location of a branch and credit utilised by state of utilisation. These data relate to individual credit limits above Rs.10,000 upto June 1983 and above Rs.25,000 from December 1983. For smaller amounts BSR 1B gives, for the branch as a whole, credit limits outstanding, classified by purpose of credit. The BSR system does not provide area-wise (i.e. rural, semi-urban, etc.) data on credit utilisation. Thus, though the data on credit utilised are more meaningful, we could use data only on limits outstanding by location of sanctioning branch. However, the credit-deposit ratios according to limits sanctioned by Groups A, B and C of branches in different areas are also useful to know resource mobilisation and utilisation by branches established before and after 1970.

The average credit per branch worked out to Rs.73.44 lakh in June 1980 and Rs.156.94 lakh in June 1985 (Table 10). Taking the average credit extended by a rural branch in June 1980 (Rs.15.3 lakh) as one uni: a semi-urban branch extended credit of 2.9 unit:; that of an urban branch was 6.4 units; while a metropolitan branch extended 19.2 units of credit. The disparity between rural-metropolitan branch was thus in the ratio of 1:19. This ratio got reduced significantly to 1:11 in June 1985.

TABLE 10. AVERAGE CREDIT PER BRANCH

(Rs. lakh)

Area/Group	June 1980	June 1985	Annual Growth Rate
Rural	15.32	49.22	26.29
Semi-urban	44.50	115.84	21.09
Urban	97.30	203.20	15.87
Metropolitan	294.51	538.26	12.82
Total	73.44	156.94	16.40
Group A	153.80	300.85	14.36
Group B	45.13	117.43	21.08
Group C	28.09	67.86	19.29

The average credit of Group A branch was much higher at Rs.153.80 lakh against the averages of Rs.45.13 lakh and Rs.28.09 lakh for an average Group B and Group C branch, respectively. During 1980-85, credit by a Group A branch expanded at an annual compound growth rate of 14.36 per cent against 19.29 per cent for a Group C branch. The Group B branch credit growth rate was higher at 21.08 per cent (Table 10).

TABLE 11. AVERAGE CREDIT PER ACCOUNT

(Rs.)

Area	Group	June 1980	June 1985
Rural	A	4,130	6,830
	B	2,810	6,240
	C	2,110	4,180
Semi-urban	A	6,500	12,440
	B	4,050	8,700
	C	3,940	7,820
Urban	A	21,800	34,660
	B	11,290	24,000
	C	8,280	16,550
Metropolitan	A	1,11,080	1,70,590
	B	34,000	52,140
	C	95,770	80,140
Total	A	19,160	30,050
	B	6,440	12,350
	C	7,270	9,330

Average amounts of credit outstanding per account in different categories of branches are given in Table 11. In June 1980, the averages varied from Rs.2,110 for C Group branch in rural areas to Rs.1,11,080 for an A Group branch in metropolitan areas, i.e., in a ratio of about 1:53. In June 1985, the range had somewhat narrowed down from Rs.4,180 to Rs.1,70,590, i.e., in the

ratio of 1:41 approximately. Between the Group A, B and C also, the disparity in average credit per account has narrowed down during 1980-85 in all the areas, except in metropolitan areas, where it has remained the same. This indicates that the spread of credit from rural to metropolitan areas is becoming more equal.

TABLE 12. SIZE-WISE DISTRIBUTION OF OUTSTANDING BANK CREDIT IN 1980 AND 1985

(Per cent)

Area	Group	Outstanding Credit Range in Rs. lakh							
		<0.25	0.25-1	1-10	10-50	50-100	100-600	>600	Total
					June 1980				
Rural	A	44.6	20.8	12.2	4.8	1.4	5.3	10.9	100.0
	B	61.5	22.1	10.1	3.7	0.9	1.7	neg.	100.0
	C	66.0	19.2	7.9	2.6	0.9	2.2	1.2	100.0
Semi-urban	A	31.0	19.3	20.6	12.3	4.3	7.7	4.8	100.0
	B	45.6	23.3	16.6	8.0	2.3	3.4	0.8	100.0
	C	44.2	27.7	17.9	6.7	1.5	1.9	neg.	100.0
Urban	A	11.7	11.6	19.1	15.8	7.1	12.9	21.9	100.0
	B	20.6	18.7	24.0	13.0	5.3	11.2	7.1	100.0
	C	27.9	25.2	28.4	12.5	4.2	1.8	neg.	100.0
Metropolitan	A	2.8	4.1	12.7	18.8	11.4	22.8	27.4	100.0
	B	8.4	9.8	20.1	17.0	6.8	12.7	25.2	100.0
	C	2.9	3.6	9.6	11.5	5.8	17.3	49.3	100.0
					June 1985				
Rural	A	43.8	17.6	22.8	5.6	1.9	2.7	5.6	100.0
	B	44.7	14.2	25.3	5.2	1.8	2.8	5.9	100.0
	C	58.4	14.8	20.4	3.5	1.0	1.7	0.3	100.0
Semi-urban	A	26.1	13.4	25.8	12.5	4.7	10.5	7.1	100.0
	B	34.9	16.8	29.2	9.8	3.2	4.7	1.5	100.0
	C	38.6	19.2	27.9	7.3	2.6	3.7	0.8	100.0
Urban	A	12.2	9.2	21.8	19.6	8.4	15.8	13.0	100.0
	B	17.0	11.4	24.3	16.1	5.8	9.5	15.8	100.0
	C	24.9	16.5	30.4	15.5	4.8	7.3	0.5	100.0
Metropolitan	A	3.0	2.9	9.9	15.2	9.3	20.0	39.6	100.0
	B	8.7	7.3	18.8	19.0	8.1	15.0	23.1	100.0
	C	6.0	5.3	15.8	18.3	9.7	18.9	26.0	100.0

Note: Entries in higher limits of credit in rural areas have been recorded mostly in rural centres adjoining big cities and towns.

A further probe into higher average credit per account in rural areas was made by examining size range-wise percentage distribution of outstanding credit per account. These data, for June 1980 and June 1985 are shown in Table 12. The impact of the thrust on meeting credit needs of small borrowers is now clearly seen. But the different pattern between June 1980 and June 1985 shows the direction in which rural credit has moved. In June 1980, 44.6 per cent of credit of A Group and 61.5 and 66.0 per cent of credit of B and C Groups was extended to small borrowers with limits less than Rs.25,000. But by June 1985, these shares for B and C Groups had come down significantly. There was a significant increase in credit given to borrowers in the range of Rs.1 lakh to Rs.10 lakh, which claimed 22.8, 25.3 and 20.4 per cent of rural credit for A, B and C Groups of branches. In semi-urban areas also, a similar phenomenon was noticed. The shifts towards higher size credit limits, particularly in ranges above Rs.100 lakh, would seem to corroborate our hypothesis of transfer of large sized credit accounts from urban-metropolitan areas to rural-semi-urban areas.

Interestingly, the patterns for the three Groups in urban areas were fairly stable and more equitable. Here the share of borrowers in the range of Rs.10 lakh to Rs.50 lakh had gone up significantly. This was mainly on account of the fall in the shares of borrowers with limits above Rs.600 lakh. Another noteworthy feature of this

movement during 1980-85 is that the share of small borrowers in urban areas declined only by a small margin, unlike in rural and semi-urban areas. In metropolitan areas, the share of borrowers with limits above Rs.600 lakh in total credit went up substantially, from 27.4 per cent to 39.6 per cent for the A Group branches. On the other hand, for the C Group branches, the share went down from 49 per cent to 26 per cent. Apart from these movements, the patterns for the three Groups were relatively more stable.

Table 13 shows purpose-wise bank credit in June 1980 and June 1985. As expected, nearly half of bank credit by branches in rural areas was given for agriculture. This proportion for B and C Groups of branches was substantially higher than that for the A Group. Credit to manufacturing industries which formed nearly one third of the credit extended by the A Group in 1980 got reduced to about one-fourth by 1985. Over the five year period of 1980- 85, there was a distinct shift towards trade and transport.

In the case of semi-urban areas, agriculture claimed one-fourth (26.9 per cent) of credit of A Group branches and 44.8 and 42.7 per cent in the case of B and C Groups. During 1980-85, the shift away from agriculture was less pronounced in semi-urban areas as compared with the rural areas. The share of manufacturing industries was about 41-43 per cent for the A Group and 20-25 per cent for B and C Groups. Unlike in rural areas, there was no clear-cut movement towards trade and transport over the period 1980-85. But there was a significant difference in the purposewise pattern of bank credit of B and C Groups of branches.

TABLE 13. PURPOSE-WISE PATTERN OF BANK CREDIT IN 1980 AND 1985

(Per cent)

Area	Group	Agriculture	Industry	Trade & Transport	Personal	Others	Total
				June 1980			
Rural	A	42.4	31.5	12.1	7.3	6.7	100.0
	B	57.9	15.0	12.6	6.9	7.7	100.0
	C	58.5	12.1	13.7	7.9	7.7	100.0
Semi-urban	A	26.9	42.9	14.9	8.1	7.2	100.0
	B	44.8	23.7	15.7	6.8	9.0	100.0
	C	42.7	20.4	21.0	7.0	8.9	100.0
Urban	A	11.3	46.8	29.8	6.3	5.7	100.0
	B	15.2	46.5	20.6	9.5	8.1	100.0
	C	13.2	34.1	30.9	10.5	11.3	100.0
Metropolitan	A	3.7	62.0	27.8	3.6	3.0	100.0
	B	3.8	48.8	35.4	6.7	5.3	100.0
	C	1.5	52.3	39.9	2.6	3.7	100.0
				June 1985			
Rural	A	42.6	25.1	15.9	8.6	7.7	100.0
	B	51.3	17.8	18.3	6.3	6.3	100.0
	C	55.6	14.2	15.9	6.9	7.3	100.0
Semi-urban	A	25.4	40.6	18.6	8.0	7.4	100.0
	B	41.2	25.0	15.9	7.2	10.8	100.0
	C	39.2	23.5	20.8	7.5	9.0	100.0
Urban	A	10.1	55.2	20.2	7.7	6.8	100.0
	B	21.8	43.0	17.9	8.9	8.4	100.0
	C	14.2	36.8	26.5	11.8	10.7	100.0
Metropolitan	A	1.4	49.4	41.7	3.7	3.7	100.0
	B	2.6	52.9	30.4	7.0	7.2	100.0
	C	1.7	50.5	33.6	5.5	8.8	100.0

Agriculture share in urban branch credit was around 11-15 per cent in June 1980 and it showed some improvement by June 1985. About 50 per cent of the credit of A and B Groups and one-third of C Group credit was for manufacturing industries but the shifts between industry and trade and transport were in opposite directions in A, B and C Groups. Between semi-urban and urban areas, the C Group branches showed preference to trade and transport while the B Group preferred industries.

About 90 per cent of credit given by A Group in metropolitan areas was for industries and trade and transport. But during 1980- 85, there was a distinct shift away from industries towards trade and transport. In the case of B Group, there was a shift towards industries while the C Group showed a shift away from trade and transport to other miscellaneous purposes.

TABLE 14. AREA-WISE SHARES IN BANK CREDIT CLASSIFIED BY PURPOSE IN 1980 AND 1985

(Per cent)

Area	Group	Agriculture	Industry	Trade & Transport	Personal	Others	Total*
				June 1980			
Rural	A	9.4	2.2	1.5	4.4	4.2	3.3
	B	13.2	1.0	1.6	4.2	5.0	3.4
	C	11.3	0.7	1.5	4.1	4.3	2.9
Semi-Urban	A	18.6	9.1	5.8	15.1	14.2	10.3
	B	10.0	1.8	2.1	4.5	6.3	3.6
	C	7.1	1.1	2.0	3.2	4.2	3.5
Urban	A	12.7	16.3	19.1	19.4	18.5	16.8
	B	3.9	3.6	3.0	6.5	5.9	3.8
	C	1.5	1.2	2.0	3.3	3.7	1.7
Metropolitan	A	8.9	46.5	38.4	23.4	20.8	36.1
	B	1.5	6.0	8.1	7.3	6.1	5.9
	C	1.0	10.5	14.8	4.5	6.8	9.7
Total		100.0	100.0	100.0	100.0	100.0	100.0
				June 1985			
Rural	A	8.9	2.1	2.0	4.8	4.2	3.5
	B	15.7	2.1	3.3	5.1	4.9	5.1
	C	16.5	1.7	2.8	5.5	5.6	5.0
Semi-urban	A	18.0	11.3	7.9	15.0	13.4	11.8
	B	11.0	2.6	2.5	5.1	7.4	4.5
	C	8.2	1.9	2.6	4.2	4.8	3.5
Urban	A	8.8	18.8	10.5	17.7	15.2	14.5
	B	6.3	4.9	3.1	6.8	6.3	4.8
	C	2.2	2.2	2.5	4.9	4.3	2.6
Metropolitan	A	2.8	37.5	48.5	18.9	18.6	32.4
	B	0.9	7.3	6.5	6.6	6.6	5.9
	C	0.6	7.6	7.7	5.6	8.6	6.4
Total		100.0	100.0	100.0	100.0	100.0	100.0

*These figures would differ from Table No.1 and those published elsewhere as this Table is based on figures for branches established upto June 1980 only.

Table 14 shows the area-wise shares in bank credit classified by purposes. Rural areas, as expected, contributed one-third (33.9 per cent) of the banking credit for agriculture as at the end of June 1980: this share had increased to 41.1 per cent by the end of June 1985. Correspondingly, there was a fall in the shares of metropolitan branches from over 11.4 per cent to 4.3 per cent. Semi-urban and urban branches, contributed in agriculture credit 36.5 and 37.2 per cent and 18.2 and 17.3 per cent, respectively, in the two periods.

There were significant shifts in the shares of different areas in industrial credit. While the share of metropolitan areas declined from 63.0 per cent to 52.4 per cent, shares of all other areas increased by 2-3 percentage points. In the case of credit for trade and transport purposes, the share of urban areas declined from 24.1 per cent to 16.1 per cent, with the shares of rural and semi-urban areas going up in equal proportions. The share of metropolitan areas remained fairly stable at 61.3 and 62.7 per cent in 1980 and 1985.

The gain in the share of rural areas in agricultural credit was in respect of B and C Groups of branches, whereas the corresponding fall in the metropolitan areas was in the A Group of branches. In the industrial credit also, the gain was mainly shared by B and C Groups of branches in rural, semi-urban and urban areas with corresponding fall in the share of A Group of branches in metropolitan areas. In the case of credit for trade and transport purposes, the decline in the share of urban areas was in the A Group of branches, whereas the corresponding gain was shared by all Groups of branches in rural and semi-urban areas. In metropolitan areas, the share of C Group in credit for trade and transport declined substantially with the corresponding gain for the A Group of branches. Thus, generally, the shares of A Group declined with corresponding gain in B and C Groups. Overall, the A Group in urban and metropolitan areas lost ground to B and C Groups.

Institutional status of the borrowers of different Groups and areas of location of bank branches is available for June 1985, as shown in Table 15. As expected, in rural and semi-urban areas, individuals and private firms (non-corporate) claimed more than 75 per cent of credit by branches in Groups B and C in these two areas. A and B Groups in rural areas had extended about 20 per cent of their credit to public sector and private corporate bodies. Credit extension to co-operative bodies was only about 2-3 per cent. The C Group of branches in these areas did not receive much support from Government and corporate bodies.

TABLE 15. INSTITUTIONAL PATTERN OF BANK CREDIT IN JUNE 1985

(Per cent)

Area	Group	Public Sector	Private Corporate bodies	Cooperative bodies	Private firms	Individual	Others	Total
Rural	A	12.3	8.6	2.7	26.3	48.9	1.2	100.0
	B	12.4	6.3	3.3	22.8	54.9	0.3	100.0
	C	5.8	6.5	3.1	24.9	59.2	0.5	100.0
Semi-urban	A	13.1	20.0	2.2	37.1	26.7	0.9	100.0
	B	9.4	10.5	2.8	34.8	42.1	0.4	100.0
	C	4.7	13.0	1.1	32.3	48.3	0.6	100.0
Urban	A	20.4	25.6	2.4	39.5	9.8	2.3	100.0
	B	26.5	14.6	2.8	41.0	14.5	0.6	100.0
	C	9.8	18.2	1.2	46.5	23.1	1.2	100.0
Metropolitan	A	40.7	39.8	0.4	14.9	2.7	1.5	100.0
	B	27.9	35.5	1.9	25.9	7.2	1.6	100.0
	C	23.7	41.7	0.3	28.3	5.1	0.9	100.0

Note: Data relate to accounts with individual credit limits of more than Rs. 25,000.

In metropolitan areas, as expected, the A Group extended more support of public sector and private corporate bodies, each claiming about 40 per cent of credit of A Group. For B and C Groups, about one-fourth of their credit was extended to government and unincorporated firms each, while private corporate sector claimed about 35-40 per cent of credit.

The credit-deposit (C-D) ratio has been one of the policy parameters in banking development and the banks were given specific directives to reach a C-D ratio of 60 per cent in rural and semi-urban areas by March 1979. We have analysed these ratios by areas, by groups, and by examining the percentage distribution of bank branches according to the size of C-D ratio (Tables 16 to 19).

TABLE 16. AVERAGE CREDIT-DEPOSIT RATIOS BY AREAS
(Per cent, as at June end)

Area	1969	1975	1980	1985
Rural	37.5	52.0	51.33	62.76
Semi-urban	39.7	49.0	46.65	56.20
Urban	59.7	70.5	59.87	59.08
Metropolitan	106.1	88.2	88.90	77.28
Total	77.4	72.2	67.22	65.85

TABLE 17. AVERAGE CREDIT-DEPOSIT RATIOS IN JUNE 1980 AND JUNE 1985

Area		June 1980	June 1985
Rural	A	42.23	47.47
	B	51.10	66.39
	C	69.15	75.64
Semi-urban	A	41.91	53.01
	B	58.36	64.62
	C	58.58	58.77
Urban	A	66.11	64.69
	B	50.28	55.78
	C	38.94	42.71
Metropolitan	A	88.07	87.88
	B	62.48	57.27
	C	137.78	62.06
All Areas	A	67.59	69.74
	B	56.18	60.34
	C	83.79	60.44

Overall, the C-D ratio has been showing a declining trend, from 77.4 per cent in 1969 to about 65.85 per cent in June 1985[3]. In the case of metropolitan branches, this fall was more pronounced in early Seventies and early Eighties. It was stable in the second half of the Seventies. In the case of urban branches, after a jump from 59.7 per cent to 70.5 per cent in the early Seventies, the C-D ratio came down to 59.87 per cent and has remained at that level in the Eighties.

It is in the rural areas that the C-D ratio showed a dramatic improvement from 37.5 per cent in 1969 to 62.76 per cent in June 1985. This is almost a reverse reflection of the metropolitan phenomenon. Semi-urban areas also showed a similar movement, with C-D ratio rising from 39.7 per cent to 56.20 per cent during 1969-1985.

Table 17 also shows the movement of C-D ratio for the A, B and C Groups over the period 1980-85. The ratio showed a small movement for A and B Groups but it went down steeply for the C Groups from 83.79 per cent to 60.44 per cent during 1980-85. This fall for the C Group was entirely in the metropolitan areas.

Significant improvement in the C-D ratio over the period 1980-85 was seen mainly for the B and C Groups in rural areas and A Group in semi-urban areas. In urban areas, both B and C Groups showed improvements. The decline in the ratio was observed only for the A Group in urban, and all the Groups in metropolitan areas.

Tables 18 and 19 show C-D ratios and distribution of bank branches according to the range of C-D ratio. It will be recalled that banks were asked to reach a C-D ratio of 60 per cent in rural and semi-urban areas by 1979, against which in June 1980, the ratios attained were 51.33 per cent and 46.65 per cent, respectively. By June 1985, for the branches established prior to June 1980, these ratios had moved up to 62.76 per cent and 56.20 per cent.

Though the distribution of branches according to the range of C-D ratio had moved upward, in June 1985, only 34.12 per cent of A Group branches, 42.89 per cent in B Group and 56.97 per cent of branches in C Group in rural areas had attained a C-D ratio of 60 per cent and above. In semi-urban areas, the respective percentages of branches were 30.23 per cent, 41.99 per cent and 38.84 per cent, respectively. As many as 35.71 per cent of C Group branches in rural and 20.71 per cent of C Group branches in semi-urban areas had C-D ratios above 100 per cent. Credit extension by these branches was in fact more than double the size of their deposits. The A Group branches generally had low C-D ratios. Thus, it would seem that low deposit base branches in B and C Groups in rural and semi- urban areas had attained higher C-D ratios than high deposit base branches in the A Groups in these two areas.

In urban and metropolitan areas, the distributions of branches according to range of C-D ratio were almost similar for Groups A, B and C. It is interesting to note that nearly half of the branches in metropolitan and one-third of branches in urban areas had C-D ratios of less than 25 per cent. Further, unlike the shifts towards higher C-D ratio ranges in rural and semi-urban areas, branches in urban and metropolitan area did not show shifts during 1980-85.

As stated earlier, the B and C Groups of branches in rural and semi-urban areas were established mostly in unbanked centres. We have noticed significant shifts in borrowing units towards higher size limits for these Groups during 1980-85. The C-D ratios also improved significantly for these Groups in rural areas. Thus, the higher growth rate in deposit mobilisation in unbanked centres is matched by credit extension in these centres.

TABLE 18. AVERAGE CREDIT-DEPOSIT RATIO BY GROUPS, AREAS AND RANGES
RURAL & SEMI-URBAN

(Per cent)

C-D Ratio Range	Rural						Semi-urban					
	June 1980			June 1985			June 1980			June 1985		
	A	B	C	A	B	C	A	B	C	A	B	C
<25%	11.12	11.72	10.55	12.47	13.15	12.21	13.07	13.03	12.93	13.35	13.04	14.16
	(40.23)	(32.06)	(27.66)	(29.41)	(23.81)	(15.53)	(36.23)	(26.87)	(30.82)	(28.93)	(21.74)	(24.30)
>25% -	36.45	36.44	36.43	35.51	36.12	36.99	35.62	36.47	35.39	36.00	36.30	36.43
<50%	(27.21)	(25.70)	(18.98)	(29.10)	(25.41)	(20.38)	(30.93)	(26.32)	(26.27)	(32.59)	(26.87)	(29.16)
>50% -	55.08	54.71	55.04	54.85	55.14	54.65	54.82	54.64	54.82	54.73	54.57	54.75
<60%	(6.15)	(7.12)	(5.62)	(7.36)	(7.90)	(7.12)	(7.63)	(8.90)	(7.05)	(8.25)	(9.39)	(7.70)
>60% -	64.89	64.79	65.14	64.56	64.73	64.99	64.13	63.75	64.86	64.63	65.19	64.94
<70%	(5.25)	(5.49)	(5.33)	(7.68)	(7.31)	(6.23)	(5.77)	(6.83)	(5.69)	(6.23)	(7.43)	(6.48)
>70% -	74.22	74.21	74.58	74.28	74.46	74.79	75.08	74.05	74.60	74.88	75.10	74.70
<80%	(4.00)	(4.68)	(4.14)	(5.61)	(6.09)	(5.64)	(4.51)	(4.75)	(4.07)	(4.93)	(5.73)	(4.47)
>80% -	84.95	84.76	84.71	85.30	84.89	84.76	84.49	84.99	83.91	84.89	85.11	84.06
<90%	(3.01)	(3.81)	(3.97)	(4.22)	(4.63)	(5.08)	2.82	(3.99)	(3.24)	(4.08)	(5.13)	(3.94)
>90% -	94.07	95.10	94.29	94.92	94.58	94.98	95.52	94.47	95.71	94.65	94.40	94.29
<100%	(2.56)	(2.81)	(3.02)	(2.60)	(4.19)	(4.31)	(2.06)	(2.40)	(2.28)	(2.85)	(3.77)	(3.24)
>100%	227.96	200.99	231.92	213.46	283.48	233.88	188.31	213.31	247.11	224.10	235.04	236.97
	(11.59)	(18.32)	(31.27)	(14.01)	(20.67)	(35.71)	(10.05)	(19.93)	(20.58)	(12.14)	(19.93)	(20.71)

Note: Figures in brackets give percentages of no. of branches in respective ranges to total branches in a Group.

We may now summarise the main conclusions from the analysis given in this Section. As stated in the earlier Section, the branch network was spread further to 11,366 rural and semi-urban centres and in all 22,499 branches were established during 1970-80 and these branches were able to mobilise 32 per cent of bank deposits at the end of June 1980, and 41 per cent at the end of June 1985. The question that has been analysed in this Section is, who got the benefit of credit extension, arising from additional deposits. The following are the main conclusions:

(a) The ratio of average credit per rural branch and a metropolitan branch was 1:19 in June 1980, which got reduced significantly to 1:11 in June 1985. The compound annual growth rate of credit in rural areas was 26.29 per cent against 12.82 per cent in metropolitan areas.

(b) Following the pattern of deposit growth, the credit growth rate for the B and C Groups of branches was much higher than that of the A Group.

(c) The average credit per account was substantially high in rural areas and it varied from Rs.4,180 to Rs.6,830 for branches in the three Groups. The corresponding figures for metropolitan areas varied between Rs.52,140 and Rs.1,70,590. The ratio of lowest average rural credit per account to the highest average metropolitan credit per account came down from 1:53 in June 1980 to 1:41 in June 1985.

(d) Purpose-wise, there was a shift from agriculture and industry to trade and transport in rural areas. Similar shift from industry to trade and transport was noticed for A Group branches in metropolitan areas.

(e) The overall C-D ratio fell from 67.22 per cent to 65.85 per cent during 1980-85. This fall was more pronounced for the C Group in metropolitan areas. The B and C Groups of branches in rural areas improved their C-D ratios substantially. In the C Group, as many as 35.71 per cent of branches in rural areas and 20.71 per cent in semi- urban areas had C-D ratios above

100 per cent. Thus the low deposit base branches in B and C Groups in rural areas had attained higher C-D ratios than high deposit base branches in the A Group.

(f) It is interesting to note that half of the metropolitan branches and about one-third of urban branches had C-D ratios less than 25 per cent.

(g) The allocation of the increase in credit between 1980 and 1985 by various categories of borrowers is given in Table 20. It shows that 51.9 per cent of the increase in credit was allocated to borrowers who had limits of Rs.10 lakh and above. In fact, one-third (31.8 per cent) of the increase was in the size range of Rs.100 lakh and above. Less than one-fifth (18.9 per cent) of the increase in credit was to the borrowers who had limits of less than Rs.25,000. Though the higher size limit allocations were mostly sanctioned by the A Group of branches, it is intriguing to note that even the B and C Groups of branches, which were established with social objectives, disbursed more than 50 per cent of their additional credit to borrowers whose outstandings were already Rs.1 lakh or more.

TABLE 19. AVERAGE CREDIT-DEPOSIT RATIO BY GROUPS, AREAS AND RANGES
URBAN & METROPOLITAN

(Per cent)

C-D Ratio	Urban						Metropolitan					
	June 1980			June 1985			June 1980			June 1985		
Range	A	B	C	A	B	C	A	B	C	A	B	C
<25%	13.49 (33.33)	11.40 (39.75)	10.77 (43.71)	13.87 (28.04)	10.73 (35.74)	12.99 (35.58)	10.75 (47.69)	10.92 (52.98)	10.66 (51.23)	11.08 (44.22)	13.37 (50.58)	12.02 (44.22)
>25% - <50%	36.12 (26.62)	35.17 (25.56)	36.59 (25.03)	36.21 (27.73)	36.47 (26.52)	35.57 (29.80)	38.77 (20.91)	36.38 (22.93)	35.84 (21.47)	35.70 (23.51)	37.08 (23.29)	36.22 (25.11)
>50% - <60%	54.87 (8.09)	54.27 (6.76)	54.61 (6.48)	54.97 (8.09)	54.76 (7.58)	54.73 (7.56)	55.09 (4.88)	54.63 (4.53)	54.32 (4.82)	55.18 (5.61)	54.80 (4.98)	55.05 (5.19)
>60% - <70%	64.80 (5.90)	65.14 (4.46)	65.13 (5.15)	64.48 (5.75)	64.96 (4.68)	65.19 (5.91)	65.18 (3.07)	64.21 (2.31)	64.75 (3.37)	65.04 (3.67)	64.94 (4.18)	65.02 (5.09)
>70% - <80%	74.54 (4.43)	75.30 (3.64)	74.13 (3.62)	74.70 (4.33)	74.65 (3.86)	74.75 (3.69)	75.56 (2.34)	76.02 (2.84)	76.20 (2.55)	73.83 (3.21)	76.90 (2.40)	75.57 (3.09)
>80% - <90%	84.95 (3.56)	85.03 (2.97)	84.79 (2.54)	84.41 (4.12)	84.81 (2.53)	84.71 (2.92)	84.78 (2.87)	83.79 (2.13)	86.50 (2.18)	84.63 (2.14)	83.90 (2.04)	84.93 (2.46)
>90% - <100%	95.10 (2.60)	95.68 (2.23)	94.97 (2.22)	95.05 (4.38)	94.46 (3.64)	95.39 (2.41)	96.03 (2.14)	95.36 (1.33)	93.56 (2.00)	94.85 (1.54)	93.30 (1.69)	93.62 (2.37)
>100%	245.05 (15.47)	229.01 (14.64)	186.49 (11.25)	212.66 (17.56)	248.87 (14.45)	185.36 (12.13)	239.63 (16.10)	278.45 (10.93)	457.89 (12.37)	230.20 (16.10)	278.01 (10.84)	207.34 (12.47)

Note: Figures in brackets give percentages of no of branches in respective ranges to total branches in a Group.

(h) Classification of increase in credit by purpose showed that 67.6 per cent of the increase was claimed by manufacturing industries, trade and transport. Even for the B and C Groups of branches, agriculture sector could get only less than one-third of the increased credit.

It was also seen that the public sector, private corporate sector and other institutions each claimed about one-fourth of the increase in credit during 1980-85. However, the pattern for the B and C Groups was very much different from the pattern for the A Group. For the C Group nearly three-fourth of the credit was claimed by other institutions and individuals. As expected, the A Group of branches extended about two-third of its increase in credit to public and private corporate sector.

i) Rural share in total bank credit went up from 9.7 per cent to 13.8 per cent during 1980-85 but it would appear that a larger share of increased credit went to borrowers with higher credit limits.

TABLE 20. ALLOCATION OF INCREASED CREDIT DURING 1980-85

(Per cent)

Allocation	Group A	Group B	Group C	Total
I. By Size of Credit (Rs.)				
a) Less than - 25000	12.1	23.1	35.7	18.9
b) 25000 - 1 lakh	5.6	9.3	12.7	7.7
c) 1 lakh - 10 lakhs	17.2	27.2	28.2	21.5
d) 10 lakhs - 1 crore	21.2	18.8	18.6	20.1
e) More than 1 crore	43.9	21.6	4.8	31.8
II. By Purpose				
a) Agriculture	9.7	28.8	31.9	18.1
b) Industry	42.7	35.3	28.4	38.5
c) Trade & Transport	35.3	20.1	20.2	29.1
d) Others	12.3	15.8	19.5	14.3
III. By Organisation*				
a) Public Sector	35.3	24.6	-1.4	27.9
b) Private Corporate	26.6	17.9	27.3	24.7
c) Other Institutions	26.3	29.3	38.5	28.6
d) Others	11.8	28.2	35.6	18.8

* Based on BSR I-A, for accounts with individual limits of more than Rs. 25,000. Public Sector includes Govemment, joint sector and govemment managed undertakings and co-operative institutions.

SECTION III

This Section deals with the profit/loss position of bank branches in different categories. These data are collected on a sample basis, for bank branches functioning before 30th June 1980. Branches of foreign banks and regional banks were excluded. All the remaining bank branches were first arranged in ascending order of their Uniform Bank Branch Code - Part I. This ensured a more or less chronological order of opening of a bank branch for a given bank. Then a systematic random sample of about 1,000 branches was drawn. This procedure gave pro-rata (probability proportional to size) selection of branches of different banks, in different age groups and areas. Returns duly filled in were subsequently received from about 800 bank branches of which returns for 759 branches were accepted after scrutiny.

For selected bank branches, data were collected on outstanding deposits and their break-up according to type, outstanding credit and the proportion of non-interest bearing (stagnant) advances and total income and expenditure along with their details. These data related to each of the half yearly periods of 1984, 1985 and 1986. The data were averaged to give annual income/expenditure against outstanding deposits/advances averaged at the end of the year. Thus, our estimates may be regarded as average annual estimates, averaged over three years 1984-1986.

The concept and measurement of profit/loss of a bank branch is very much different from that of a bank as a whole. As is known, the large scale expansion of bank branches in the Seventies and its logistics were not based on commercial considerations of profit and loss. Therefore, the profitability of a bank branch has to be considered on a different footing than the profitability of a bank as a whole. Secondly, in the income/expenditure statement of a bank, there are many items which arise at the head office level only and these cannot be allocated to bank branches. On the other hand, in the income/ expenditure statement of a bank branch, there are transfer debit and credit entries which cancel out when aggregated over all the branches of a bank.

Ordinarily, we consider the composition of aggregate deposits to know the cost of raising funds. The credit-deposit ratio and the proportion of stagnant advances in total credit would determine the quantum of interest income of a bank

branch. Three other significant items determining the profit/loss position of a bank branch are (i) expenditure on establishment, (ii) net transfers from the head office to the branch and (iii) non-interest income earning business of the branch. Some of these factors are influenced by the environment in which a particular branch is located. As will be evident from the subsequent analysis, the profit/loss position is very much dependent upon the level of deposits as such, and the credit-deposit ratio of the branch. In most of the banks, notional interest is allocated to branches having surplus deposits (low credit-deposit ratios) or notional interest is charged to branches with deficit funds (credit-deposit ratios exceeding 100 per cent). The rates of such transfers of notional interest vary from bank to bank and, therefore, it becomes difficult to assess the true profitability of a bank branch. In our analysis, we have, therefore, considered two measures, viz., net profit based on the aggregate income and expenditure concept (including transfers between branch and its Head Office), and the net interest income, by considering only the interest earned/accrued on advances and interest paid to customers on deposits. This latter measure is also deficient, as many bank branches continue to show accrued interest on stagnant advances, which fictitiously increases the interest income.

TABLE 21. SALIENT FEATURES OF BANK BRANCHES

(Average amount in Rs. thousand per branch)

Item	Rural	Semi-Urban	Urban	Metropolitan	All-India
1. Outstanding Deposits					
a) Total	87,11	2,05,69	3,10,57	5,38,80	2,29,36
b) Current	4,97	17,81	44,06	1,11,81	31,83
c) Savings	31,58	71,64	86,28	1,25,87	67,01
d) Terms	49,75	1,14,03	1,77,80	3,02,08	1,29,30
2. Outstanding Loans and Advances					
a) Total	43,30	1,03,36	1,73,14	3,32,55	1,28,31
b) Non Interest Bearing	2,19	5,90	14,06	32,36	9,90
3. Annual Income					
a) Total	10,79	28,84	43,36	72,67	31,21
b) Interest Income from Loans and Advances	5,14	12,70	21,71	42,42	15,99
c) Transfers from Head Office	5,35	13,30	18,12	23,40	12,60
4. Annual Expenditure					
a) Total	10,67	25,35	39,11	62,10	27,75
b) Establishment Expenses	2,88	6,64	9,31	10,59	6,23
c) Interest Payments	6,41	15,09	22,11	36,89	16,32
d) Transfers to Head Office	1,38	3,62	7,69	14,62	5,20
5. Profit/Loss	12	3,49	4,26	10,57	3,46
6 No. of Bank Branches	2,92	2,14	1,39	1,14	7,59

Note: In items 3 & 4, other items of income and expenditure form the residual.

Table 21 shows the salient economic features in the working of bank branches in different areas, estimated from the sample survey of 759 bank branches. The Table brings out significant changes in the scales of operations, as we move from rural areas to metropolitan areas. Branches in semi-urban areas appear to have been closer to urban areas as regards volume of business, income and expenditure. Economies of scale were noticeable in expenditure on establishment expenses. The net profit of a bank branch showed an increase, from a meagre amount of Rs.12,000 in rural areas to Rs.10.57 lakh in metropolitan areas.

Table 22 gives the selected economic ratios in bank branch working. In the composition of deposits, metropolitan and urban branches, with higher proportions of current deposits, seem to have had an advantage over rural and semi-urban branches in respect of cost of funds. Simultaneously, they also had an advantage, with higher

C-D ratios, in yields on funds. However, this advantage was somewhat nullified because of higher proportion of stagnant (non-interest bearing) advances. Interest income formed 47.6, 44.0 and 50.1 per cent of total income of branches in rural, semi-urban and urban areas while it was 58.4 per cent in metropolitan areas. 49.6 and 46.1 per cent of branch income in rural and semi-urban areas was derived from transfer income from the Head Offices of banks. Even in metropolitan branches, this proportion was as high as one-third (32.2 per cent) of the total branch income. It is interesting to note that 'other' income constituted 8.1 - 9.9 per cent of total income in all the areas, except in rural areas where it was only 2.8 per cent.

Share of 'Establishment Expenses' in total branch expenditure fell down from 27.0 per cent to 17.1 per cent as we move from rural to metropolitan areas. Interest payments, accounting for about 60 per cent of total expenditure showed marginal variations in its shares in different areas. Though the composition of deposits showed larger proportion of interest-free deposits in metropolitan branches, the maturity pattern of fixed deposits and lower turnover on savings deposits might have pushed up interest costs for metropolitan branches. Transfer payments to Head Offices showed an increasing trend from 12.9 per cent in rural areas to 23.5 per cent in metropolitan areas, indicating more borrowal of funds by metropolitan branches from their Head Offices (Table 22).

TABLE 22. SELECTED RATIO IN BANK BRANCH WORKING

(Per cent)

Item	Rural	Semi-Urban	Urban	Metropolitan	All-India
1. Composition of Deposits	A	B	C	D	E
a) Current	5.7	8.7	14.2	20.8	13.9
b) Savings	36.3	34.8	27.8	23.4	29.2
c) Fixed	57.1	55.4	57.2	56.1	56.4
2. Credit Deposit Ratio	49.7	50.3	55.8	61.7	55.9
3. Proportion of stagnant advances in total advances	5.1	5.7	8.1	9.7	7.7
4. Composition of Income					
a) Interest Income	47.6	44.0	50.1	58.4	51.2
b) Transfer from Head Office	49.6	46.1	41.8	32.2	40.4
c) Other Income	2.8	9.9	8.1	9.4	8.4
5. Composition of Expenditure					
a) Establishment Expenses	27.0	26.2	23.8	17.1	22.5
b) Interest Payments	60.1	59.5	56.5	59.4	58.8
c) Transfers to Head Office	12.9	14.3	19.7	23.5	18.7

The economic indicators for bank branches classified by their age Groups and Areas revealed that the pattern generally conformed to the overall area pattern described earlier. However, a few interesting features may be noted. First, the proportion of stagnant (non-interest bearing) advances showed a decline from Group A to Group C. Possibly, for the younger group of branches, it may be too early to classify advances as stagnant. Share of interest income in total income was much higher in C Group of branches as compared with their counterpart branches in A Group in rural and semi-urban branches and consequently, the shares of transfer income from the Head Offices were lower in C Group. This was possibly because of higher C-D ratios for the C Group of branches. This situation was just the reverse in metropolitan areas. Share of establishment expenses in total expenditure was generally higher for C Group of branches as compared to the A Group in all the areas. The share of interest payments showed a differential pattern. Whereas in rural areas, it declined from A Group to C Group, it rose steeply from A Group to C Group in metropolitan areas (Table 23).

TABLE 23. SALIENT ECONOMIC INDICATORS BY AGE-AREA CATEGORY

(Per cent)

Item	Rural			Semi-Urban			Urban			Metropolitan		
	A	B	C	A	B	C	A	B	C	A	B	C
1. Outstanding Deposits												
a) Total	100	100	100	100	100	100	100	100	100	100	100	100
b) Current	6.4	5.3	5.6	7.5	9.7	11.3	14.1	13.1	14.7	22.3	18.1	18.8
c) Savings	32.6	38.3	37.3	35.0	34.7	34.4	27.0	28.2	29.2	21.2	29.7	23.8
d) Term	61.0	56.3	54.6	56.2	54.9	53.9	57.3	59.3	55.7	56.9	52.1	57.2
2. Outstanding Loans and Advances												
a) Total	100	100	100	100	100	100	100	100	100	100	100	100
b) Non-interest bearing	5.3	6.4	3.8	6.9	5.1	3.1	8.5	8.6	6.1	11.0	7.6	2.8
3. Income												
a) Total	100	100	100	100	100	100	100	100	100	100	100	100
b) Interest Income from Loans and Advances	39.8	48.2	53.6	41.5	45.5	51.0	48.3	65.4	42.0	63.7	47.7	43.8
c) Transfer from Head Office	60.5	47.6	42.6	52.0	34.5	43.1	42.1	27.8	53.2	27.0	49.8	40.1
4. Expenditure												
a) Total	100	100	100	100	100	100	100	100	100	100	100	100
b) Establishment Expenses	23.9	36.9	29.5	25.7	26.3	27.5	25.3	21.6	21.3	14.8	21.2	21.9
c) Interest Payments	64.1	51.1	55.8	60.5	56.8	59.6	51.0	62.7	68.3	54.0	70.0	71.9
d) Transfer to Head Office	12.0	12.0	14.7	13.8	16.9	12.9	23.7	15.7	10.4	31.2	8.8	6.2
5. No. of Branches in the Group	53	95	144	102	52	60	56	34	49	44	30	40

Based on average costs and yields on funds deployed by branches working in different areas, it was seen that, current deposits' share in total branch deposits was very low in rural and semi-urban areas as compared with urban and metropolitan areas and this was reflected in cost of funds. The ratio of interest payments to deposits was slightly higher at 7.4 per cent in rural areas as compared to 6.9 per cent in metropolitan branches. On the other hand, as a possible reflection of greater proportion of advances at lower interest rates in rural branches, the yield on advances of these branches was lower at 11.9 per cent as compared to 12.8 per cent in metropolitan branches. Thus, the rural branches were losers at both ends. The ratio of income to total turnover (deposits plus advances) was higher in semi-urban and urban branches at 9.3 and 9.0 per cent as compared to 8.3 per cent in rural and metropolitan branches. On the other hand, expenditure-turnover ratio was lower at 7.1 per cent in metropolitan branches compared to about 8 per cent in other areas. The fall in this ratio in metropolitan branches was mainly on account of relatively lower expenditure on staff salaries as compared to other areas (Table 24).

In order to study the economics of branch working in relation to the scale of their operations, all the sample branches were arranged according to an ascending order of their deposits and divided into ten decile classes and the average values of different parameters were studied for each decile class (Table 25). The deposit size showed a rapid increase in higher ordered decile classes, particularly the last class. In this last class, the income and expenditure also showed a sudden spurt. Broadly, branches could be divided into two categories, one with deposits below Rs.1.15 lakh (five decile classes from bottom) and the other with deposits above Rs.1.57 lakh (upper five decile classes). It is interesting to note that though the first category could be regarded as non-viable, the branches in this category had high C-D ratios resulting in surplus of net interest income. In the second category, the first four decile classes had low C-D ratios and the branches were deficit in net interest income. The last decile class had,

however, a significant surplus on interest account. Expenditure on staff salaries showed a steady increase along with the size of a branch in terms of deposit.

TABLE 24. INCOME AND EXPENDITURE RATIOS OF BANK BRANCHES

(Per cent)

Item	Rural	Semi-Urban	Urban	Metropolitan	All-India
1. Interest payment to deposits	7.4	7.3	7.1	6.9	7.1
2. Interest income to advances	11.9	12.3	12.5	12.8	12.5
3. Total income to turnover	8.3	9.3	9.0	8.3	8.7
4. Total expenditure to turnover	8.2	8.2	8.1	7.1	7.8
5. Establishment expenses	2.2	2.1	1.9	1.2	1.7

The ratios of components of income and expenditure to turnover (deposits plus advances) of branches arranged in decile classes showed that apparently there were no economies of scale in bank operations and the ratios of income and expenditure to aggregate turnover moved within a narrow band of about 7.5 per cent to 9.3 per cent, without showing any trend. Interest income as a ratio to branch advances showed an upward trend in higher deciles. This might be due to lower proportions of low yielding advances in total advances of large branches. On the other hand, there was a downward trend in cost of their deposits because of higher proportions of current deposits in total deposits. Expenditure on staff salaries as a ratio of turnover showed a definite down- trend with increasing turnover (Table 26).

TABLE 25. AVERAGE VALUES PER BRANCH BY DECILE GROUPS

(Amount Rs. Thousand)

Decile No.	Deposits	Advances	Income	Expenditure	Interest Income	Interest Payment	Staff Salaries	Profit/ Loss
1	20,63	23,79	3,69	3,96	2,71	1,53	1,30	-27
2	38,34	36,50	6,42	6,51	4,39	2,81	1,89	-8
3	57,76	53,08	9,66	9,21	6,29	4,24	2,56	45
4	82,61	54,26	10,93	10,84	6,47	5,98	2,77	9
5	1,14,72	67,88	14,56	15,22	8,33	8,28	3,43	66
6	1,57,96	84,50	21,79	20,62	10,80	10,95	4,38	1,17
7	2,05,19	82,15	23,81	23,26	10,11	14,83	5,21	54
8	2,74,78	1,24,06	32,84	29,87	14,76	19,19	6,35	2,97
9	3,91,95	1,59,96	46,54	43,12	20,26	28,16	8,43	3,41
10	8,70,18	5,67,56	1,34,07	1,10,22	72,39	62,51	16,54	23,85

TABLE 26. AVERAGE TURNOVER PER BRANCH AND INCOME-EXPENDITURE RATIOS BY DECILE GROUP

(Ratio in per cent)

Decile No.	Annual Turnover	Ratio to Turnover		Ratio to Advances	Ratio to Deposits	Ratio to Turnover
	(Rs. Thousand)	Income	Expenditure	Interest Income	Interest Payment	Staff Salaries
1	44,62	8.3	8.9	11.4	7.4	2.9
2	74,84	8.6	8.7	12.0	7.3	2.5
3	1,10,84	8.7	8.3	11.9	7.3	2.3
4	1,36,87	8.0	7.9	11.9	7.2	2.0
5	1,82,60	8.0	8.3	12.3	7.2	1.9
6	2,42,46	9.0	8.5	12.8	6.9	1.8
7	2,87,34	8.3	8.1	12.3	7.2	1.8
8	3,98,84	8.2	7.5	11.9	7.0	1.6
9	5,51,91	8.4	7.8	12.7	7.2	1.5
10	14,37,74	9.3	7.7	12.8	7.2	1.2

Considering the total income and expenditure of branches, it was observed that about 40 per cent of branches had incurred losses during the reference period. This proportion did not differ significantly in different groups of branches in semi-urban and urban branches. However, the proportion of loss making branches in the C Group of branches in rural and metropolitan areas was more than 50 per cent. This picture was altered completely when only the interest income and interest outgo was considered. Netting the two, it was seen that about 60 per cent of the branches had a net deficit on this account. In this case, the A Group of branches in rural and semi-urban areas and the C Group of branches in urban and metropolitan areas were worse-off as compared to other categories of branches. The deficit on interest account was turned into profit by Head Office transfer payments to rural and semi-urban branches, while in urban and metropolitan branches, non-interest net income could offset the deficit on interest account.

On the whole, it was seen that the profit/loss of bank branches did not depend on whether it was rural/urban/metropolitan branch. This was true, whether we considered the aggregate income-expenditure or only the interest income-outgo of a branch. Considering the age of a branch, it was observed that pre-1970 branches in rural and semi-urban areas and post-1975 branches in urban and metropolitan areas showed relatively poor performance based on net interest outgo.

The distribution of sample branches reporting negative interest income showed that about 89 per cent of the branches had C-D ratio of less than 50 per cent. About 8 per cent of such branches had C-D ratios between 50 to 60 per cent. This is also borne out by average cost and yield on funds deployed.

As stated earlier, the average cost of interest payment on deposits was about 7.1 per cent and interest income on advances was about 12.5 per cent. Thus, for a break-even point on interest earnings, the branch should attain a C-D ratio of 56.8 per cent. (For a deposit of Rs.100, the cost was Rs.7.1. If P is the C-D ratio, then income on advances is 100 x P x 0.125. For break even point, P = 7.1/12.5 = 56.8 per cent.) As the rural branches had slightly higher costs and lower yields, the break-even point of C- D ratio for rural branches would be slightly higher.

TABLE 27. PERCENTAGE DISTRIBUTION OF BRANCHES WITH SPECIFIED CHARACTERISTICS IN DIFFERENT DECILE GROUPS

Decile No.	PERCENTAGE OF BRANCHES TO TOTAL BRANCHES		
	Loss making branches*	Branches with negative interest income*	Branches with C-D ratio less than or equal to 70 per cent*
1	68.4	32.9	38.1
2	56.6	34.2	44.7
3	43.4	38.1	46.0
4	39.5	64.5	71.0
5	46.0	68.4	78.9
6	25.0	69.7	78.9
7	34.2	84.2	84.2
8	27.6	72.4	81.6
9	27.6	78.9	84.2
10	18.4	65.8	76.3

* Percentages relate to totals in each decile group.

It would be interesting to see how the profitability of a branch is affected by the size of deposits and the C-D ratio. Distribution of branches according to their profitability and C-D ratios in different decile groups reveals that the proportion of loss making branches showed a steep falling trend, from 68.4 per cent in the first decile to 18.4 per cent in the last decile (Table 27). However, if we consider only the interest income and expenditure of a branch, a totally different picture was obtained. On this criterion, the proportion of branches reporting negative

interest income showed a rising trend from 32.9 per cent in the first decile to more than 70 per cent in the higher deciles. This reverse trend can be explained by differentials in C-D ratios in different deciles. Table 27 shows that the percentage of branches reporting C-D ratio of less than 70 per cent exhibited a rising trend from 38.1 per cent in the first decile to 76.3 per cent in the last decile. This clearly brings out the combined impact of size of deposits and C-D ratio on the profitability of a bank branch. In the lower deciles, despite the larger proportion of branches with higher C-D ratio, the incidence of loss making branches was high. On the other hand, in higher deciles, even with preponderance of branches having low C-D ratios, the incidence of loss making branches was low.

Table 28 gives distribution of profit making branches in each quartile according to the ranges of C-D ratios. The overall position showed that the proportion of profit making branches to total branches increased from 40.1 per cent in the first quartile to 75.3 per cent in the last quartile. Considering distribution of branches within different quartiles, it was once more seen that in higher quartiles (i.e. branches with large deposits size), low C- D ratios did not affect the profitability of branches. In the lowest quartile, most of the branches could make profits only by attaining high C-D ratios. This concept of profitability is, however, based on aggregate income-expenditure of a branch which includes transfer payments between a branch and its Head Office.

TABLE 28. DISTRIBUTION OF PROFIT MAKING BRANCHES BY CREDIT-DEPOSIT RATIO FOR DIFFERENT QUARTILE RANGE

Credit-Deposit ratio (per cent)	1st Quartile	2nd Quartile	3rd Quartile	4th Quartile	All Quartiles
0 - 25	1.3	18.1	37.9	36.4	26.6
25 - 50	10.5	27.0	31.1	30.8	26.6
50 - 60	3.9	9.9	6.0	7.0	6.9
60 - 70	5.3	9.0	2.3	3.5	4.8
70 - 100	18.5	9.0	10.6	7.0	10.4
> 100	60.5	27.0	12.1	15.3	24.7
TOTAL	100.0	100.0	100.0	100.0	100.0
	(40.1)	(58.4)	(69.5)	(75.3)	(60.0)

Note: (1) The frequency distribution relates to only profit making branches in respective quartile range.
(2) The figure in brackets shows the percentage of profit making branches in each quartile range.

TABLE 29. PERCENTAGE OF PROFIT/LOSS MAKING BRANCHES FOR EACH QUARTILE AND FOR DIFFERENT CD RATIOS

Credit-Deposit	1st Quartile		2nd Quartile		3rd Quartile		4th Quartile		All Quartiles	
ratio (per cent)	Profit	Loss	Profit	Loss	Profit	Loss	Profit	Loss	Profit	Loss
0 - 25	6.7	93.3	57.1	42.9	67.6	32.4	65.8	34.2	60.6	39.4
25 - 50	25.0	75.0	44.1	55.9	64.1	35.9	80.0	20.0	56.2	43.8
50 - 60	18.8	81.2	68.8	31.2	72.7	27.3	62.5	37.5	54.2	45.8
60 - 70	23.5	76.5	71.4	28.6	75.0	25.0	100.0	0.0	55.0	45.0
70 - 100	36.8	63.2	47.6	52.4	77.8	22.0	83.3	16.7	54.5	45.5
> 100	63.0	37.0	83.3	16.7	84.2	15.8	95.6	4.4	75.5	24.5

Table 29 gives proportions of loss/profit making branches, according to two-way classification, viz., size of C-D ratio and quartiles according to the size of deposits. Here also, it was seen that the size of deposits impact was more dominant than the C-D ratio in determination of profitability of a bank branch. The proportion of profit making branches showed a significant improvement in the first quartile, as the C-D ratio increased. In higher quartiles, this trend was somewhat mild because the proportion of profit making branches was already high even in branches with low C-D ratios.

The summary findings of this Section are as follows :

a)The concept of branch profitability is different from the concept of bank profitability. Because of non-uniformity in transfer price

formula as adopted in different banks, it is necessary to consider the net interest income measure in addition to overall profits/losses of a branch, to get a better understanding of economic viability of a bank branch.

b)Whereas the deposits of a branch increased 6.2 times from rural areas to metropolitan areas, income went up 6.7 times and the expenditure 5.8 times.

c)As a proportion of total turnover, (deposits plus advances), the net profit of a rural branch was only 0.1 per cent as against 1.1 per cent for a semi-urban branch and 0.9 per cent for an urban branch. For a metropolitan branch, this percentage was 1.2.

d)In metropolitan areas, interest income contributed a much higher proportion in total income while the proportion of establishment expenditure in total expenditure was low.

e)Branches in C Group had generally higher proportion of expenditure on establishment. But in rural and semi-urban areas, these branches also had higher proportion of interest income in total income.

f)Semi-urban branches were more akin to urban branches than rural branches in various economic parameters of branch working.

g)Cut-off point in terms of size of deposits to determine the profitability of a bank branch appeared to be about Rs.1.15 lakh.

h)As a ratio to turnover, branch income showed a mild rising trend and branch expenditure showed falling trend according to increasing size of turnover. In particular, establishment expenditure showed a significant falling trend.

i)Profitability of a branch depended upon the size of deposits as well as its C-D ratio. But the size of deposits had a more dominant impact on the profitability. The break- even point in interest income-expenditure in relation to C-D ratio was 56.8 per cent.

FOOTNOTES

1.Time series data on number of bank branches, deposits and advances are available in various publications of the Reserve Bank of India. These data have been cogently presented in a summary form by Dr. N.K. Thingalaya, [Thingalaya]. We have liberally used these data. For the period June 1985, figures in our study would differ from those published elsewhere as our data relate to branches established upto June 1980 only. We have also noticed that the data on bank branches differ in different publications.

2.BSR statements are submitted by bank branches, as understood in a conventional sense, carrying regular banking functions of deposits and advances. Besides branches, banks also have a number of administrative offices. The Master File on bank branches includes such banking offices. In the text, however, the terms 'offices' and 'branches' have been used inter- changeably.

The classification of centres into rural, semi-urban, urban and metropolitan areas is based on the data available through Population Censuses and the classification is revised from time to time. There may be some difference in number of branches and centres arising out of closure of branches. Hence, the figures given in this Study may not tally with those published earlier. Moreover, the June 1985 data used in the study relate to branches established upto June 1980 only.

3.Reserve Bank of India Bulletin, May 1987. These ratios relate to all branches of banks and therefore, would differ from the ratios derived in our study which relate to the branches established prior to June 1980. This ratio worked out to 65.85 per cent (Table 17).

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ANNEXURE

The BSR surveys are being conducted since 1972. Special tabulations based on the data of these surveys were generated for the purpose of this Study but these tabulations were obtained only for the two periods, viz., ending June 1980 and June 1985. General tabulations on BSR, already published, present data according to the population groups in which the branches are located but not by age-groups.

In this Annexure, some selected tabulations published in the BSR volumes have been put together and presented as a time series from 1980 to 1985, so as to serve as a back-drop for the detailed tabulations given in this Study. All the tabulations relate to period ending June, unless otherwise stated.

TABLE A-1. AVERAGE AMOUNT OF DEPOSIT PER BRANCH AND PER ACCOUNT

(Amount Rs. lakh)

Area	1980	1981	1982	1983	1984	1985
			PER BRANCH			
Rural	26.8	30.4	31.1	34.9	37.6	36.4
Semi-urban	92.2	106.0	113.6	128.7	143.1	157.0
Urban	159.7	176.5	190.0	207.3	241.1	259.0
Metropolitan	330.8	373.0	381.7	431.0	508.6	550.3
Total	102.8	112.1	114.0	126.0	140.6	147.7
			PER ACCOUNT			
Rural	1,407	1,509	1,520	1,621	1,761	1,810
Semi-urban	2,032	2,144	2,274	2,390	2,594	2,702
Urban	2,808	2,942	3,188	3,342	3,649	3,848
Metropolitan	4,735	5,070	5,396	5,659	6,184	6,885
Total	2,689	2,814	2,934	3,067	3,382	3,593

TABLE A-2. AVERAGE AMOUNT OF CREDIT PER BRANCH AND PER ACCOUNT

(Amount in Rs. lakh)

Area	1980	1981	1982	1983	1984	1985
			PER BRANCH			
Rural	14.6	17.7	18.5	20.7	27.4	25.5
Semi-urban	43.5	53.0	57.6	65.5	79.8	86.4
Urban	95.8	108.4	114.8	122.6	154.1	150.1
Metropolitan	287.4	306.4	324.4	375.2	418.8	446.7
Total	69.1	74.5	76.9	85.3	99.4	100.4
			PER ACCOUNT			
Rural	2,697	3,197	3,390	3,553	4,269	4,299
Semi-urban	5,425	5,905	6,555	7,447	7,889	8,464
Urban	17,756	18,786	20,883	22,109	24,864	24,954
Metropolitan	84,397	85,785	95,830	93,464	1,06,537	1,08,717
Total	11,818	11,990	12,583	13,699	14,668	14,875

TABLE A-3. PERCENTAGE DISTRIBUTION OF DEPOSITS BY TYPE OF DEPOSIT

(Per cent)

Area	1980			1981			1982		
	Current	Savings	Term	Current	Savings	Term	Current	Savings	Term
Rural	7.7	43.3	49.0	7.5	43.3	49.2	7.3	42.2	50.5
Semi-urban	11.3	33.6	55.1	11.2	34.2	54.6	11.1	34.1	54.8
Urban	15.5	27.6	56.9	15.9	28.0	56.1	15.8	28.7	55.5
Metropolitan	19.9	21.5	58.6	20.6	22.2	57.2	20.9	23.7	55.4
Total	15.3	28.4	56.3	15.6	29.2	55.2	15.5	29.9	54.6

(Contd.)

TABLE A-3. PERCENTAGE DISTRIBUTION OF DEPOSITS BY TYPE OF DEPOSIT (Contd.)

(Per cent)

Area	1983			1984			1985		
	Current	Savings	Term	Current	Savings	Term	Current	Savings	Term
Rural	7.3	40.7	52.0	7.1	40.0	52.9	7.0	39.7	53.3
Semi-urban	10.8	34.0	55.2	10.4	34.6	55.0	10.0	35.0	55.0
Urban	14.7	27.3	58.0	14.6	28.1	57.3	15.5	27.6	56.9
Metropolitan	19.5	23.7	56.8	20.9	24.9	54.2	22.4	24.2	53.4
Total	14.6	29.4	56.0	15.1	29.9	55.0	15.9	29.5	54.6

TABLE A-4. PERCENTAGE SHARES OF AREAS IN AGGREGATE DEPOSITS AND AGGREGATE CREDIT

(Per cent)

Area	1980	1981	1982	1983	1984	1985
			DEPOSITS			
Rural	11.9	13.0	13.8	14.1	14.4	13.4
Semi-Urban	23.0	23.2	22.9	23.5	20.7	21.5
Urban	25.3	24.7	25.0	24.9	26.0	26.3
Metropolitan	39.8	39.1	38.3	37.5	38.9	38.8
Total	100.0	100.0	100.0	100.0	100.0	100.0
			CREDIT			
Rural	9.7	11.4	12.1	12.4	14.8	13.8
Semi-Urban	16.2	17.4	17.2	17.7	16.4	17.5
Urban	22.5	22.8	22.4	21.7	23.5	22.4
Metropolitan	51.6	48.4	48.3	48.2	45.3	46.3
Total	100.0	100.0	100.0	100.0	100.0	100.0

TABLE A-5. PERCENTAGE DISTRIBUTION OF DEPOSITS ACCORDING TO THE OWNERSHIP CLASS

(Per cent)

Type of Ownership	March 1978				March 1982				March 1984			
	Current	Savings	Term	Total	Current	Savings	Term	Total	Current	Savings	Term	Total
I. Government Sector	11.7	2.2	9.2	7.8	9.6	2.6	7.0	5.9	12.2	3.1	6.8	6.7
II. Corporate Sector	36.9	3.2	12.2	14.4	31.6	2.7	7.2	9.2	38.6	2.6	8.8	12.0
III. Other Institutions	34.1	5.3	9.6	12.9	31.8	3.4	7.3	9.5	26.4	4.5	8.4	10.0
IV. Individuals	17.3	89.3	69.0	64.9	27.0	91.3	78.5	75.4	22.8	89.8	76.0	71.0
V. Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

TABLE A-6. PERCENTAGE DISTRIBUTION OF CREDIT ACCORDING TO PURPOSE

(Per cent)

Area	Agri-culture	Indus-try	Transport Opera-tors	Personal loans and profession-al services	Trade	Others	Agri-culture	Indus-try	Transport Opera-tors	Personal loans and profession-al services	Trade	Others
			1980						1981			
Rural	52.2	20.7	5.1	7.6	7.4	7.1	50.0	21.2	6.3	7.3	8.0	7.2
Semi-urban	32.6	36.1	5.4	7.7	10.6	7.6	33.0	35.2	6.2	7.6	10.2	7.8
Urban	12.1	47.1	4.2	7.1	23.3	6.2	12.9	49.8	4.9	7.1	18.2	7.1
Metropolitan	3.3	57.3	3.9	3.7	28.3	3.5	4.7	60.4	4.1	4.2	23.0	3.7
Total	14.8	48.0	4.3	5.5	22.2	5.2	16.7	49.1	4.9	5.8	17.9	5.6
			1982						1983			
Rural	51.9	18.4	6.8	7.4	7.6	7.9	50.7	18.8	7.7	8.0	8.1	6.7
Semi-urban	32.9	34.3	6.8	8.1	9.6	8.3	30.5	35.9	7.7	8.6	9.9	7.4
Urban	12.4	48.3	5.4	8.4	18.9	6.6	13.1	45.9	5.8	8.3	20.9	6.0
Metropolitan	4.4	59.3	4.0	4.2	24.4	3.7	4.4	59.7	3.9	4.3	23.7	4.0
Total	17.2	47.3	5.1	6.2	18.5	5.7	16.5	47.5	5.5	6.4	18.8	5.3
			1984						1985			
Rural	51.2	17.4	7.1	7.2	8.9	8.2	52.8	16.1	6.5	7.0	10.8	6.8
Semi-urban	35.1	29.7	7.5	8.0	10.2	9.5	34.8	30.0	6.6	8.1	12.0	8.5
Urban	16.0	45.1	5.9	7.4	16.0	9.6	14.1	49.7	5.4	8.4	14.7	7.7
Metropolitan	1.8	53.3	3.5	4.5	32.7	4.2	1.6	49.4	3.2	4.6	36.3	4.9
Total	17.7	42.3	5.2	6.1	21.7	7.0	17.6	41.3	4.8	6.4	23.4	6.5

TABLE B-1. PERCENTAGE DISTRIBUTION OF BRANCHES OF COMMERCIAL BANK ACCORDING TO AREA

(Per cent)

Area	December 1950	December 1955	December 1969	December 1972	June 1973
Rural	12.3	9.3	22.3	36.0	35.8
Semi-urban	50.5	50.9	40.2	31.4	31.1
Urban	27.4	25.3	17.5	18.0	18.1
Metropolitan	9.8	14.5	20.0	14.6	15.0
Total	100.0	100.0	100.0	100.0	100.0

Sources :1. Debits to Deposit Account with Scheduled Banks (1947-1953), RBI Bulletin, June 1955.
2. Debits to Deposit Accounts with Scheduled Banks (1953-1956), RBI Bulletin, February 1958.
3. Banking Statistics - Basic Statistical Returns.

TABLE B-2. AVERAGE AMOUNT OF DEPOSIT AND CREDIT PER BRANCH

(Amount in Rs. lakh)

Area	December 1950	December 1955	December 1969	December 1972	June 1973	June 1975	December 1950	December 1955	December 1969	December 1972	June 1973	June 1975
	DEPOSIT PER BRANCH						CREDIT PER BRANCH					
Rural	4.7	5.4	7.9	10.6	12.1	15.6	2.6	2.9	3.0	5.0	5.7	8.1
Semi-urban	12.1	11.4	30.6	41.2	45.4	49.8	5.1	6.0	12.2	17.2	19.3	24.4
Urban	37.8	36.5	76.3	81.3	85.3	89.1	14.7	19.2	45.6	46.1	52.5	62.8
Metropolitan	148.7	123.6	152.2	183.1	179.6	201.3	103.1	94.0	161.4	160.7	165.1	177.4
Total	31.2	33.4	56.4	58.4	60.8	68.0	16.7	21.8	43.7	39.1	42.4	49.1

Sources:1. Debits to Deposit Accounts with Scheduled Banks (1947-1953), RBI Bulletin, June 1955.
2. Debits to Deposit Accounts with Scheduled Banks (1953-1956), RBI Bulletin, February 1958.
3. Banking Statistics - Basic Statistical Returns.

TABLE B-3. PERCENTAGE DISTRIBUTION OF DEPOSITS BY TYPE OF ACCOUNT

(Per cent)

Deposits	December 1950	December 1955	March 1969	December 1972	June 1973	June 1975
Current	56.6	47.2	25.5	21.4	21.9	19.0
Savings	16.9	17.3	24.6	25.6	26.2	25.9
Term	26.5	35.5	49.9	53.0	51.9	55.1
Total	100.0	100.0	100.0	100.0	100.0	100.0

Sources:1. Debits to Deposit Accounts with Scheduled Banks (1947-53), RBI Bulletin, June 1955.
2. Debits to Deposit Accounts with Scheduled Banks (1953-1956), RBI Bulletin, February 1958.
3. Statistical Tables Relating to Banks in India.
4. Banking Statistics - Basic Statistical returns.

TABLE B-4. PERCENTAGE SHARES OF AREAS IN AGGREGATE DEPOSITS AND AGGREGATE CREDIT

(Per cent)

Area	December 1950	December 1955	December 1969	December 1972	June 1973	June 1975	December 1950	December 1955	December 1969	December 1972	June 1973	June 1975
	DEPOSITS						CREDIT					
Rural	1.8	1.5	3.1	6.5	7.1	8.1	1.9	1.2	1.5	4.6	4.8	5.9
Semi-Urban	19.9	17.3	22.0	22.3	23.3	22.3	15.8	13.9	11.3	14.0	14.3	15.1
Urban	33.0	27.6	25.9	25.0	25.4	24.6	23.8	225.3	20.0	21.2	22.4	24.0
Metropolitan	45.3	53.6	49.0	46.2	44.2	45.0	58.5	62.6	67.2	60.2	58.5	55.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Sources:1. Debits to Deposit Accounts with Scheduled Banks (1947-53), RBI Bulletin, June 1955.
2. Debits to Deposit Accounts with Scheduled Banks (1953-56), RBI Bulletin, February 1958.
3. Banking Statistics - Basic Statistical Returns.

TABLE B-5. PERCENTAGE DISTRIBUTION OF DEPOSITS ACCORDING TO OWNERSHIP CLASS

(Per cent)

Type of Ownership	December 1951				December 1956				April 1961			
	Current	Savings	Term	Total	Current	Savings	Term	Total	Current	Savings	Term	Total
Government Sector	-	-	-	-	11.6	-	13.8	10.4	6.7	-	10.7	7.4
Corporate Sector	51.7	-	28.1	36.6	49.0	-	22.2	31.4	54.7	-	28.6	33.3
Other Institutions	18.9	3.6	17.8	16.1	12.7	3.1	8.8	9.7	14.8	3.0	12.0	11.5
Individuals	29.4	96.4	54.1	47.3	26.7	96.9	55.2	48.5	23.8	97.0	48.7	47.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Type of Ownership	March 1969				March 1972			
	Current	Savings	Term	Total	Current	Savings	Term	Total
Government Sector	4.8	-	8.0	5.2	7.9	-	9.8	6.9
Corporate Sector	59.7	-	16.1	23.2	55.4	-	15.9	21.3
Other Institutions	16.0	5.5	16.5	13.7	14.6	3.2	18.7	13.8
Individuals	19.5	94.5	59.3	57.9	22.1	96.8	55.6	58.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Statistical Tables Relating to Banks in India.

TABLE B-6. PERCENTAGE DISTRIBUTION OF CREDIT ACCORDING TO PURPOSE

(Per cent)

Purpose	March 1951	March 1952	April 1968	March 1968	December 1972	June 1973	June 1975
Agriculture	2.1	2.0	0.4	2.2	9.0	9.0	10.8
Industry	32.9	35.0	50.6	67.5	61.1	57.4	58.4
Transport Operators	0.6*	1.1*	2.0*	-	1.6	1.8	2.3
Personal Loans and Professional Services	7.3	7.6	7.6	-	5.0	1.7	5.4
Trade	40.4	41.1	31.3	19.2	14.9	18.6	16.6
Others	16.7	13.2	8.1	11.1+	8.4	11.6	6.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

* Public Utilities (e.g. Transport and communications, gas, electricity, etc).
+ Includes Transport Operators and Services and Personal Loans.
Sources:1. Statistical Tables Relating to Banks in India.
2. Banking Statistics - Basic Statistical Returns.

WHO BENEFITS FROM GOVERNMENT EXPENDITURE IN INDIA? A CASE STUDY OF ANDHRA PRADESH

K.N. Reddy

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An attempt is made here to answer whom did Government expenditures benefit? What category of expenditures benefited whom? And what was the direction of expenditures over a period of time: 1975-76 to 1984-85? Issues involved in estimating expenditure incidence are discussed in detail. Some of the important findings are: i)Both in terms of per household benefits and in terms of effective benefit incidence, high income group benefited most in 1975-76 and 1984-85. ii)The benefit distance as between low, middle and high income groups narrowed down during 1975-76 to 1984-85. iii)But the narrowing down of benefit distance was marginal.

INTRODUCTION

It is well-known that the benefits of expenditure by government do not spread to all income groups evenly.

The question, whom did government expenditure benefit? has engaged the attention of scholars for the past quarter century. The World Bank has published a number of Studies on the subject.[1] A few studies are available in India too. Bhattacharya and Dey [Bhattacharya et. al., 1965] and in 1974, Maitra, Dey and Bhattacharya [Maitra et. al., 1974] quantified the distribution of benefits of government expenditure for the State of West Bengal. Their conclusion was that on the whole the provision of public education and health services served to reduce the disparities in levels of living even when the distribution appeared to favour the rich. Ahuja [Ahuja, 1978] estimated the distribution of benefits from government expenditure for three districts - Kanpur (in Uttar Pradesh), Gaya (in Bihar) and Thanjavur (in Tamil Nadu) - on the basis of a sample survey conducted for the year 1974-75. Gupta [Gupta,1980] estimated the distribution of benefits from the combined expenditure of the Central Government, State Governments and Union Territories by using "money flow approach". Misra [Misra, 1982] worked out the distributional impact of government expenditure for three talukas in Gujarat. Maitra [Maitra, 1986] estimated "budget incidence" for West Bengal. But these studies seem to suffer either from narrow coverage or if the coverage was somewhat reasonable, from methodological weaknesses of unexplained subjective considerations. The analysis of data from a survey on social consumption conducted by the National Sample Survey in 1980-81 is available. It pertains only to a few States.[2]

The present study relates to the State of Andhra Pradesh, which was not covered by the analysis based upon NSS data referred to above. Andhra Pradesh represents a typical middle income developing State, with Rs.1,996 per capita income at current prices in 1984-85, corresponding somewhat to the all India average of Rs.2,355 [Ministry of Finance, 1987, p. 113] Presumably the results of this study will be of wider application.

Only, allocable expenditures, (accounting for 80 per cent of total expenditure) are covered and non-allocable expenditure which cannot be allocated to any specific income groups, such as for example, expenditure on 'general services' like organs of State, fiscal services, interest payments and servicing of debt, administrative services, pensions and miscellaneous general services are excluded (Table 1).

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The next section is devoted to certain questions of methodology followed. In the third section, the criteria used for allocation of benefits among different income groups are described. In the fourth section, the main findings and their implications to policy making are presented. Finally, Notes and Tables which could not be incorporated in the text are given in the end.

BASIC ISSUES IN ESTIMATION

In estimating the distribution of benefits of government expenditures, there are five issues on which clarity is needed: (1) expenditure incidence vs. benefit incidence, (2) the base to which incidence is related, (3) classification of expenditures, (4) time lags in the accrual of benefits and (5) criteria for distribution of expenditure benefits. We shall consider these in that order.

(1) Expenditure Incidence vs. Benefit Incidence:

Quite often, expenditure incidence and benefit incidence are interchangeably used in spite of considerable difference in their meanings. The pioneer in the field of incidence analysis, Musgrave, R.A., [Musgrave, 1959] distinguished expenditure incidence from benefit incidence. According to him expenditure incidence refers to changes in the distribution of income disposable for private use and benefit incidence refers to the benefits derived from public services. Elaborating the same, Dean J.M. observed that "benefit incidence concerns with the distributional impact of the benefits received from government expenditure while expenditure incidence concerns with the effect on private disposable income induced by changes in relative factor and commodity prices". [Dean, 1980 p. 10] Essentially, benefit incidence corresponds to the definition employed in tax incidence analysis: it concerns with transfer of resources to the recipients through public expenditure. The value of expenditure to the recipients need not be equal to the cost of providing it - that is, burden imposed (taxes) may exceed the benefit provided.

In most of the studies of this type,[3] it is the benefit incidence that is employed and not the expenditure incidence; the reason being that expenditure incidence is not amenable for measurement. To use expenditure incidence, knowledge about the impact of expenditure on factor prices and product prices and their impact on various income groups is essential. And such an estimate of first round, second round and third round effects on incomes is most difficult and a general equilibrium model need be constructed which again is complicated and not amenable for empirical testing. Therefore, we too have employed benefit incidence only.

Benefit incidence can be estimated in several ways and each one of them might give rise to different results. Three approaches may be mentioned. One is the "money flow approach", second is the "benefits received approach" and the third is the "benefits valued approach". Briefly they are as follows:

(i) Money flow approach: In money flow approach, government outlays are allocated amongst direct recipients of the outlays: particular individuals, particular institutions, particular sectors or particular States. It establishes an accounting identity of costs with benefits. For instance, defence personnel and contractors benefit from defence expenditure, doctors, nurses and hospital building contractors benefit from medical expenditure; judges, magistrates, public prosecutors and concerned personnel benefit from expenditure on justice and teachers and researchers and the contractors of educational buildings benefit from educational expenditure. Extending the same logic to art and culture, it is the artists who benefit from expenditure on art and culture. A typical study that employed this approach is that of Gupta. A.P. [Gupta, 1980] Gupta illustrates that if A is hired to work as a doctor in New Delhi's Safdarjung Hospital, the expenditure representing his salary and allowances can be assumed to benefit A and those dependent on him and argues that "after all those who receive payments from government are better off with these payments than without them". The weakness of this approach is that it neglects the subsequent beneficiaries to whom the expenditure is indeed directed.

(ii) Benefits received approach: In Benefits received approach (some times called as "on whose behalf expenditures are made approach") people are treated as beneficiaries of expenditure and the direct recipients of expenditure (e.g., government servants, teachers, doctors, judges) as the inputs for the services/output. Like the money flow approach, the benefits received approach also establishes accounting identity but with a difference. The difference is in focusing attention on outputs (or services rendered). It scores a number of points over money flow approach: (a) it is consistent with tax incidence analysis in which every contribution to revenue reduces income of an individual by an equal amount; (b) the aesthetic value of equating taxes and benefits in the context of benefit incidence is appealing; and (c) it indicates the seriousness with which policy objectives are pursued. For example, if policy statements refer to educational expenditure as a means of reducing income inequality, then it is relevant to find out whether the average educational expenditure per family decreases with an increase in average income or on the other hand whether it increases in absolute amount or in percentage of income. Such researches can be illuminating especially when they reveal that moneys were not spent on those segments of the economy for which it was meant.[4]

(iii) Benefits valued approach: Unlike the earlier two approaches, benefits valued approach dispenses with the accounting framework of valuation, that is, services are not valued at their cost of production. Instead, it attempts to find out how the beneficiaries value the services enjoyed by them. For example, in valuing benefits of education, it is estimated how much the student or his family is willing to pay for his education if it were to be purchased in a free market.

The difficulty with this approach is that several assumptions have to be made with respect to utility functions of consumers. It is just impossible to construct utility curves of people for each and every item of expenditure. Two studies are worth mentioning in this context: one by Aaron M and McQuire M [Aaron, et. al., 1970] and the other by Maital S. [Maital,1973]. Aaron and McQuire took pains to illustrate it but no one has ventured to employ it for estimating benefit incidence.[5]

After careful consideration of all the three aforesaid approaches, "benefits received approach" has been adopted here inspite of certain limitations.

(2) The Base to which Expenditure Benefits are Related:

The most common practice is to treat income as the base. Unfortunately, no official estimates of income distribution are available for the State we are concerned with. The only estimates, somewhat reliable, are the ones estimated by the National Council of Applied Economic Research (NCAER) [NCAER, 1980]. But they relate to all India level and that too to a far distant year, namely 1975-76. To generate income distribution data afresh, survey has to be conducted and its cost would be enormous. Hence as a second best alternative, the National Sample Survey (NSS) consumer expenditure data are taken as the base.

For 1975-76, the NSS data of 32nd round on consumer expenditure has been depended upon. The NSSO has classified people into 14 classes on the basis of their monthly per capita expenditure in Rs.0-10, 10-15, 15-20, 20-30, 30-35, 35-40, 40-50, 50-60, 60-70, 70-80, 80-100, 100-150, 150-200 and 200 and above. We have grouped them into three size-classes, namely, those with per capita monthly expenditure of Rs.0-70, Rs.70-200 and Rs.200 and above. We shall refer to them as the low, the middle and the high income groups respectively. The low income group defined above represents roughly those who are below the poverty line as defined by the Planning Commission. For, Planning Commission's definition of poverty line was Rs.65 for rural and Rs.75 for urban at 1977-78 prices which (in 1975-76) is roughly equal to Rs.0-70 expenditure category. For 1984-85, NSS data of 38th round on consumer expenditure collected for (January-December) 1983 have been used. The 38th round data were classified into 13 expenditure classes - Rs.0-30, 30-40, 40-50, 50-60, 60-70, 70-85, 85-100, 100-125, 125-150, 150-200, 200-250, 250-300 and 300 and

above. Taking into account the price rise, our three income groups now are Rs.0-100, Rs.100-300 and Rs.300 and above respectively. The low income group corresponds to those below the updated poverty line for 1980-84 as defined by the Planning Commission, namely, Rs.101.80 per capita expenditure per month for rural areas and Rs.117.50 for urban areas [Planning Commission, 1986].

(3) Classification of Public Expenditure:

For a meaningful analysis of benefit incidence, some classification of public expenditure is necessary. For example, Musgrave, R.A. et. al. [Musgrave et. al., 1974] classified expenditure into transfers, allocable expenditures and other expenditures. Gillespie I.W. [Gillespie, 1965] classified expenditures into allocable expenditure - subdivided into transfers and expenditures on goods and services - and general expenditures; Selowsky Marcelo [Selowsky, 1979] classified expenditures into public services whose consumption by individuals/households can be identified and those whose consumption cannot be so identified; Meerman Jacob [Meerman, 1979] classified expenditures into public overhead expenditures, true general expenditures and specific expenditures. More recently, Tax Foundation [Tax Foundation, 1981] classified expenditures into general benefit expenditures and specific benefit expenditures. We have classified expenditures into (i) Public Overhead expenditures (POEs), (ii) General expenditures (GEs) and (iii) Specific expenditures (SEs) [Meerman, 1978].

POEs are those that are essential to maintain economic activity and without which no civilised business or living is possible - for example, expenditures on police, jails and justice, etc. GEs are those whose benefits accrue, by and large, to all groups of people, but in their case identification as to which group of people (middle and high income groups) the benefits accrue to is difficult to establish - for example, as in the case of multipurpose river projects, roads and bridges, information and publicity, family welfare. SEs are those whose benefits accrue to certain classes, or to different classes in different degrees and their identification with reference to whom they accrue is easy to infer as, for example, in the case of expenditures on agriculture, irrigation projects, education, civil supplies, dairy development, etc. In short, POEs are considered non-allocable expenditures and GEs and SEs are considered allocable expenditures; though allocation of GEs to different groups is somewhat difficult.

4) Time Lags:

Time lags between incurring of expenditures and the accrual of benefits is another issue that needs attention. Not all the expenditures confer benefits in the same years; for example, benefits from capital expenditure accrue over a period of time and very little in the year in which it is incurred. Some scholars tried to solve the problem through unit cost method (that is cost per unit of services) but could not succeed fully and finally had to omit capital expenditures from their purview or treat them as current expenditures.[6] We have taken the view that all expenditures - current and capital expenditures - confer benefits in the year in which they are incurred. Presumably, this will not distort the inter-se benefit incidence.

(5) Criteria for Distribution:

The last issue is that of criteria for distribution of benefits to different income groups. In the choice of criteria, there are two approaches (i) inductive approach and (ii) deductive approach. In inductive approach, relevant data are collected by means of specific surveys. Typical example is that of survey conducted for the study made by Jacob Meerman [Meerman, 1979]. In the deductive approach, hypotheses are formulated on the accrual of benefits from different categories of expenditures, and tested empirically if necessary and assumptions made on that basis. The assumptions thus made are applied to distribute expenditure benefits. This approach has been most common and we have followed this approach (Tables 2 to 7).

APPLICATION OF CRITERIA FOR DISTRIBUTION OF EXPENDITURE BENEFITS

In all, twenty-six criteria were developed and the same were applied for apportionment of different expenditures among different income groups. Elaborate exercise has been carried out

to identify relevant criteria for major heads and their sub-heads. A brief account of the criteria used for various expenditures will be useful.

Based on the expenditure pattern shown in Table 1, details of expenditure under each head were collected from Detailed Demands for Grants (as presented to the Legislative Assembly) of various departments and reclassified into broad categories - Public Overhead Expenditures (POEs) and Allocable Expenditures (AEs). POEs are excluded from our purview, since they are Non-Allocables. We concentrate on rest of the expenditures (allocable expenditures) consisting of those on social and community services, economic services and grants-in-aid/contributions which accounted for 80 per cent of total expenditures in 1984-85 and 78 per cent of total expenditure in 1975-76.

The way the expenditures were allocated to different income groups is described below.

Social and Community Services:

Social and community services consist of a number of items and each one of them adds to the real income of people directly or indirectly. First is *Education, Art and Culture.* Education includes elementary education, secondary education, special education, (that is, promotion of Urdu, Sanskrit and adult education), pre-university education (intermediate), university and other higher education, technical education, sports, youth welfare, grants to research institutions, medical education and agricultural education. Benefits from these expenditures accrue to the students receiving education and the families supporting them. Hence, we have distributed expenditure on primary education, secondary education, pre-university education (intermediate), university and other higher education, technical education, medical education, agricultural education in proportion to the percentage share of each group - low, middle and high income - enrolled in each of the education levels.[7] Art and culture, and sports and youth welfare are hypothesized to benefit all people but only in proportion to their consumer expenditure (the proxy to their income) and hence were distributed on the basis of percentage distribution of monthly per capita consumer expenditure among different income groups.[8] With respect to special education (promotion of Urdu, Sanskrit and Adult Education), and grants to research institutions it is hypothesized that they benefit all people irrespective of income levels and hence were distributed in proportion to the distribution of population by income groups.[9]

The second one is *Medical Services.* It relates to expenditure on providing medical facilities through Allopathy, Homeopathy, Unani and Naturopathy. It is hypothesized that benefits from these expenditures accrue to patients - i.e., the actual recipients of the services - and their families dependent on them. Since different systems of medicine enter into preference functions of different people, a uniform or a single criterion appears to be inappropriate. For example, Allopathy is a system of medicine used by most of the people and hence expenditure on it was distributed in accordance with pattern of consumption expenditure among different income groups.[8] This implies that accessibility to government medical services (where Allopathy is common) is somewhat related to income levels. That is, higher the income, higher the accessibility to hospitals and medicines. Expenditure on other systems of medicine cannot be assumed in the same way since no specific preference function is seen in relation to income levels. Certain systems, like Unani, Homeopathy, Ayurvedic, are preferred partly on their cheap availability and partly on their specific usefulness. Hence, expenditure on these was distributed on the basis of percentage share of each income group in population.[9]

The third is *Family Welfare Services* including maternity and child health, compensation, maintenance of sterilisation of beds, post-mortem, Indian population project, mass education and training, research and statistics. It is not possible to point out exactly the beneficiaries as the services included apply to all classes. Hence it was distributed on the basis of the population of each income group in total population.[9]

The fourth is *Public Health, Sanitation and Water Supply*. It consists of expenditure on food and drug administration, prevention of air and water pollution, training of nurses, health visitors, midwives, sanitary inspectors, health education and publicity, manufacture of sera vaccine, public health laboratories, health transport and services. Sewerage and water supply consists of expenditure on establishment charges of the Chief Engineers (PH) and subordinate staff in districts, maintenance expenditure of Rajendranagar, Bhadrachalam and Mahadragadda water supply schemes, assistance to the Metropolitan works for water supply schemes, maintenance of water supply schemes in twin citites of Hyderabad and Secunderabad, grant-in-aid to municipal corporation for operation of rigs and maintenance of hand pumps. It appears that these items of expenditure benefit all classes but only in accordance with their economic (income) capacities. Hence these are allocated in proportion to consumption expenditure among different income groups.[8]

The fifth is *Housing*. It relates to housing in general and government residential buildings. The former (housing in general) benefits specific income groups, whereas the latter benefits all. In the case of 'housing in general', expenditure was mainly on loans advanced. It is our impression that high and middle income groups had availed of these loans more than low income groups.[10] Therefore, it was apportioned in proportion to consumer expenditure of different income groups.[8] With respect to expenditure on government buildings, etc., it is felt that it benefits one and all, and hence was allocated in proportion to percentage share of each income group in total population.[9]

The sixth one is *Urban Development* which relates to expenditure on urban development particularly on assistance to municipalities, corporations, etc. to meet extra-expenditure on account of revision of pay and allowance of their employees, town and regional planning. This seems to benefit all urban income groups; but with bias towards middle and high income groups as it helps to appreciate the property values and makes lives of propertied class more comfortable. Hence this was distributed in proportion to consumer expenditure of different income groups in urban areas.[11]

The seventh is *Social Security and Welfare*. It relates to expenditure on (i) civil supplies, (ii) welfare of scheduled castes, (iii) welfare of scheduled tribes, (iv) welfare of other backward classes, (v) women and child welfare, (vi) relief and rehabilitation and (vii) other social security and welfare programmes. Obviously any single criterion for all of them will not be appropriate. Therefore, criteria appropriate to each item are chosen as mentioned below.

Civil supplies refers to expenditure on consumer subsidies (price subsidy). It benefits all families utilising subsidised rice distribution scheme, according to which a family whose annual income is Rs.6,000 or less is eligible for facilities of the scheme. Hence benefits from this expenditure should be attributed to low income category only. But it seems that people with income more than Rs.6,000 per annum also availed of the facility by dubious methods. According to a study conducted for Vijayawada city, about 40 per cent of the households benefiting from the programme had annual income of Rs.6,000 or more [Satyasundaram, 1987]. Hence only 60 per cent benefits were attributed to low income group while 40 per cent were divided between middle and high income groups in proportion to their respective shares in population.

Welfare of Scheduled Castes includes expenditures on education, health, housing and allied schemes, economic betterment schemes, promotion of inter-caste marriages, legal aid to the victims of atrocities, centrally sponsored schemes pertaining to scheduled castes. The beneficiaries of this expenditure are largely scheduled castes and hence it was allocated to different income category on the basis of percentage distribution of scheduled castes households in total households of Andhra Pradesh.[12]

Welfare of Scheduled Tribes and Welfare of Other Backward Classes relates to expenditures similar to the one cited above. The beneficiaries are by and large scheduled tribes and backward classes only and hence these were distributed in

proportion to the percentage of scheduled tribes and backward classes households respectively in total households of Andhra Pradesh.[13]

The remaining items like expenditure on secretariat, information and publicity and labour and employment were distributed in accordance with the percentage share of each income class in population on the assumption that they benefit all equally.[9] Expenditures on other social and community services - like public gardens, upkeep of shrines, temples, public exhibition, fairs, pilgrimage beyond India, etc. - seem to benefit all people but in proportion to their incomes. Hence this was distributed in proportion to consumer expenditure pattern of different income groups.[8]

Economic Services

This again is a major head consisting of several items. One such item is *cooperation and others.* It relates to expenditure on direction, administration and audit of cooperatives, housing cooperatives, labour cooperatives, farming cooperatives, industrial cooperatives, warehousing and marketing cooperatives and irrecoverable loans written off. The objectives of cooperatives are such that they benefit mostly all categories of people, and therefore belong to GEs. Expenditures on these were allocated in proportion to consumer expenditure of different income groups.[8]

The second is *Agriculture and Allied Services.* It relates to expenditure on agriculture, schemes for small and marginal farmers and agricultural labourers, soil and water conservation, area development, minor irrigation, animal husbandry, dairy development, food, fisheries, community development and forests. Not all of them benefit all classes equally. Hence criteria appropriate to each item were adopted and the same are described below.

a. Agriculture (other than schemes for small farmers and agricultural labourers). This item covers land reforms (i.e., development of land assigned to scheduled tribes), multiplication and distribution of seeds, manures and fertilisers, agricultural farms (demonstration farms), high yielding varieties programme, plant protection, commercial crops, drought prone areas programmes, extension and farmers' training, agricultural marketing and quality control, horticulture, tribal areas sub-plan, national project for bio-gas development, etc. It needs no special mention that expenditures on these items benefit land owning agriculturists. Therefore, expenditures on agriculture have been distributed in proportion to the area owned by households, in different income groups.[14]

b. Scheme for small and marginal farmers and agricultural labourers is designed to benefit small and marginal farmers and agricultural labourers. Hence expenditure on this scheme was apportioned in proportion to the area owned by households in different income groups.[15]

c. Soil and water conservation includes soil survey and testing, education and training (soil conservation training centre, study tours, etc.), soil conservation schemes, tribal areas sub-plan, dry farming projects, etc. The benefits from this accrue to households who own agricultural land and hence expenditures on this item were allocated in proportion to the area owned by different income groups.[14]

d. Area development refers to development of area covered by Nagarjuna Sagar Project, Right and Left bank canals, Sriram Sagar Project, Tungabhadra Project, Vamsadhara Project and Dry land farm development, Tribal area sub-plan, Construction of feeder channels, etc. Obviously, the beneficiaries of this expenditure are households owning land and hence was allocated on the same basis as mentioned for soil and water conservation.

e. Minor irrigation relates to investigation and development of ground water resources, construction and deepening of wells and tanks, subsidy to Andhra Pradesh Irrigation Development Corporation for providing water, lift irrigation schemes, other minor irrigation works, charges on account of tools and plants transferred from the irrigation, navigation, drainage and quality control project and tribal sub-area plans. Benefits from these seem to accrue to those farm households whose lands are irrigated under wells, tanks, rivers and tubewells and hence were allocated in proportion to net irrigated area (flow and lift combined) owned by different income groups.[16]

f. Animal husbandry relates to expenditure on cattle development, poultry development, sheep and wool development, piggery development, veterinary education, veterinary services and animal health, veterinary research, investigation and statistics, fodder and feed development, marketing and publicity and tribal area sub-plan. Expenditure on the first four, namely, cattle development, poultry development, sheep and wool development, and piggery development seem to benefit owners of the respective animals, and hence were allocated in proportion to the number of cattle, poultry, sheep and goats and pigs owned by households in different income groups.[17] With respect to veterinary education, veterinary research, etc., it may be noted that these were already dealt with under education. In regard to other expenditures, it is assumed to benefit all categories who own livestock, and hence were allocated in the same manner as explained in this para.

g. Dairy development relates to grants-in-aid given to Andhra Pradesh Dairy Development Cooperative Federation Limited (APDDCF). It benefits largely the consumers of milk and milk products supplied through APDDCF. Unfortunately, there is no information of the products of APDDCF. Hence, expenditure on this item was treated as GE and allocated in proportion to expenditure on consumption of milk and milk products by households in different income groups.[18]

h. Food is a general expenditure and benefits all categories of people and hence was distributed in proportion to population in different income groups.[19]

i. Fisheries refers to expenditure on fishery development and covers administration, research and training, inland fisheries, fishing harbour and land facilities, processing, preservation and marketing facilities, mechanisation and improvement of fishing crafts, tribal area sub-plan and other expenditures such as scheme for relief and welfare of fishermen in general and of fishermen belonging to scheduled castes, laying of fishing village, access roads, etc. Obviously, the beneficiaries of these items are fishermen. A proper way of distributing expenditures on these items would be to do so in proportion to fishermen' households in each income group, but unfortunately, no such information is available. And in the absence of such information we had treated it as general expenditure and distributed it in proportion to population in different income groups.[9]

j. Community development relates to training of village development officers, assistance to Panchayatraj institutions, election to Panchayats and revision of electoral rolls thereof; nutrition, rural works programme [Roads, Buildings, Telugu Grammena Kanthi Patham, Rural Labour Employment Guarantee Programme (RLEGP), NREP, etc.], minor irrigation, forests, housing for scheduled castes, scheduled tribes and other weaker sections, community centres, roads, etc. The objective of these items is community welfare and naturally it is difficult to treat them as SEs. These are treated as GEs and hence were allocated in proportion to population in different income groups.[9]

k. Forest relates to expenditure on forest preservation and development. Some of the items included here are, research, education and training, forest conservation and development, survey of forest conservation, plantation schemes, farm forestry, forest produce, communications and buildings, preservation of wild life, tribal areas sub-plan, other expenditures connected with project formulation circle, publicity, digging and deepening of forest wells, etc. Benefits from these accrue to all people because of their influence on environment. Hence they were treated as GEs and distributed on the same basis as was done for community development.[9]

The third item of *Economic Services* is *Industry and Minerals*. It includes several items, most of which are of GEs category and only one is of SEs category - namely, government distilleries. The former category relates to development of industry including mines and metallurgical industries, village and small industries, and industrial research and development. It appears that benefits from mine and minerals and machinery and engineering industries accrue to all people (GEs) and hence were allocated in proportion to population in different income groups.[9] As for rest of the GEs, they seem to

benefit different income groups differently and hence expenditure on these was distributed in proportion to the consumer expenditure of different income groups.[8] Regarding government distilleries, it is assumed that benefits largely accrue to the consumers of alcohol and other narcotics. Hence this was distributed in proportion to the expenditure on pan, tobacco and milk products in different income groups.[20]

The fourth item of *Economic Services* is *Water and Power Development* which includes multipurpose river projects, irrigation and power projects. Expenditure on multipurpose river projects accrue largely to households whose lands are irrigated. But to a small extent it benefits others also irrespective of land owned by them because multipurpose projects prevent the recurrence of floods and destruction of useful assets. Therefore, 75 per cent of it was allocated in proportion to net irrigated area owned by different income groups (by treating it as SE)[21] and the remaining 25 per cent of it was allocated in proportion to population by income groups (by treating it as GE).[22] Expenditure on irrigation is assumed to benefit households whose lands are irrigated and hence was allocated in proportion to net irrigated area owned by farm households in different income groups. Expenditure on power projects relates to power development and power distribution and includes expenditure on hydro electric schemes Machkund Hydro-electric (joint) Scheme, Tungabhadra Hydro-electric (joint) Scheme, Balimela Dam (joint project), Srisailam Hydro-electric Scheme and general expenditures pertaining to direction and administration. The benefits from these schemes accrue to consumers of electricity and hence should be allocated in proportion to consumption of electric power. However, in the absence of information on power consumption, expenditure on power devoted to agricultural sector was distributed in proportion to net irrigated area owned by different income groups.[23] Expenditure on power devoted to domestic purposes was distributed in proportion to consumer expenditure on fuel and light by different income groups.[24] Expenditure on power devoted to industrial sector was distributed in proportion to total consumer expenditure in different income groups.[25] Expenditure devoted to rest of the purposes was distributed in the same manner.[25]

The fifth item of *Economic Services* is *Transport and Communication.* It relates to expenditure on navigation, roads and bridges, shipping, civil aviation and tourism. Benefits from these seem to accrue to all people in proportion to their level of income. Hence expenditure on these were allocated in proportion to consumer expenditure of different income groups.[25]

Two other items of allocable expenditure are *grants-in-aid and others not classified.* The former relates to assignments to local bodies and panchayatraj institutions. No evidence is available as to the exact beneficiaries of these grants, and hence allocated in proportion to population of different income groups (by treating them as GEs)[9] The items not classified relate to foreign trade and export promotion, drainage, secretariat, etc. and appear somewhat related to income capacity of people. Expenditure on these were allocated in proportion to consumer expenditure of different income groups (by treating them as GEs).[8] The expenditure on the remaining items was allocated in proportion to population in different income groups.[9]

Thus several criteria (summarised in Table 8) were used for apportioning benefits of expenditure. We believe that, given the data constraint, our procedure is as good as could be.

MAIN FINDINGS

1.Taking *allocable public expenditure* as a whole, per household benefits went largely to high income group in 1975-76 and 1984-85. As of 1984-85, per household benefits to high income group were 12.68 times higher than low income group and 8.45 times higher than middle income group (Table 9). This was contrary to the protestations made by policy makers during 1975 to 1986.[26] However, during 1975-76 and 1984-85, there was a small swing in favour of low income group. This can be seen from the change in benefit distance - that is the magnitude of benefits received by middle and high income groups in comparison to low income group - between 1975-76 and 1984-85. The benefit

distance among low, middle and high income groups which was 1.0 : 2.1 : 20.0 in 1975-76 came down to 1.0 : 1.5 : 12.6 in 1984-85.

2.Taking the expenditures by function, there was marked variation in the benefits accrual to different income groups in 1975-76 and 1984-85 and over a period of time. For example,

3.Per household *benefits from expenditure on education* (primary, secondary, pre-university, and higher, technical, medical and agricultural) went largely to high income group in 1975-76 and 1984-85; but as between low, middle and high income groups benefit distance came down from 1.0 : 0.7 : 2.5 in 1975-76 to 1.0 : 0.4 : 0.9 in 1984-85 (Table 10). Much of the reduction in benefit distance was on account of expenditure on primary education only.

4.Per household *benefits from expenditure on medicine*, etc., accrued largely to high income group followed by low and middle income groups in 1975-76 and 1984-85. The interesting point is, unlike education, the direction of expenditure on medicine did not undergo appreciable change during the decade. The benefit distance as between low, middle and high income groups which was 1.0 : 3.3 : 99.0 in 1975-76 came down marginally to 1.0 : 1.9 : 35.5 in 1984-85. Per household *benefits from expenditure on housing* went largely to high income group, both in 1975-76 and 1984-85, but came down significantly in 1984-85. The benefit distances, as between low, middle and high income groups which was 1.0 : 1.0 : 11.3 in 1975-76 got reduced to 1.0 : 0.7 : 1.9 in 1984-85 (Table 11). With respect to *benefits from urban development* also the pattern was roughly the same. The benefit distance as between low, middle and high income groups came down from 1.0 : 4.8 : 156.9 in 1975-76 to 1.0 : 1.6 : 24.0 in 1984-85 (Table 12).

5.Per household *benefits from expenditure on agriculture and allied services* accrued to high income group. Within this major head, expenditure on agriculture and area development seem to have accentuated the inequalities while expenditures on scheme for small and marginal farmers and agricultural labourers, animal husbandry and dairy development reduced inequities. The benefit distance, as between low, middle and high income groups (on account of agricultural and allied services) which was 1.0 : 5.8 : 36.2 in 1975-76 came down to 1.0 : 3.1 : 5.4 in 1984-85 (Table 13).

6.Per household *benefits from expenditure on industry and minerals* went largely to high income group in 1975-76 and 1984-85. However, middle income group became worse off in the process as can be seen from benefit distance, among low, middle and high income groups, which moved from 1.0 : 1.8 : 41.6 in 1975-76 to 1.0 : 0.7 : 8.2 in 1984-85. Per household *benefits from expenditure on water and power development* also went largely to the high income group. It is evident from the benefit distance among low, middle and high income groups which was 1.0 : 7.9 : 121.5 in 1975-76 moved to 1.0 : 12.1 : 212.8 in 1984-85. Per household *benefits from expenditure on transport and communication* accrued largely to high income group in 1975-76 and 1984-85. But there was an indication of a shift towards low income group. It is evident from the movement of benefit distance, among low, middle and high income groups, from 1.0 : 4.8 : 154.3 in 1975-76 to 1.0 : 2.3 : 45.9 in 1984-85 (Table 14).

7.On the whole, not only in terms of per household benefits but also in terms of 'effective benefit incidence' (benefits as percentage of respective consumer expenditures which some scholars prefer), [Gillespie, 1965 p. 145] high income group benefited most in 1975-76 and 1984-85. In terms of effective benefit incidence the accrual of benefits to low, middle and high income groups was 17.93 per cent, 15.30 per cent and 56.30 per cent respectively in 1975-76 and 79.70 per cent, 48.26 per cent and 203.50 per cent respectively in 1984-85 (Table 15). That is, during 1975-76 and 1984-85 effective benefit incidence for high income group went up by 147.20 percentage points while for low and middle income groups it went up by 61.77 percentage points and 32.96 percentage points respectively. The truth is that benefits from public expenditures continued to flow in favour of the high income group.

IMPLICATIONS

These findings have a variety of implications. Firstly, they question the very intentions of government, since the difference between what the policy makers had said at the time of presentation of budgets and what had actually happened when

expenditures were made, turned out to be significant. Secondly, they lend credence to the oft repeated prediction of some radicals that public expenditures in a mixed economy benefit the interests of the wealthy class.[27] Thirdly, they lend support for the widespread dissatisfaction among middle income families which may be the result of their subjective valuation of benefits from public expenditure. Fourthly, they may be viewed as guidelines for making amendments or corrections to the existing expenditure policy. To whichever implications one wants to give importance and if the constitutional obligations and the objectives of planning have any meaning to the common man, the direction of expenditures in Andhra Pradesh needs immediate change.

One of the arguments usually advanced in this context is the dichotomy between growth versus equity. It is generally agreed that both the objectives are essential for the orderly development and long term interests of the State. One cannot be sacrificed altogether in favour of the other. At the present moment what is required is the eradication of extreme poverty by making suitable changes in the direction of expenditure policy. As Richard Bird, a well known fiscal expert put it, in one of his lectures at the National Institute of Public Finance and Policy, poverty can be eliminated by expenditure only and not by taxation.

As of 1984-85, government expenditure has become a significant fraction - about 25 per cent of State Domestic Product (SDP). Over a decade ago, it was hardly 17 per cent (Table 16). The share of SDP received by the poorest - people below the poverty line - seems to be relatively very small or rather negligible. Hence changes in the direction of expenditure, particularly education (secondary, university, technical, medical and agricultural education) health care, social welfare, agriculture and allied activities, towards lower income group is called for. It may be useful to remember in this context the observation made by Selowsky about a decade ago: in a country where government expenditure and the income of the poorest 20 per cent of the population account for 25 per cent and 5 per cent respectively of the gross national product (GNP) reallocating 10 per cent of the fiscal budget to this group would increase its income by 50 per cent. Such a reallocation is one of the most feasible options. It does not represent an important trade-off with the growth rate, even if half of it were to be made at the expense of public investment and assuming that no asset would be created in the poorest group, the growth rate of GNP would decline only 0.25 percentage points [Selowsky, 1979, p. 3]. It may be mentioned that this observation could be applicable to other States as well, particularly to Uttar Pradesh, Bihar, Orissa, Karnataka, Madhya Pradesh and Maharashtra where patterns of expenditures are somewhat similar to Andhra Pradesh.

FOOTNOTES

1. See particularly the studies made by (i) Meerman, 1979 and (ii) Selowsky, 1979.

2. It may be noted that some analysis on social consumption expenditure has been made recently in *Sarvekshana* but that was only for Uttar Pradesh, Maharashtra, West Bengal, Himachal Pradesh, Delhi and Mizoram. No analysis of social consumption expenditure data was made for Andhra Pradesh. See Rajagopalan and Joshi, 1988, Pp. 1-17.

3. See particularly (i) Peacock and Browning, 1954, Pp. 56-75, (ii) Rottier and Albert, 1954, (iii) Conard, 1954, (iv) Gillespie, 1965, (v) Musgrave, et. al., 1974, (vi) Reynold and Smolensky, 1977, (vii) Mann, 1976, (viii) Snodgrass, 1974, (ix) Peppard, 1975, and (x) Tax Foundation Incorporated, 1981.

4. For elaborate reasoning see Dewulf Luc.

5. For a detailed discussion on this see Peppard Jr., 1975.

6. See (i) Ahuja, 1978, (ii) Meerman, 1979 and (iii) Selowsky, 1979.

7. Based on the empirical findings of (i) Reddy, 1988 and (ii) Challam, 1982 and 1986. Seven criteria were evolved and some were applied to respective expenditure items:

(i) Percentage distribution of students enrolled in primary education by income groups, (ii) Percentage distribution of students enrolled in secondary education by income groups, (iii) Percentage distribution of students enrolled in pre-university education by income groups, (siv) Percentage distribution of students enrolled in university education by income groups, (v) Percentage distribution of students enrolled in medical colleges (MBBS) by income groups, (vi) Percentage distribution of students in technical education (BE) by income groups, (vii) Percentage distribution of students enrolled in agricultural education by income groups For detailed explanation as to how these criteria were applied to respective heads see Reddy and Sudhakar, 1989.

8. This criterion - Percentage distribution of monthly per capita consumer expenditure by income groups (Rural and Urban combined) - is based on NSS per capita consumer expenditure data of 32nd Round (July 1977 - June 1978) published in *Sarvekshana*, January 1986 and 38th Round (January - December 1983) published in *Sarvekshana*, April 1986 for Andhra Pradesh.

9. This criterion (percentage distribution of population by income groups) is based on NSS data of 32nd Round and 38th Round mentioned above. Based on these data of percentage share of persons in each expenditure class, the total population (projected population of 1977 for 1977-78 and 1981 Census population for 1984-85) was distributed among different expenditure categories. Then on this basis, percentage share of population of each income group - low, middle and high - was derived. This exercise was done separately for rural and urban and then combined them to get aggregate picture of population by income groups.

10. Based on interviews held with a number of people at Hyderabad and Delhi.

11. Same as that of note number 8, but percentage distribution of monthly per capita consumer expenditure in urban areas only has been taken into account.

12. This criterion - percentage distribution of scheduled castes households to total households of Andhra Pradesh - is derived on the basis of percentage distribution of scheduled castes in total households of scheduled castes, scheduled tribes, backward classes and others, published by Government of Andhra Pradesh for 1981-82, p.5.

13. These criteria - percentage distribution of scheduled tribes households in total households of Andhra Pradesh and percentage distribution of backward castes' households in total households of Andhra Pradesh - are derived on the same basis as mentioned in note number 12. However, it may be noted that the percentage distribution of scheduled castes households and scheduled tribes households and backward castes' households was derived on the basis of the Report brought out by the Government of Andhra Pradesh as shown in the table below:

Percentage Distribution of Scheduled Castes Households, Scheduled Tribes Households and Backward Castes Households by Income Groups, (1975-76 and 1984-85)

Monthly Per Capita Expenditure (Rs.)	Scheduled Castes Households	Scheduled Tribes Households	Backward Castes Households
Low Income (Below Rs. 80)	70.64	75.55	66.57
Middle Income (Rs.80 & above)	29.36	24.45	33.43
High Income	0.00	0.00	0.00

14. This criterion - percentage distribution of area owned by households by income groups - is derived on the basis of NSSO's 32nd Round (1971-72) on 'Survey Results on Land Holdings', published in *Sarvekshana*, Vol. No. 314, January-April 1982 and NSSO's 37th Round (January-December 1982) published in *Report on Land Holdings*, Government of India, Ministry of Planning, Department of Statistics, March 1987. For detailed working of this criteria see the Authors' book, 1989 mentioned at note number 7.

15. This criterion - percentage distribution of area owned by households of small and marginal farmers and agricultural labourers by income groups - was derived on the same basis as mentioned in note number 14.

16. This criterion - percentage distribution of net area irrigated (flow and lift combined) by income groups - is derived on the basis of net area irrigated by size class of holdings estimated by NSSO, Government of India, through its 31st Round Survey. It may be noted that holdings of less than 0.5 hectares were considered as low income group, holdings of 0.5 to 4.00 hectares were considered as middle income and holdings of 4.00 to 10.00 and above hectares were considered as high income group. For further explanation see the Authors' book mentioned in note number 7.

17. In all, five criteria were evolved; (i) percentage distribution of cattle and buffaloes (owned by households) by income groups; (ii) percentage distribution of poultry (owned by households) by income groups; (iii) percentage distribution of sheep and goats (owned by households) by income groups; (iv) percentage distribution of pigs (owned by households) by income groups; and (v) percentage distribution of 'livestock' (owned by households) by income groups based on the estimates made by NSSO through its 26th Round Survey on livestock. For more details see the Authors' book mentioned in note number 7.

18. This criterion refers to percentage distribution of 'livestock' by income groups mentioned in note number 17.

19. This criterion - percentage distribution of consumption of milk and milk products by income groups - was derived on the basis of monthly per capita consumer expenditure by different expenditure groups revealed through NSSO 32nd Round (July 1977 - June 1978) published in *Sarvekshana*, January 1986 and 38th Round (January - December 1983) published in *Sarvekshana*, April 1986. The pattern of consumption of dairy products is closely related to the pattern of consumption of milk in the size groups of different income groups.

20. This criterion - percentage distribution of consumption of 'pan, tobacco and intoxicants' by income groups - was derived on the basis of monthly per capita consumer expenditure by different expenditure groups revealed through NSSO 32nd Round (July 1977 - June 1978) published in *Sarvekshana*, January 1986 and 38th Round (January - December 1983) published in *Sarvekshana*, April 1986. The assumption is that the consumption of products coming from distilleries is closely related to the pattern of consumption of fuel and light by size groups of income classes.

21. This criterion was applied on the same basis as metioned in note number 16.

22. This criterion - percentage distribution of population by income groups - was applied on the same basis as mentioned in note number 9.

23. This criterion was applied on the same basis as mentioned in note number 16.

24. This criterion - percentage distribution of consumption of fuel and light by income groups - was based on the same source mentioned in note number 16 and was applied on the same basis mentioned in note number 16. The assumption is

that the distribution of power to domestic purposes was closely related to the distribution of consumption of fuel and light by size groups of income classes.

25. This criterion was applied on the same basis as mentioned in note number 8.

26. The statements made by the Finance Ministers of Andhra Pradesh may be remembered here. The following are some of them:

"I would like to say that our consistent aim has been to accelerate the development of the economy of the State and reduce regional disparities and create a just social and economic order." (Budget speech, Finance Minister, 15th February 1975, page 33).

"I may assure the House that we shall make every endeavour to see that the various schemes, for which resources have been provided in a much larger measure than before are implemented efficiently and expeditiously. It is only then that we can hope to achieve our goal of growth with social justice in which task, I am sure we shall have the support of all sections of this House." (Budget speech, Finance Minister, 17th June 1977, page 26).

"An attempt had been made to orient the plan to give the necessary fillip to schemes intended for the welfare of the weaker sections, to tackle the problem of unemployment and to provide basic amenities to the underprivileged people living in rural and urban areas." (Budget speech, Finance Minister, 14th August 1978).

"For decades our State has been investing a major chunk of its resources on power and irrigation sectors without commensurate returns. Economies basically being a judicious use of the resources which have alternative use, the result of such a trend of investment has been the neglect of the vulnerable and weaker sections of society. We believe that time has come to rectify this neglect." (Budget speech, Finance Minister, 9th March 1983, pages 3-4).

"I had an occasion to place before you, in detail, the policy and philosophy of this government in my last budget speech. I had called it a development with a difference, not a soul less development, with a distinct purpose, viz., the welfare of the poor." (Budget speech, Finance Minister, 21st February 1986, page 3).

"To my government, poverty alleviation is both a sacred constitutional responsibility and a moral imperative. It is the conviction of my government that the planning process should fully reflect this objective." (Address by Governor of Andhra Pradesh, 19th February 1986, page 4).

27. It may be recalled in this connection the observations of some experts on the political economy of development planning in India: Kurien, C.T., 1978, p 111, pointed out that "whatever may have been the intentions with which the public sector has been established and strengthened, it has served very little of a 'social' purpose, if this is meant at least the economic welfare of the majority of the people of the country. On the other hand, it has conferred special advantage to a select number of individuals and groups, increased product for their sake and enabled them to augment their hold over resources and thus to exercise greater economic power over others. It must be pointed out too that this is neither an accidental nor an unexpected consequence. Given the structure and working of the system, it is an inevitable consequence, however strong the claims may be to the contrary". Bardhan, P., 1984, p 8, observed that "when it comes to reduction of economic inequalities, the standard explanation of unsatisfactory performance often runs in terms of the political clout that the rich have in resisting encroachments on their vested interests. But rapid economic growth should be consistent with the objective of self-aggrandizement of most sections of the Indian rich today. Yet what prevents them from managing its collective achievement? Liberal economists point the accusing finger at the stifling bureaucratic regulations and the economic inefficiencies they spawn. Radical economists emphasize the inherent weaknesses of dependent capitalism in the 'periphery' of a global accumulation process, and the limitations on the size of domestic effective demand for industrial goods that mass poverty entails". Chakravarty, S., 1987, p 84, observed that "radical economists of varying pursuasion see in Indian Planning an attempt by the ruling elite to deprive the masses of the surplus product they have themselves generated".

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TABLE 1. BUDGETARY EXPENDITURE OF GOVERNMENT OF ANDHRA PRADESH

(Rs.lakh)

	1975-76				1984-85			
	Expenditure on revenue account	Expenditure on capital account	Total Expenditure	Per cent of total	Expenditure on revenue account	Expenditure on capital account	Total Expenditure	Per cent of Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
I. *General Services*	14954.42	70.21	15024.63	22.32	56392.66	806.37	57199.03	20.26
a) Organs of State	701.73	-	701.73	1.04	3529.98	-	3 529.98	1.25
b) Fiscal Services (Collection of taxes)	1422.98	-	1422.98	2.11	4154.35	-	4154.35	1.47
c) Interest payments and servicing of debt	5173.02	-	5173.02	7.68	15383.67	-	15383.67	5.45
d) Administrative Services	6060.11	-	6060.11	9.00	21216.62	-	21216.62	7.52
e) Pensions and miscellaneous general services	1596.58	-	1596.58	2.37	12108.04	-	12108.04	4.29
f) Public Works	70.35		70.35	0.10	-	806.37	806.37	0.28
g) Stationery & printing and other admn. services	-	(-)0.14	(-)0.14	0.002	-	-	-	
II. *Social & Community Services*	20859.75	965.44	21825.19	32.42	116738.82	1229.95	117968.77	41.7
a) Education, Art and Culture *	12194.32	52.36	12246.68	18.19	49175.18	150.61	49325.79	17.47
b) Medical **	2343.00	82.84	2445.84	3.63	8172.69	217.60	8390.29	2.97
c) Family Welfare	626.89	-	626.89	0.93	3381.17	-	3381.17	1.20
d) Public Health, Sanitation and Water Supply	1530.97	368.40	1899.37	2.82	9467.73	71.14	9538.87	3.38
e) Housing	107.55	78.06	185.61	0.27	322.08	50.25	372.33	0.13
f) Urban Development	199.04	-	199.04	0.29	2161.14	-	2161.14	0.75
g) Social Security	2667.73	361.22	3028.95	4.50	3669.56	56.60	36750.16	13.02
h) Relief on account of natural calamities	431.00	-	431.00	0.64	4928.89	-	4928.89	1.75
i) Others	759.25	22.56	781.81	1.16	2436.37	683.75	3130.12	1.10
III. *Economic Services*	13501.74	15785.17	29286.91	43.50	69315.17	33962.37	103277.54	36.58
a) Co-operation	507.35	544.19	1051.54	1.56	4652.02	3877.22	8529.24	3.02
b) Others	307.80	-	307.80	0.46	870.41	-	870.41	0.31
c) Agriculture and Allied Services @	5761.54	6190.41	11951.95	17.75	36395.45	3025.10	39420.55	13.96
d) Industry and Minerals	620.14	990.63	1610.77	2.39	704.33	2800.54	4504.87	1.60
e) Water and Power Development	4572.76	6967.67	11540.43	17.14	18853.62	21665.63	40519.25	14.35
f) Transport and Communications	1732.15	1084.01	2816.16	4.18	6839.34	2573.25	4412.59	3.33
g) Others	-	8.26	8.26	0.01	-	20.63	20.63	0.01
IV. *Grants-in-aid/ Contributions*	1188.49	-	1188.49	1.76	3835.01	-	3835.01	1.36
GRAND TOTAL	50504.40	16820.82	67325.22	100.00	246281.65	35998.69	282280.34	100.00

Notes: * Includes expenditures or Medical education and Agricultural education which were originally shown under sub-heads of Medical and Agriculture and Allied services respectively.

** Excludes expenditure on medical education as the same is included under the item, education, art and culture.

@ Excludes expenditure on agricultural education as the same is included under the item, education, art and culture.

Sources: 1. Government of Andhra Pradesh, *Andhra Pradesh Budget in Brief 1978-79.*

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TABLE 2. CRITERIA FOR DISTRIBUTION OF EXPENDITURE BENEFITS IN THE STUDY OF MUSGRAVE ET. AL.

Expenditure	Benefits assumed to fall on
1. *Allocable expenditures*	
(i) Education, higher	Families of students enrolled
(ii) Education, elementary and secondary	Families of students enrolled
(iii) Highways -(A)	
(a) Business portion (1/3)	Consumers in general
(b) Household portion (2/3)	Households with auto-operation expenses
(iv) Health and hospitals:	
(a) Public health	All families and unrelated individuals equally
(b) Hospitals	Patients in funded hospitals
(v) Agricultural expenditures	Farm proprietors
(vi) Public assistance	Public assistance recipients
(vii) Social insurance and retirement	Recipients of social insurance and retirement payments
(viii) Unemployment insurance benefits	Recipients of unemployment compensation
(ix) Veteran disability and pension	Recipients of veteran's disability and pension
(x) Interests - (B)	
(a) Portion paid to individual	Households earning interest income
(b) Portion paid to institutions	Holders of equity in recipient institutions
2. *Other Expenditures/General Expenditure*	
(xi) Assumption -- a	Families in proportion to total income
(xii) Assumption -- b	Families in proportion to taxes paid
(xiii) Assumption -- c	All persons equally

Musgrave, R.A., Case, K.E., and Leonard, II (1974). "The Distribution of Fiscal Burdens and Benefits", *Public Fanance Quarterly*, Vol.2, No.3, July, p. 283.
(A) Two-third allocated to households on the basis of estimated gasoline consumption by private passenger cars as percentage of total consumption (including e.g., trucks, buses, taxicabs).
(B) Includes interest paid to individuals and governments.

TABLE 3. CRITERIA FOR DISTRIBUTION OF EXPENDITURE: BENEFITS IN THE STUDY OF GILLESPIE, I.W.

	Base
I. *Specific Expenditure*	
1. Highways	Various
2. Education	relevant
3. Social security	assumptions
4. Veterans	
5. Agriculture	
6. Public health	
7. Public housing	
8. Miscellaneous	
II. *General Expenditure*	
1. In proportion to family's income	Various
2. In proportion to broad income	relevant
3. In proportion to capital income	assumptions
4. In proportion to disposable income.	

Gillespie, I.W., Effect of Public Expenditure on the Distribution of Income, *Essays on Fiscal Federation*, ed. Musgrave, R.A., Studies of Government Finance, the Brookings Institution, Washington.

TABLE 4. CRITERIA FOR DISTRIBUTION OF EXPENDITURE BENEFITS IN THE STUDY OF REYNOLDS, MORGAN AND SMOLENSKY, EUGENE

Category	Distributor by income class
1. General expenditure	1/2 Households, 1/2 income
2. Cash transfers	Respective distributors for cash transfers
3. Interest	Interest income
4. Agriculture	Farm income
5. Elementary and secondary education	Children under 18
6. Higher education	Expenditure on higher education
7. Highways	Automobiles owned
8. Labour	Wages and salaries

Reynolds, Morgan and Smolensky, Eugene (1977), *Public Expenditures, Taxes and the Distribution of Income: The United States, 1950, 1961, 1970*, New York: Academic Press.

TABLE 5. CRITERIA FOR DISTRIBUTION OF EXPENDITURE BENEFITS IN THE STUDY OF MANN ARTHUR J.

Functional Expenditure Category	Benefits Received by
1. Education	25 per cent by all society. Remaining 75 per cent to families of students: pre-university students and university students
2. Health	All society, hospital and clinic patients, children in school lunch program, business firms, family residences
3. Social welfare	Social welfare recipients
4. Agriculture	Farm families, farm family income
5. Labour relations	Wage and salary earners
6. Transportation	Property owners, family highway users (autos), consumers of transported goods, air and marine passengers, public bus passengers
7. Communication	Telegraph and telephone users
8. Housing	Residents of housing projects
9. Public debt	Bond holders
10. Social insurance:	
(i) OASDHI	Direct recipients
(ii) Pensions	Direct recipients
(iii) Unemployment	Direct recipients
(iv) Disability	Direct recipients
11. "General"	
(i) Expenditures:	
(a) assumption - 1	Families in proportion to broad income
(b) assumption - 2	Families in proportion to numbers
(c) assumption - 3	Families in proportion to disposable money income

Mann, Arthur J. (1976), "The Fiscal System and Income Distribution: The Case of Puerto Rico", *Public Finance*, Vol.IV, No.3, July,pp. 339-66, Table 5.

TABLE 6. CRITERIA FOR ALLOCATION OF EXPENDITURE BENEFITS IN THE STUDY OF TAX FOUNDATION, INCORPORATED

Expenditure	Basis of Allocation
General Benefit Expenditure	
1. National defence & international affairs	Alternative Methods:
2. Other general benefits expenditures-	(i) Number of families and unrelated individuals
a. General government	
b. Postal service	
c. Civilian safety (police, fire, etc.)	(ii) Half family money income before taxes, and half number of families and unrelated individuals (standard assumptions)
d. Transportation (excluding highways)	
e. Commerce and finance	
f. Health and sanitation	
g. Other and miscellaneous	
h. Natural resources	
i. Public utilities	
Specific Benefit Expenditure	
1. Education -	
a. Elementary and secondary	Number of children under 18
b. Higher education	Higher education expenditures of families
2. Public assistance relief and other welfare	Income from public social assistance
3. Labour and manpower	Wages and salaries
4. Veteran's benefits and services	Veterans' benefits
5. Highways	Half auto operation expenditures and half total current consumption
6. Agriculture	Farm money income before taxes
7. Net interest	Interest income
8. General revenue sharing and other general fiscal assistance (Federal)	Distribution of benefits of state and local expenditures, excluding social insurance
9. Social insurance benefits	Public unemployment and social security benefits

Tax Foundation, *Government Finance Brief No. 31, Allocating Tax Burdens and Government Benefits by Income Class, 1972-73 and 1977*, Connecticut Avenue, N.W. Washington, D.C. 20009, 1981.

TABLE 7. BASES OF ALLOCATION OF EXPENDITURE BENEFITS IN THE STUDY OF AARON, BIRD, ADLER, BHATIA AND SAHOTA

Country, author & year of publication	Expenditure Category							
	General benefit expenditure	Health	Education	Interest on public debt	Plan investment and development expenditure	Transportation	Agriculture	Social Welfare
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. Brazil Aaron, 1980	Three alternatives: number of households: income; marginal utility of money	Number of households	Index based on number of households, average size, and years of education of the head	-	-	Partly by business income, upper-income families' income	Income of high income classes	Wages and salaries, pension income
2. Columbia Bird, 1970	Income	Most to middle-income	Non-university: largely to two highest quartiles. University: to highest quartile	Highest quartile	-	-	-	Middle income group
3. Guatemala Adler and others, 1952	Income	Equal per capita	Equal per capita	-	Income	-	-	-
4. Puerto Rico Bhatia, 1960	Protection expenditure: 50 per cent income, 50 per cent capital. General administration in proportion to all	Partly to income, per capita for lower-income families	University expenditure to income class of students. Other to families with school-age children (income below $5000)	Interest recipients	Income	-	Agricultural	Income of lower-income classes
5. Panama Sahota, 1972	According to the merit of each particular expenditure or on per capita basis or by income	Equal per capita rural/urban classified	25 per cent on equal per capita: 75 per cent students per income class (urban/rural emphasis)	Two alternatives: not allocated; interest recipients	Specifically selected formulas for the different outlays	Partly by income and partly by equal per capita	Agricultural income	-

Source: Wulf, De Luc (1975), "Fiscal Incidence Studies in Development Countries: Survey and Critique", *IMF Staff Papers*, Vol.XXII, No.1 (March), Pp. 116-17.

TABLE 8. CRITERIA FOR DISTRIBUTION OF EXPENDITURE BENEFITS

Category of Expenditure	Criteria for Distribution
A. GENERAL EXPENDITURES	
I. *Social & Community Services*	
1. Education:	
a. Special education (Promotion of Urdu, Sanskrit & Adult education)	Percentage distribution of population by income groups
b. Sports and youth welfare	Percentage distribution of monthly per capita consumer expenditure by income groups
c. General expenditure (Grants to research institutions)	Percentage distribution of population by income groups
d. Art and culture	Percentage distribution of monthly per capita consumer expenditure by income groups
2. Medical:	
a. Allopathy	Percentage distribution of monthly per capita consumer expenditure by income groups
b. Ayurvedic	Percentage distribution of population by income groups
c. Homeopathy	
d. Unani	
e. Other systems	
f. Tribal areas sub-plan (Health programme for tribal areas)	
3. Family Welfare:	
4. Public Health, Sanitation and Water Supply:	Percentage distribution of monthly per capita consumer expenditure by income groups
5. Housing:	
a. General	Percentage distribution of monthly per capita consumer expenditure by income groups
b. Government residential buildings	Percentage distribution of population by income groups
6. Urban Development:	Percentage distribution of monthly per capita consumer expenditure (urban areas only) by income groups
7. Social Security & Welfare:	Percentage distribution of population by income groups
a. Women & child welfare	
b. Relief & rehabilitation	
c. Social welfare (education & welfare of handicapped, etc.)	
d. Other social security and welfare programmes	
8. Relief on Account of Natural Calamities:	
9. Others:	
a. Secretariat	
b. Information and publicity	
c. Labour & employment	
d. Other social and community services	Percentage distribution of monthly per capita consumer expenditure by income groups
II. *Economic Services*	
1. Co-operation:	Percentage distribution of monthly per capita consumer expenditure by income groups
2. Agricultural and Allied Services:	
a. Food	Percentage distribution of population by income groups
b. Fisheries	
c. Community development	
d. Forests	

(Contd.)

TABLE 8. (Contd.)

Category of Expenditure	Criteria for Distribution
3. Industry and Minerals:	
a. General expenditure b. Mines & metallurgical industries c. Consumer industries d. Village & small industries	Percentage distribution of monthly per capita consumer expenditure by income groups
e. Mines & minerals f. Industrial research and development g. Machinery & engineering industries	Percentage distribution of population by income groups
h. Petroleum, chemical & fertilizer industries i. Industrial & financial institutions j. Government ceramic factory	Percentage distribution of monthly per capita consumer expenditure by income groups
4. Water & Power Development:	
a. Multi-purpose river projects (25%)	Percentage distribution of population by income groups
b. Power projects -	
i. Industrial ii. Others	Percentage distribution of monthly per capita consumer expenditure by income groups
5. Transport & Communications:	
a. Navigation b. Roads & bridges c. Ports, lighthouses and shipping d. Civil aviation e. Tourism	Percentage distribution of monthly per capita consumer expenditure by income groups
6. Grants-in-aid Contributions:	Percentage distribution of population by income groups
7. Others:	
a. Drainage b. Secretariat & economic c. Scientific services and research d. Other general and economic services	Percentage distribution of population by income groups
e. Foreign trade and export promotion	Percentage distribution of monthly per capita consumer expenditure by income groups
B. SPECIFIC EXPENDITURES	
I. *Social & Community Services*	
1. Education:	
a. Primary education	Percentage distribution of students enrolled in primary education by income groups
b. Secondary education	Percentage distribution of students enrolled in secondary education by income groups
c. Pre-university education (Intermediate)	Percentage distribution of students enrolled in pre-university education by income groups
d. University & other higher education	Percentage distribution of students enrolled in university education by income groups
e. Technical education	Percentage distribution of students enrolled in B.E. by income groups
f. Medical education	Percentage distribution of students enrolled in Medical College by income groups
g. Agricultural education	Percentage distribution of students enrolled in agricultural education by income groups

(Contd.)

TABLE 8. (Contld.)

Category of Expenditure	Criteria for Distribution
2. Social Security and Welfare:	
a. Civil supplies	Percentage distribution of households availing public distribution facilities
b. Welfare of Scheduled Castes	Percentage distribution of Scheduled Castes households
c. Welfare of Scheduled Tribes	Percentage distribution of Scheduled Tribes households
d. Welfare of other classes	Percentage distribution of Backward Class households
II. *Economic Services*	
1. Agricultural & Allied Services:	
a. Agriculture (other than scheme for small farmers and agriculture labourers)	Percentage distribution of area owned (by households) by income groups
b. Scheme for small and marginal farmers and agriculture labourers	Percentage distribution of area owned (by small and marginal farm households) by income groups
c. Social and water conservation	Percentage distribution of area owned (by households) by income groups
d. Minor irrigation	Percentage distribution of net area irrigated (flow and lift combined) by income groups
e. Animal husbandry -	
i. Cattle development	Percentage distribution of "Cattle and Buffaloes" (owned by households) by income groups
ii. Poultry development	Percentage distribution of "Poultry" (owned by households) by income groups
iii. Sheep & wool development	Percentage distribution of "Sheep & Goats" (owned by households) by income groups
iv. Piggery development	Percentage distribution of "Pigs" (owned by households) by income groups
v. Other general expenditure	Percentage distribution of "Livestock" (owned by households) by income groups
f. Dairy development	Percentage distribution of consumption of "Milk and Milk Products" by income groups
2. Industry & Minerals:	
a. Government distilleries	Percentage distribution of consumption of "Pan, Tobacco & Intoxicants" by income groups
3. Water & Power Development:	
a. Multi-purpose river projects (75%)	Percentage distribution of "Net Area Irrigated" by income groups
b. Irrigation	Percentage distribution of "Net Area Irrigated" by income groups
c. Power projects -	
i. Agriculture	Percentage distribution of "Net Area Irrigated" (lift only) by income groups
ii. Domestic	Percentage distribution of consumption of "Fuel & Light" by income groups

TABLE 9. PER HOUSEHOLD ALLOCABLE EXPENDITURE BENEFIT AND BENEFITS DISTANCE AS BETWEEN LOW, MIDDLE AND HIGH INCOME GROUPS

Income Group	Per household allocable expenditure Benefits (Rs.)	
	1975-76	1984-85
Low	378.10	2793.55
Middle	802.35	4189.69
High	7593.57	35410.33
	Benefit Distance	
Low	1.0	1.0
Middle	2.1	1.5
High	20.0	12.6

TABLE 10. PER HOUSEHOLD EXPENDITURE BENEFIT

in Rs.

	1975-76			1984-85		
	Low	Middle	High	Low	Middle	High
EDUCATION						
A. *General Expenditure*	2.61	2.58	29.20	11.66	9.88	51.03
1. Special education	0.78	0.55	0.35	5.41	3.83	2.45
2. Sports and youth welfare	0.18	0.87	28.11	1.01	2.34	46.21
3. Art and culture	1.65	1.16	0.74	5.24	3.71	2.37
B. *Specific Expenditure*	131.44	93.58	301.72	688.62	246.21	583.28
1. Primary education	66.17	36.05	45.84	362.97	101.59	96.45
2. Secondary education	33.90	36.84	112.71	155.82	86.95	198.66
3. Pre-University education	5.43	5.39	11.66	36.29	18.48	37.57
4. University and other major education	17.24	8.71	64.04	95.86	24.88	137.85
5. Technical education	3.37	3.30	19.65	12.78	6.43	28.56
6. Medical education	2.03	1.62	34.85	9.40	3.86	61.90
7. Agricultural education	3.30	1.67	12.37	15.50	4.02	22.29
Total (A + B)	134.05	96.16	330.92	700.28	256.09	634.31
			Benefit Distance			
A. *General Education*	1.0	0.99	11.18	1.0	0.85	4.38
1. Special education	1.0	0.70	0.45	1.0	0.71	0.45
2. Sports & Youth welfare	1.0	4.83	156.17	1.0	2.32	45.75
3. Art & culture	1.0	0.70	0.45	1.0	0.71	0.45
B. *Specific Expenditure*	1.0	0.71	2.29	1.0	0.36	0.85
1. Primary education	1.0	0.54	0.69	1.0	0.28	0.26
2. Secondary education	1.0	1.09	3.32	1.0	0.56	1.27
3. Pre-University education	1.0	0.99	2.14	1.0	0.51	1.03
4. University and other major education	1.0	0.50	3.71	1.0	0.26	1.44
5. Technical education	1.0	0.98	5.83	1.0	0.50	2.23
6. Medical education	1.0	0.80	17.17	1.0	0.41	6.58
7. Agricultural education	1.0	0.51	3.75	1.0	0.26	1.44
Total (A + B)	1.0	0.72	2.47	1.0	0.36	0.90

TABLE 11. PER HOUSEHOLD EXPENDITURE BENEFITS AND BENEFIT DISTANCE OF EDUCATION, MEDICINE AND HOUSING AMONG DIFFERENT INCOME GROUPS

(Rs)

Income Group	Per Household Expenditure Benefits					
	Education		Medicine		Housing	
	1975-76	1984-85	1975-76	1984-85	1975-76	1984-85
Low	134.05	760.28	4.53	20.42	1.39	3.66
Middle	96.16	256.09	15.10	39.97	1.38	2.80
High	330.92	634.31	451.67	726.17	15.80	7.24
			Benefit Distance			
Low	1.0	1.0	1.0	1.0	1.0	1.0
Middle	0.7	0.4	3.3	1.9	1.0	0.7
High	2.5	0.9	99.0	35.5	11.3	1.9

TABLE 12. BENEFIT INCIDENCE OF URBAN DEVELOPMENT EXPENDITURE

(Rs)

Income Group	Per household expenditure benefit	
	1975-76	1984-85
Low	0.25	24.95
Middle	1.21	38.57
High	39.23	598.48
	Benefit Distance	
Low	1.0	1.0
Middle	4.84	1.55
High	156.92	23.99

TABLE 13. PER HOUSEHOLD EXPENDITURE BENEFITS AND BENEFIT DISTANCE OF AGRICULTURE AND ALLIED SERVICES AMONG DIFFERENT INCOME GROUPS

Income Group	Per Household Expenditure Benefits					
	Agriculture and allied services		Agriculture (other than scheme for small farmers and agricultural labourers)		Scheme for small and marginal farmers and agricultural labourers	
	1975-76	1984-85	1975-76	1984-85	1975-76	1984-85
Low	51.65	303.49	14.45	12.46	3.85	35.51
Middle	299.73	966.12	200.34	240.22	24.42	159.16
High	1871.93	1642.88	1254.91	1540.82	0.00	0.00
	Benefit Distance					
Low	1.0	1.0	1.0	1.0	1.0	1.0
Middle	5.8	3.1	13.8	19.2	6.3	4.4
High	36.2	5.4	86.8	123.6	0.0	0.0

TABLE 14. PER HOUSEHOLD EXPENDITURE BENEFITS AND BENEFIT DISTANCE OF INDUSTRY AND MINERALS, WATER AND POWER DEVELOPMENT AND TRANSPORT AND COMMUNICATIONS AMONG DIFFERENT INCOME GROUPS

Income Group	Per Household Expenditure Benefits (Rs)					
	Industry and Minerals		Water and Power Development		Transport and Communications	
	1975-76	1984-85	1975-76	1984-85	1975-76	1984-85
Low	6.13	35.24	28.38	110.61	3.50	23.53
Middle	11.03	24.90	224.08	1348.11	17.22	54.73
High	215.23	289.93	3447.85	23543.22	555.60	1001.22
	Benefit Distance					
Low	1.0	1.0	1.0	1.0	1.0	1.0
Middle	1.8	0.7	7.9	12.1	4.8	2.3
High	41.6	8.2	121.5	212.8	154.3	45.9

TABLE 15. EFFECTIVE BENEFIT INCIDENCE *

Income Group	1975-76	1984-85
Low	17.93	79.70
Middle	15.30	48.26
High	56.30	203.50

* That is per household expenditure benefits as percentage of total consumer expenditure per household by income groups.

TABLE 16. SHARE OF PUBLIC EXPENDITURE IN STATE DOMESTIC PRODUCT, 1984-85
(MAJOR STATES)

(Rs crore)

	1975-76			1984-85		
	Total expenditure *	State domestic product	Total expenditure as percentageof SDP	Total expenditure *	State domestic product	Total expenditure as percentage of SDP
Andhra Pradesh	673.26	4218.00	15.96	2822.80	11447.60	24.66
Assam	207.17	1334.76	15.96	972.02	4070.60	23.87
Bihar	503.53	4062.20	12.39	2062.20	10700.90	19.27
Gujarat	443.52	3693.20	12.01	2033.06	10645.00	19.10
Haryana	226.48	1616.40	14.01	919.09	4654.10	19.75
Himachal Pradesh	99.83	410.50	24.32	420.74	1016.70	41.38
Jammu & Kashmir	217.61	479.60	45.37	677.73	1357.90	49.91
Karnataka	529.21	3092.40	17.11	2137.29	8790.60	24.31
Kerala	402.43	2229.20	18.06	1305.71	5637.20	23.16
Madhya Pradesh	512.39	3638.70	14.08	2120.15	9554.80	22.19
Maharashtra	1125.78	7676.60	14.66	4486.93	21726.30	20.65
Orissa	333.04	1738.60	19.16	1132.63	4317.20	26.26
Punjab	314.29	2598.90	12.09	1179.73	7438.50	15.86
Rajasthan	431.29	2593.30	16.63	1523.64	7517.60	20.27
Tamil Nadu	625.89	3727.40	16.79	2375.96	10931.60	21.73
Uttar Pradesh	940.22	7005.10	13.42	4045.62	21307.30	18.99
West Bengal	596.96	5395.30	11.10	2249.80	15205.20	14.80
Average	486.82	3264.13	17.24	1909.71	9195.24	23.89

Note * Expenditure on Revenue Account and Capital Account combined.
Sources: 1. Reserve Bank of India : Relevant Reserve Bank of India Bulletins.
2. Government of India, Ministry of Finance, *Indian Economic Statistics*, December 1987.

TACKLING ECONOMIC BACKWARDNESS

Anand S. Nadkarni

Recently a government-appointed Committee in Maharashtra (the Dandekar Committee) went at length into the problem of inter-area disparities in development in the State. The novelty of the Committee's approach underlying its recommendations may be briefly stated. As the state government spends on development programmes it creates facilities in various sectors of development of the districts. Some districts lag behind others in respect of the physical facilities created. The Committee estimated such physical backlog of the lagging districts. In the Committee's view the removal of this backlog, should constitute the principal charge on the development budget of the State Government. The problems which such an approach is likely to raise, are examined in this paper.

Introduction

The ultimate focus of any worthwhile development programme has to be the individual or better still, the household. In the case of such households a development policy should seek not merely to raise the levels of living of the households but also to narrow down the inter-household differentials in living conditions to a margin economically justifiable and, hopefully, socially acceptable. One has, however, to recognise that making reduction in inter- household imbalance a direct objective of every development programme, may not be feasible. To be sure, some of the programmes reach the households directly. We may cite, by way of illustration, the IRDP programmes which are designed to help the rural poor or the Employment Guarantee Scheme in Maharashtra intended to provide gainful employment to the rural unemployed. Similarly, the programmes of assistance to backward class and economically backward class students in the form of provision of hostel facilities, free supply of books, exercise books, slates and pencils, and so on by government, also fall under the same category.

However, the plan programmes accounting for bulk of the budgeted expenditure make an impact on the economic levels of individual household only indirectly. Most of the plan programmes are concerned with the creation of physical infrastructural facilities, provision of subsidised inputs to producers, promoting the growth of development agencies, spreading knowledge and education in various forms, and so on. In brief, the planning authority strives to create facilities and environment conducive to development. Several of the facilities provide social goods needed in themselves. To the extent the plan schemes accelerate development and/or provide social goods, they benefit those who reside in areas in which the schemes are being implemented and in those others reached by the spread effects of the programmes carried out. Thus areawise distribution of these schemes has a bearing on the inter-household differentials in levels of living. To narrow down these differentials special measures are required which are oriented towards the development of specific areas,identified as particularly 'backward'. These special measures, in the words of the National Committee of the Development of Backward Areas [referred to hereinafter as the Sivaraman Committee], "involve directional departures or changes in the complex of policies, programmes, technologies and institutional arrangements in the various sectors of development [Sivaraman 1981, p. 35, para 4.7].

Regional Imbalance as a Problem

It will be appreciated that regional imbalance is a nation-wide phenomenon in India. There are states in the country which are backward and some others, not so backward, may be even advanced. Almost all the states and union territories have within their borders areas--districts/talukas -which are comparatively more

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backward than others. A district everywhere has advanced and backward talukas; within a taluka there are advanced and backward villages.

Imbalance, inter-regional or inter-group, is almost everywhere a concomitant of the developmental process. In a more or less stagnant, static economy the economic distance between different areas/groups is relatively much narrower. People get resigned to a life of deprivation and penury. There are hardly any attractive models of relative prosperity within the economy to kindle the imagination of residents. There is, in that case, no awareness of relative backwardness as such. Conditions change as the developmental process gets activated in a big way. The incidence of development on the different areas/groups does not move in step. Some forge ahead of others. People left behind also realise that economic life could improve. Thus the reality of uneven distribution of the fruits of development coupled with the attendant realisation of the possibility of improvement in economic levels, accentuates among many a sense of being wronged. Imbalance emerges not merely as a physical fact but it also gets embedded in the psyche of the people who develop a sense of grievance. Such a condition is bound to set afoot efforts at redressal. Several of these efforts are genuine and certainly need to be responded to adequately. Some others, to be sure, are misleading in the sense that people making these efforts and clamouring for redressal are not as much victims of the imbalance scenario as they find it convenient to believe. The policy-maker is called upon to separate the genuine cases of backwardness from the spurious ones.

It is conceivable that an area is backward because it has not much potential for development. Potential is not static but is dynamic and often grows with development. There is, however, a physical limit to this. Potential for development depends on resource endowment. This endowment is to be understood not merely in terms of the natural physical resources potentially available to an area but also adaptability of these resources for use for development purposes. Thus as technology changes, markets spring up and new economic activities emerge, an area which seemed earlier to be devoid of development potential, may take its place on the developmental map of a state/country. If,however, there is reason to believe that an area's potential for development is likely to be negligible even in the context of changes in technology and so on, the people of the area have no alternative but to out-migrate.

Hopefully such areas are not many. Ordinarily areas identified as backward have some potential for development. In practice the potential is not realised owing to one or more adverse factors. Tribals,for example, living in extreme isolation come to develop a motivation which may not be quite conducive to development, particularly when their link with developed areas is primarily through unimaginative bureaucrats and exploitative middlemen. Planners ought to pay special attention to their problems. Several areas tend to be neglected as the residents of these areas fail, for whatever reasons, to make their voice heard by decision-making authorties. Well-thought-out schemes of development of these areas, as a part of an overall strategy to help the backward areas, may bring to an end the neglect they ordinarily suffer from. In sum,the development of areas demarcated as backward needs to be stimulated through special programmes and the planners ought to provide a mechanism for formulating and implementing these programmes.

Regional Imbalance : the Study for Maharashtra

Regional imbalance is a theme which has been extremely sensitive in certain parts of Maharashtra since the formation of the state in 1961. Maharashtra was formed by bringing together the Vidarbha districts of the former Madhya Pradesh state, the Marathwada districts of the erstwhile princely state of Hyderabad and the Marathi-speaking districts of the former Bombay state. In Vidarbha and Marathwada there has been a widespread feeling that their special needs in respect of development have not received from the State Government the attention they deserve. An alternative point of view supported by the State Government since 1969 has been that the whole state was more or less underdeveloped. In consonance with this view the government decided to treat the district as the primary unit of planning. Owing, however, to the recent upsurge

in the demand that regional imbalance in development be corrected expeditiously, the Government of Maharashtra appointed in August 1983 a Fact-finding Committee on Regional Imbalance under the chairmanship of Prof.V. M. Dandekar [to be cited hereinafter as the Dandekar Committee] "to suggest remedial action to remove the existing imbalance as determined and long term measures to prevent recurrence of such imbalance" [Dandekar 1984, p. 2]. Though the Dandekar Committee focussed attention on the problem as it exists in Maharashtra, the elaborate exercise made by the Committee to arrive at its conclusions has a wider application. An attempt is made in this paper to review the Committee's approach. As an useful backdrop to this review it may be worthwhile to summarise some of the issues raised by the Sivaraman Committee on the problem of backward areas.

Geographical Unit for Identifying Backwardness

Backwardness is a variegated phenomenon. There cannot be a set formula for formulating concrete schemes of help to the backward areas. The requirements of different areas are different and as such, plan schemes needed to help them would also be different. All the same, in order to be able to help these areas, the planning authority ought to identify these areas and also outline a broad strategy for helping the areas identified.

As for identification of backward areas, an initial question relates to the size of the geographical unit meaningful to a policy-maker for framing the necessary policies. When either the Planning Commission or the Finance Commission recommends transfer of funds from the Government of India, evidently the relevant geographical unit is the state. Thus, for example, 20 per cent of plan funds, distributed among the states according to the Gadgil Formula, are allocated only among the 'backward' states, these being defined as those with per capita state domestic product lower than the national average. Or again, it has been customary for Finance Commissions since 1965 to recommend distribution among states of a portion of the excise divisible pool allocable among them, in accordance with criteria of backwardness selected by the Commissions. But what should interest us in the present context is the intra-state backwardness. In that case the relevant question is: What territorial unit within a state is the most meaningful from the point of view of formulating policies in order to reduce economic distance between the different areas? The Sivaraman Committee, referred to earlier, spelt out the requirements of a proper territorial unit in this context as follows: "..... the unit should be small enough to ensure a certain homogeneity of condition so that a further differentiation of approach within the area is not necessary. At the same time the unit must be large enough to be suitable for local planning. The special measures identified for each area would have to be implemented mainly by official agencies. Hence the unit chosen must fit into the framework of development administration. A further factor that has to be taken into account is the availability of quantitative data on the indicators chosen for the purposes of identification" [Sivaraman 1981, p. 35, para 4.9] In brief, the requirements listed are four : [i] homogeneity within the area, [ii] viability for local planning, [iii] suitability for development administration and [iv] data availability. There are two geographical units within a state which compete for consideration as the relevant geographical unit. These are : a district and a development block/taluka.

The development block, being smaller in size, is more homogeneous than the district. The viability for local planning depends on the possibility of preparing an area-plan which does not have too many loose ends because of the weight of the 'externality' factor. It is generally agreed that like a district, a development block also is quite a viable unit for planning, possessing an adequate degree of 'self-containedness.' What is more, even when the block-level development activity is conceived 'as a part of a larger resource development programme cutting across block boundaries', the plan for the block has an identifiable and separable content of its own. "For example, in a command area covering several blocks, the utilisation of newly available irrigation facilities for increasing productivity and employment can be accelerated through the block

level plan which would take up the complementary programmes of land shaping, distributory channels, crop planning, agricultural extension, supply of inputs and credit" [Dantwala 1978, p. 3, para 2.9]. Even from an administrative point of view, the development block passes muster. "The district and the block are both suitable from the administrative point of view as they are both recognised levels in the hierarchy of development administration" [Sivaraman 1981, p. 35, para 4.10]. The real difficulty in opting for development block as the 'primary unit for the identification of backward areas', is that the data available at the block level are relatively scanty. The position in respect of the district is much better. Till the availability of block-level data improves considerably it appears that the district has to be selected as the relevant territorial unit.

There is one more consideration which has a bearing on this choice. This has been urged by the Dandekar Committee. To quote : "The choice between the district and the block or taluka will depend on the particular field of development and the average level it has reached ..... In general, with higher level of development, one may expect it to spread more evenly and hence one may take a smaller unit to examine disparities ..... For instance, in a number of fields such as primary education, primary health care services, village roads, drinking water supply, rural electrification, agricultural and animal husbandry services, and co-operation, Maharashtra has now reached a level of devlopment where it is not unreasonable to expect that it should spread evenly in all talukas. Hence, in examining disparities in development in these fields, it will be appropriate to take the taluka as the unit ..... On the other hand, the development in certain fields has not proceeded far enough to expect an even distribution as between talukas. Such is the case, for instance, with secondary and higher education, technical training, hospitals and major district roads. In such cases, one may reasonably expect the development to spread evenly as between districts and it will be appropriate to take district as a unit for judging disparities in development" [Dandekar 1984, pp. 24-25, para 3-5]. It may be mentioned, however, that in the opinion of the Dandekar Committee even in sectors in which it would be worthwhile to focus attention on inter-block disparities, it may not be possible to do so for want of requisite data. The formulation above seems to imply two things. As the block-level data on a wide variety of items in respect of which development is sufficiently widespread are forthcoming on a regular basis, it would be necessary to identify talukas or development blocks which are lagging behind and pay attention to their needs. There is also the implication that as development in all sectors reaches a sufficiently high level, a switch-over to development block as the 'primary unit' would become feasible.

'Index-based Approach'

Granting that in the general context the district is to be recognised as the primary territorial unit for identifying backwardness, we encounter the further question: How to separate the backward districts of a state from those not so backward? The customary approach - which may be described as the 'Index-based Approach' - is to select a set of separate indicators of development/underdevelopment which are then compounded into a single index for identifying the backward districts. For example, the Chakravarty Committee on Backward Areas[1] lists 14 variables for identifying backward districts in the whole country. These include three indicators each on gross value of output of of crops, use of electricity and literacy, two each on surfaced roads and workers (one each for agricultural and industrial workers), and one on population density. The indicators were chosen for analysis after 'examining the comparable data at present available at district level.'

A short digression on indicators of backwardness may be in point here. As is well-known the Finance Commissions in India since the Fourth Finance Commission onwards have used 'backwardness' as a criterion for recommending allocation among states of a portion of the divisible pool of excise which was assigned to the states. Reacting to the indicators employed for the purpose by the Fourth and the Fifth Commissions, the Sixth Finance Commission made an implicit distinction between partial and aggregative

indicators [Sixth Finance Commission, pp. 15-16]. A partial indicator seeks to highlight relative backwardness of a certain sector/aspect of the economy in question. The indicators chosen by the Chakravarty Committee are partial in this sense. They are presumed to signify development/underdevelopment with reference to, for example, household/ industrial use of electricity, or availability of infrastructural facility in the form of surfaced roads, or again, the extent of literacy among males and among females. An aggregative or overall indicator, on the other hand, is intended to bring out the development status of the economy as a whole, By way of illustration we may cite the indicators which the Finance Commissions since the Sixth Commission have suggested, viz. (i) distance of per capita State Domestic Product of a state from that of the state which has the highest per capita SDP, (ii) state's population weighted by the inverse of the average per capita SDP for a stipulated period (i.e.Income Adjusted Total Population or IATP), (iii) the per cent of poor in the state to poor in all the states and (iv) revenue equalisation factor.

It is easy to see that the use of aggregative indicators as rough measures of inter-district differential in development would encounter intractable conceptual difficulties as also insuperable problems of availability of the type of data needed. If, therefore, the index-based approach is to be used to identify backward districts of a state, we have to fall back on partial indicators.

Evidently there can be myriad partial indicators of development/underdevelopment. Selection from among these to bring out the relative development status of districts is of crucial importance. The Chakravarty Committee delineates the considerations to bear in mind for selection as follows: "Only such indicators should be chosen which would best express the relative variations in development among various area units. Further the indicators chosen should cover a range of development aspects and should not seriously overlap among themselves" [Sivaraman 1981, p. 41]. As stated earlier, the Committee selected 14 partial indicators to arrive at a composite index.

The Chakravarty Committee's exercise was concerned with identifying backward districts in the whole country. It found 179 districts as "constituting the 'hard core of backward areas' in the country." Interestingly, only one district in Maharashtra (viz. Bhir (Beed) in the Marathwada region) figures in this list. Two points of general interest may be made at this stage, taking Maharashtra by way of illustration. If a similar exercise for identification of backwardness is made for Maharashtra, using the 14 indicators of the Chakravarty Committee, clearly many more districts will be seen to be backward in the Maharashtra context. This is because in the national context backwardness is identified with reference to the national cut-off point drawn by compounding the 14 indicators; the relevant cut-off point for a Maharashtra-level exercise is that for the state. The latter cut- off point is likely to be higher than the former since in the case of several indicators the Maharashtra average is likely to signify a higher development status on an average than the national average. Many more districts in Maharashtra would fall short of the state cut-off point.

There is one further point. The 14 indicators found suitable by the Committee for a country-level analysis need not all be relevant for a state-level analysis. The fourteen indicators 'would best express the relative variations in development among the various area units' in the country as a whole. It is likely that those indicators which satisfy this requirement in the case of a state - say, Maharashtra - would not necessarily be the same as those cited by the Chakravarty Committee. One feels that in the case of Maharashtra, for example, indicators such as 'the degree of urbanisation', 'percentage of agricultural land under irrigation', may have to be included.

A point of criticism generally urged against the 'Index-based Approach' is that the selection of indicators is likely to be greatly circumscribed by the availability of data. "There is a certain tendency to rely heavily on data from the population census because they are readily available at any required level of disaggregation." [Sivaraman 1981, p. 36, para 4.15]. What is more, many indicators, based upon such readily available data, are highly correlated between themselves.

Their selection for indentifying backwardness may, therefore, overstate the significance of the scenario which the bunch of indicators represents. The criticism is, no doubt, valid. However, this,by itself, does not render the approach valueless. If on certain other counts the approach is found to be useful, then the data constraint primarily defines the task to be attained in respect of data-collection in order to enable researchers to go on improving indicators to be employed for the purpose of identification.

The Sivaraman Committee Report cites one more objection. "Generally these indicators reflect the result of a development process rather than the causal factors which led to the present situation" [Sivaraman 1981, p. 36, para 4.16]. Backwardness can be identified by its outward signs which the Report describes as "the result of a development process" or by the factors which seem to cause backwardness. There is a certain generality about the outward signs which enables a researcher to locate backwardness on the basis of certain common criteria. There is here an identification of backwardness by symptoms which precedes diagnosis of the malady. On the other hand, it is argued that causes of backwardness are area-specific. Factors which give rise to backwardness in one area are not the same as those in another area. In such a case there cannot be a generalised exercise for locating backwardness. Pinpointing causal factors is likely to be useful in a different way. It was pointed out earlier that in order to help backward areas we have firstly to identify them and then to outline a broad strategy for helping them. Evidently knowledge of causal factors in relation to a given area may possibly help more in the latter task of outlining a broad strategy.

As a necessary part of the 'Index-based Approach' there has to be "a procedure for weighing or aggregating (the indicators) so that these ..... can be reduced to a single measure" [Sivaraman 1981, p. 36, para 4.12]. Even if the indicators are not compounded into a single measure, weighing in some sense would be necessary if a meaningful use is to be made of the indicators. For example, if funds for development schemes are to be allocated among, say, districts on the basis of indicators of development/underdevelopment, the policy-maker will have to decide the percentage of earmarked funds to be allocated on the basis of each indicator. This also is an exercise in weighting. Weighting is clearly a matter of subjective judgement, and therefore the 'Index-based Approach' is, in the view of many, open to question.

After backwardness is located by weighting partial indicators appropriately, it is necessary for a policy-maker to formulate strategy to overcome backwardness. This would require further elaborate exercise to find out particular types of backwardness in areas identified as backward, so as to enable the policy-maker to formulate development schemes suited to the specific needs of a given area. It is customary, however, for a central authority (for example, the state government) to allocate earmarked funds on the basis of selected criteria of backwardness and leave it to the local authority (say, the district authority) to determine expenditure priorities as a part of the local plan exercise. Thus, for example, using criteria, most of which signify backwardness in one form or another, the Government of Maharashtra distributes plan funds among the District Planning and Development Councils (DPDCs) and then the DPDCs prepare, as part of the planning process in the state, plan schemes for the respective districts to be financed out of these funds. In this case, the selected indicators with their weights merely determine the total amount of funds that are to be placed at the disposal of each DPDC to finance its plan schemes. A DPDC is not required to use funds allocated on the basis of a given indicator of backwardness (say, communication backwardness) to overcome, within the limits of the funds concerned, the specific form of backwardness. Consequently, the relative distance between districts with reference to a particular criterion of development/underdevelopment, may not be much affected by the expenditure of funds allocated on the basis of this criterion. This means that the same pattern of districtwise allocation in relation to a given criterion, may continue from year to year. In brief, if the 'Index-based Approach' is employed to

allocate plan funds among DPDCs in the manner explained, it fails to indicate a strategy to overcome specific forms of backwardness.

It may be noted in passing that analysis on somewhat different lines would apply in the case of some of the indicators used by the Government of Maharashtra. One such is 'the proportion of Scheduled Castes (SC) and Scheduled Tribes (ST) population in the district'. Even if a DPDC, getting relatively larger amount of funds by this criterion, uses these on schemes of benefit to the SC/ST population, the relative position of the concerned district with regard to the indicator, is not likely to change, i.e. the relative percentages of SC/ST population in the districts would remain the same. In consequence, the pattern of allocation by districts on the basis of this criterion would continue to be same. The upshot of the preceding argument is that such criteria are best omitted from a list of backwardness indicators used for allocating plan funds. The disabilities from which the SC/ST suffer have to be attended to separately and specifically by the plan authority, so that eventually, as these disabilities disappear, there will not be any need to pay separate attention to these groups.

'Problem Area Approach'

The Sivaraman Committee suggests an alternative approach. This "tries to identify areas which cannot realise their development potential unless special measures are taken to alleviate certain crucial constraints" [Sivaraman 1981, p. 38, para 4.26]. The approach is designated as the 'Problem Area Approach'. In consultation with 'the States and the people involved in development planning at the local level in a wide variety of areas', the Sivaraman Committee identified six problem areas to be treated as backward for purposes of planning. These are: (i) Chronically drought-prone areas, (ii) Desert areas, (iii) Tribal areas, (iv)Hill areas, (v) Chronically flood-affected areas, and (vi) Coastal areas affected by salinity. The Committee rightly argues: "The usefulness of the problem area approach lies not so much in any higher degree of objectivity in the manner in which the areas are identified. Its real usefulness for the purposes of planning lies in the fact that it avoids aggregating very different types of areas into one generalised category labelled "backward" [Sivaraman 1981, p. 38, para 4.29]. This means that plan schemes will be devised to suit the specific needs of a given problem area. Schemes relevant to, say, a tribal area would not be the same as those suitable for, say, coastal areas affected by salinity. The concomitant advantage to be expected is that unlike in the Index-based Approach, as ordinarily put into practice, funds allocated on the basis of a specific form of backwardness, will not be available for use for something other than the removal of that form of backwardness. Thus, on the one hand, by dispensing with the need for weighting, the 'Problem Areas Approach' reduces the arbitrary element in identification of backward areas that we encounter in the 'Index-based Approach', and, on the other, it emphasises that the strategy for overcoming backwardness would be different in different 'problem areas'. The Sivaraman Committee, in fact, discusses somewhat elaborately the separate considerations which will have to be borne in mind by the planning authority tackling the problem of backwardness in the six 'problem areas' identified by them.

However, one feels that there could be backwardness outside the six problem areas mentioned by the Sivaraman Committee. What the Committee tried to identify was what they described as ' six types of fundamental backwardness'. Each of these probably refers to a type of backwardness which can be traced to a syndrome of integrated set of factors clearly discernible. But there can be backwardness which, though not fundamental in this sense, merits, all the same, urgent attention. The Sivaraman Committee itself envisages such a possibility while mentioning 'the prevalence of feudal elements in production relations' as one of the constraints on the fruitfulness of the area-specific development strategies in backward areas suffering from one or more of the six types of fundamental backwardness. "In fact, many areas which are (not) covered by the six types but which nevertheless seem to be backward may well be areas suffering from feudal hangover" [Sivaraman 1981, p. 39, para 4.37]. It is difficult to accept that all backward areas not covered by the six

types suffer from backwardness only because of the existence of 'feudal hangover'. For example, much of the backwardness of, say, the Marathwada region in Maharashtra will not be drawn into focus under the approach outlined in the Sivaraman Committee approach.

'Backlog-Removal Approach'

Both the 'Index-based Approach' and the 'Problem Area Approach' have one thing in common. They classify districts/blocks as backward and non-backward on the basis of an overall assessment. In doing this they lose sight of the fact that even the so-called non-backward areas may be lagging behind in certain respects. Thus a district/block which may not qualify as backward under the 'Index-based' or the 'Problem Area' approach, may still be doing not as well as many other districts/blocks (including those that are backward in an overall sense) in the state in a specific sector of development such as, for example, roads or education or medical aid. Equity demands that backlog in a sector, in whichever district/block it is found, should be removed in order to promote regional balance.

In the national context neither the Finance Commission nor the Planning Commission ordinarily takes such a consideration into account while recommending allocation of funds among the states. For example, even Maharashtra, which has always been treated as a non-backward state in an overall sense, certainly has backward sectors of development in which achievement is below the national average. But Maharashtra is not likely to get any special accommodation on that account from either the Finance or the Planning Commission. The implicit assumption of the Commissions in this case is that Maharashtra, being a relatively advanced state, can raise resources of its own to take care of a sectoral backlog. Even if true in the context of a state, the assumption is not relevant for sectoral backlog in a district. District authorities within a state do not have much resources of their own. In Maharashtra, for example, a Zilla Parishad's own receipts form only 5 per cent of its total receipts. The bulk of its receipts are in the nature of transfer from the State Government, which, again, are rigidly earmarked. It is true that the Zilla Parishads are known to shy away from imposing levies within their powers and from collecting assiduously those levied. All the same, their own receipts, even on the basis of more energetic efforts to levy and collect, would still constitute a very moderate proportion of total receipts, in view of the fact that only minor sources of revenue are assigned to the Parishads, and that is so for good economic reasons. If the state government does not devolve financial resources for removing sectoral backlog in a district on the ground that it is not 'backward' in an overall sense, then the backlog will persist, perpetuating regional imbalance to that exent. One could therefore argue that the most effective way of overcoming backwardness in all its aspects is to help district authorities to remove backlog in whichever sector it exists.

This is the point of view adopted by the Fact-finding Committee on Regional Imbalance (the Dandekar Committee), referred to above. In its report submitted in April 1984, the Committee attempted a 'sectoral examination of the disparities' between the Maharashtra districts in order to " measure the backlog of the districts lagging behind in each sector in much greater detail, so that the disparities are identified in operationally meaningful terms" [Dandekar 1984, p. 32, para 3.26].

The procedure followed by the Committee for a 'sectoral examination of the disparities' between districts, may now be outlined. Clearly the overall imbalance between districts was the composite result of private and governmental efforts, sector by sector. Since the Committee was expected to advise on the steps the government should take to redress the inter-district imbalance, it was logical for the Committee to consider the probable impact of only the governmental effort on development in the districts, as it is only in respect of these efforts that the government could take corrective action.

It should be noted that the impact of governmental effort could be both direct and indirect. In certain fields such as road construction,irrigation and provision of electricity, the bulk of activity

of providing facilities is undertaken by the government itself and the resultant inter-district differential can be regarded as the direct impact of governmental effort. The Committee has attempted to estimate the backlog of lagging districts in such sectors in order to compute the cost of backlog-removal for the government, showing its districtwise break-up.

In some sectors(e.g. education or health care) there are government institutions providing services but these are supplemented by private effort, a portion of which may be aided by the government through a system of grants. The impact through the governmental institutions is direct whereas that through the government-aided private institutions is indirect. The Committee has taken these two types of impact into account for estimating backlog of districts. However, it has left out of account the third category of effort in the field, viz. unaided private effort. "This will ensure that, while trying to reduce the disparities in the provision of these services, voluntary effort is not discouraged" [Dandekar 1984, p. 33, para 3.29]. If the government takes upon itself the responsibility of correcting the totality of inter-district disparities including those in respect of unaided private effort as well, there would clearly be some disincentive to private effort. This in itself is not a desirable result. Besides this major objection, there is also a minor point to make by way of an addendum. For want of data the Committee has not been able to estimate backlog in all the sectors or even in relation to all the schemes in the sectors examined. It has therefore recommended the extension of backlog-estimation exercise to more and more sectors/schemes as data availability improved. In that eventuality the government's commitment to narrowing the disparities even on account of unaided private effort would place an inordinately heavy burden on the government budget.

The indirect impact of the governmental effort mentioned in the preceding paragraph is with regard to infrastructural facilities. Additionally the indirect impact also works through government's role vis-a-vis production sectors such as industry and agriculture. "Governmental function (here) is mainly to promote and facilitate the private productive effort and give it a desired direction" [Dandekar 1984, p. 33, para 3.30]. For example, the Government of Maharashtra has a Package Scheme of Incentives designed to encourage dispersal of industry towards undeveloped and developing areas of the state. Or again the Government of Maharashtra assists private effort at development of ground-water resources by "providing information, giving subsidies including writing off a part of the loan in case of failed wells, and regulating location of wells in so far as these are sunk with borrowed funds" [Dandekar 1984, p. 324, para 14.24]. The Committee has analysed in some depth governmental programmes in these areas as a part of the analysis of inter-district differentials and has made its recommendations.

It is pertinent to note here that in the terminology employed by the Committee a lagging district was one which had an attainment in a sector lower than the average for Maharashtra. Backlog was the extent of this shortfall in the lagging district. In each sector the backlog was estimated initially in physical terms and then the financial expenditure that was required to be made by the government to remove the physical backlog was arrived at. We may illustrate with reference to backlog, say, in general education, comprising primary, secondary and university education.

As stated above the Committee limited itself to estimating backlog in education through institutions run by government itself and through private institutions aided by government. The 'backwardness' of a district in this sphere shows itself in the form of shortage of schools/colleges, shortfall in student enrolment and shortage of teachers. The Committee put together districtwise data per lakh of population on the number of schools/colleges, student enrolment and teachers separately at every level of education, identifying in the process the districts with figures lower than the Maharashtra average in each case and also bringing out the extent of shortfall in the case of the lagging districts. This was backlog in the physical sense on the basis of indicators selected. The object of government policy should be to remove this backlog, i.e. bring the districts concerned to the level of the average for Maharashtra, within a stipulated period of time. While estimating the backlog-removal expenditure that

the government is called upon to incur, the Committee, however, took into account only the backlog in the number of teachers in the lagging districts on the ground that 'it is operationally the most meaningful'. The specific measure it chose for the purpose was the 'prevailing cost per teacher in each category of education' which was not the same as cost of teacher in a given category of education, but the cost of that category per teacher. Then "the cost of the present backlog in primary, secondary and college education is estimated on the basis of the backlog in the number of teachers multiplied by the per teacher cost of education" [Dandekar 1984, p. 167, para 9.14][2].

The essential elements in the Dandekar Committee exercise may now be summarised. In the first place, backwardness was identified as 'backlog' of a district in terms of its shortfall with reference to the average attainment in a sector of development in Maharashtra as a whole. It will be noted that even a district identified as non-backward in an overall sense may have a backlog in a specific sector. For example, Kolhapur district in Western Maharashtra which emerges as non-backward in any exercise on an overall basis is seen to have backlog in roads, secondary education, health services, water supply, and land development and soil conservation. Secondly, backlog estimated is in sectors or sub-sectors in which government participates in activities, either directly or by assisting and encouraging private effort. Thirdly, it is worth-mentioning that the backlog was first estimated in terms of shortfall in physical achievement and only then financial implications of removing the physical backlog were worked out. Finally, backlog was visualised in terms of indicators relevant to a sector of development. These were chosen on the basis of their suitability as also availability of data. For estimating the actual backlog, measures that were operationally meaningful for government action were selected.

The Committee estimated backlog, district by district, in the case of 29 sectors/sub-sectors/schemes/programmes. The 29 categories selected were those for which adequate data were available. The Committee's exercise "does not cover all the sectors", nor "all the programmes or schemes of the sectors" selected, its choice being "limited by the availability of relevant data" [Dandekar 1984, p. 33, para 3.31]. Nevertheless, it covers nearly 40 percent of the approved outlay in the annual plan of 1983-84. In the Committee's view the exercise should be extended to more sectors as data become available. Then again, other and more relevant indicators for assessing backlog in attainment, may be used, if these become available [Dandekar 1984, p. 390, para 17.37]. The Committee also suggested that the district may be replaced by taluka as the basic unit for doing the exercise when the necessary information is forthcoming.

The Committee pleaded in favour of a continuous exercise on these lines from plan to plan to quantify backlog with a view to removing it in a phased manner. "As the areas below the average begin to be lifted to the present State average, the State average also rises and some areas, which until now were above the average, may fall below the average. Hence, the process continues" [Dandekar 1984, p. 35, para 3.37]. What the Committee envisages"is not a programme for removing a given backlog but a continuing process of reducing disparities in development." "As the process continues, hopefully, what will emerge is an alternative strategy of development, namely, development by lifting the bottom rather than pulling up the top" [Dandekar 1984, pp. 390-391, para 17.37].

Evidently what the Dandekar Committee suggests is an elaborate strategy of reducing inter-district, (and eventually, inter-taluka), disparities in every sector of development. This does not require classifying districts into backward and non-backward in an overall manner. A plea is made, on the other hand, in favour of attending to backwardness in the concrete wherever it is found in a sector of development in a district. It is felt that this would attack the problem of regional imbalance at its roots.

A criticism by the Sivaraman Committee of the Index-based Approach to the effect that this approach takes into account "the result of a development process rather than the causal factors which led to the present situation", has been cited above. In this connection it was observed that indentifying backwardness on the basis of

causes rather than that of general indicators, may yield better results since causes, being area-specific, would highlight different types of backwardness and also indicate a broad strategy to be followed to overcome backwardness. The Dandekar Committee proposals possess merits of a similar type. Since backwardness is understood in terms of physical backlog of a district in a sector of development we have both an identification of area-specific backwardness as also an indication of policy measures needed to remove the backlog.

Backwardness in the "Commercial Sector"

The Committee's approach towards assistance to districts considered as 'backward' in the 'commercial sector' ('broadly comprised of agriculture and industry') has attracted criticism from within itself [Dandekar 1984, pp. 469-479]. The Committee has been taken to task for addressing "itself mainly to the task of reducing inequalities in the infrastructure rather than in the commercial sector". It is remonstrated that only "a weak and halting strategy is churned out by the report for reducing the inequalities in the commercial sector which forms the quintessance of the entire growth process." Thus no "attempt is made to assess the extent of inter- district imbalance or identify the districts below the State average and measure their backlog in respect of agriculture and industry". It appears that, according to this view, in order to measure backlog in respect of the commercial sector, "both private and public productive assets in agriculture and industry will have to be considered."

It is difficult to understand the import of this criticism unless one is arguing in favour of the direct effort at production by government in agriculture and industry reinforcing substantially, if not supplanting altogether, the private effort in these sectors. It would indeed be rather odd to make any such plea in respect of the agricultural sector. The governmental effort here would necessarily be of a supporting nature taking the form mainly of schemes of incentives to cultivators, assistance in respect of land development and soil conservation, provision of extension services and so on.

In the industrial sector in Maharashtra there are, to be sure, a few public sector enterprises (PSEs) of the State Government. The Committee has provided information [Dandekar 1984, pp. 307-310] on the distribution- regionwise/ districtwise- of these PSEs in the state and has concluded "that they are generally well distributed over the four regions and in fact between several districts" [Dandekar 1984, p. 283, para 13.73]. It may, however, be noted that of the 41 PSEs of the State Government for which various types of data for 1986-87 have been provided in a recent Government of Maharashtra publication [SBPSE], only 10 enterprises have been covered in the information provided by the Committee. All the same, the Committee found a fairly wide dispersal of these undertakings as between regions/districts since each undertaking other than the regional development corporations has factories/plants distributed over a number of regions/districts, the regional development corporations being evidently confined to respective regions though even these have, within the respective regions, operations in more than one district. One may, however, legitimately object that the Committee was not warranted in arriving at its conclusion as regards wide dispersal of State Government PSEs merely on the basis of information relating to 25 per cent of the enterprises which appear in the Government of Maharashtra publication cited above.[3] However, in the context of the criticism of the Committee's approach under review two points may be made. Firstly, as the Committee rightly points out, the government "is not entirely free and without constraints to locate new industrial units anywhere it may want them to be," [Dandekar 1984, pp. 283-284, para 13.74] from the point of view of assisting the backward districts. The basic constraint arises from the prohibitive cost of building townships to provide infrastructure and other facilities needed by industries to be located in backward areas. Secondly, enterprises in backward areas ought not to be judged merely from the point of view of employment opportunities they create in these areas. Their capacity to generate resources for further development is also tremendously important. Their failure to do so would raise considerably the opportunity cost of providing a

given amount of employment through them in backward areas. It is pertinent to mention in this connection that of the 41 enterprises covered in the Government of Maharashtra publication referred to above, only 5 enterprises paid out to the State Government a total dividend of Rs. 0.63 crore in 1986-87. On total investment by the Government of Rs. 433.22 crore in these 41 enterprises, the dividend received by it comes to a measly 0.15 per cent [SBPSE 1988, p. 7, para 20].

Thus even in the industrial sector the State Government's function "is mainly to promote and facilitate the private productive effort and give it a desired direction." The Government of Maharashtra has tried to perform this function broadly in two ways. In the first place, it has "created two major institutions for promoting industrial development in the State, particularly in its underdeveloped and developing areas" [Dandekar 1984, p. 241, para 13.2]. These are the Maharashtra Industrial Development Corporation (MIDC) and the State Industrial and Investment Corporation of Maharashtra (SICOM). There is also the Maharastra State Finance Corporation (MSFC), which finances small and medium projects. In the second place, the State Government also operates Package Scheme of Incentives for the dispersal of industries, the administration of the scheme being entrusted to SICOM. Analysing the working of these institutions/schemes the Committee builds up data on aggregate assistance disbursed districtwise during 1974-83 through MIDC, SICOM, MSFC and the Package Scheme of Incentives [Dandekar 1984, p. 263]. The data show the districts which received assistance below the state average via each of the four routes. Furthermore, the Committee analyses at some length the industrial location policy of the Government of Maharashtra designed to disperse industries in the state away from the Bombay Metropolitan Region. It concludes as follows: "To sum up, the policy to restrict further industrial development in Bombay Metropolitan Region has been effective to some extent; but the policy of incentives has not been much effective to disperse industry much beyond the reach of Bombay-Pune" [Dandekar 1984, p. 275, para 13.49].

The Committee, therefore, makes fairly detailed recommendations particularly for revising the Package Scheme of Incentives. Taking a cue from a view expressed in the report of the Sivaraman Committee, the Dandekar Committee argues that the Package Scheme was not adequately effective as "it does not distinguish between industrially underdeveloped areas which are near Bombay-Pune and which are not so near" [Dandekar 1984, p. 277, para 13.57]. The Committee therefore recommends the grant of incentives on the basis of two criteria, viz., (i) industrial backwardness and (ii) distance from the developed region of Bombay-Pune. Surprisingly in the criticism of the Committee's approach referred to above the Committee has been faulted for "making distance from Bombay and not solely industrial backwardness the criterion for differential treatment" [Dandekar 1984, p. 470]. In this context it is pertinent to note that though the argument in the criticism under review seems to take up cudgels on behalf of the *backward districts* on the ground that they do not benefit enough from the Committee's approach, the basic thrust seems to be to prop up the case for special treatment to Vidarbha and Marathwada regarded as *backward regions*.[4] It is interesting to note in this connection that the Committee's proposals for the revision of the Package Scheme is likely to benefit areas in Marathawada and Vidarbha more than those in the other two regions, viz. Konkan and Western Maharashtra. This needs to be explained.

The Government of Maharashtra Package Scheme existing prior to the Committee's recommendations classified the developing areas (i.e. those outside the Bombay-Pune region) into "three groups, B, C and D depending upon the industrial backwardness of the area, and incentives (were) offered in a graded scale - minimum amount of incentives being available in Group B and maximum in Group D" [Dandekar 1984, p. 277, para 13.58]. Group A consisted of Bombay and Pune Metropolitan Regions, where no incentives were available. For classification of areas in Groups B, C and D, taluka was taken as the unit of classification. Under the Committee's recommendations talukas are classified as Groups A, B, C, and D taking both industrial backwardness and distance from Bombay-Pune region into

account. The Committee also recommended a scale of incentives which, in its view, are "sufficiently steeply graded to give the needed advantage to Group D talukas over Group C talukas and to Group C takulas over Group B talukas" [Dandekar 1984, p. 281, para 13.66]. Clearly if a taluka is pushed to a higher group under the Committee's scheme it is eligible for a lower relative scale of incentives, whereas a taluka placed in a lower group would benefit from a higher relative scale. The result of the Committee's exercise is presented in the table that follows:

PACKAGE SCHEME OF INCENTIVES

Districts	Total No. of Talukas	Number of Talukas pushed to Higher Group under the Committee's Scheme	Number of Talukas Placed in a Lower Group under the Committee's Scheme
(1)	(2)	(3)	(4)
1. Thane	13	5	None
2. Raigad	14	11	None
3. Ratnagiri*	15	7	None
Konkan	42	23	None
4. Nashik	13	7	None
5. Dhule*	10	1	None
6. Jalgaon	13	2	2
7. Ahmednagar	13	7	None
8. Pune	14	12	1
9. Satara	11	7	None
10. Sangli	8	5	None
11. Solapur	11	6	None
12. Kolhapur	12	5	None
Western Maharashtra	105	52	3
13. Aurangabad	12	2	None
14. Parbhani	8	None	3
15. Beed*	7	None	None
16. Nanded	8	None	1
17. Osmanabad*	11	1	None
Marathwada	46	3	4
18. Buldhana*	5	None	None
19. Akola	6	None	1
20. Amravati	6	None	1
21. Yavatmal*	5	None	None
22. Wardha*	3	None	None
23. Nagpur	5	None	None
24. Bhandara*	3	None	None
25. Chandrapur	6	None	1
Vidarbha	39	None	3
Maharashtra	232	78	10

* In these districts all the talukas were in Group D under the Package Scheme which existed prior to the Committee's recommendations.
Source: Dandekar Committee Report, Chapter XIII, Annexure B.

It is seen that of the 232 talukas in Maharashtra 78 (34 per cent) were pushed to a higher group under the Committee's scheme, i.e. they were put to greater relative disadvantage in respect of the package of incentives. What is noteworthy is that in Konkan 23 of the 42 talukas (i.e. 55 per cent) and in Western Maharashtra 52 out of 105 talukas (i.e. nearly 50 per cent) were pushed to a higher group. By way of contrast, only 3 of the 46 Marathwada talukas (i.e. 7 per cent) and none of the 39 Vidarbha talukas were so disadvantaged. If we consider the number of talukas regionwise which were placed in a lower group (i.e. which secured greater advantage under the Committee's

scheme), we obtain the following picture: Konkan (none of the 42 talukas); Western Maharashtra (3 out of 105 talukas); Marathwada (4 out of 46 talukas); and Vidarbha (3 out of 39 talukas). Marathwada and Vidarbha fare a little better than Konkan and Western Maharashtra in this respect. One more detail is worth-mentioning viz., the number of talukas in a region which were classified in Group D (the most advantaged group) under the two schemes: the prevailing Government Scheme and the Committee's Scheme. The data are presented in the following table.

GROUP D TALUKAS (REGIONWISE)

Region	Total No. of Talukas	Group D talukas under the Prevailing Scheme	Group D talukas under the Committee's Scheme
(1)	(2)	(3)	(4)
Konkan	42	24	10
Western Maharashtra	105	73	44
Marathwada	46	40	41
Vidarbha	39	35	38
Maharashtra	232	172	133

The number of Group D talukas in Maharashtra which was 172 under the prevailing scheme was reduced in the Committee's Scheme to 133. Interestingly, the reduction is confined entirely to the numbers in Konkan and Western Maharashtra. In Marathwada and Vidarbha there has been a small increase in numbers; but then even under the prevailing schemes the bulk of the talukas in these districts were classified as Group D talukas. In view of the foregoing it is difficult to see how "making distance from Bombay and not solely industrial backwardness the criterion for differential treat" in the package scheme of incentives, harms the interests of backward districts, particularly those in Marathwada and Vidarbha regions.

One point, however, may be made in respect of government's function of promoting and facilitating the private productive effort in the industrial sector. It is seen that, though the data presented in the Committee's report brings out the lopsidedness of assistance by MIDC and SICOM, the Committee does not make any specific recommendation for correction of this lopsidedness. The Committee probably assumes that in this matter highlighting the inequity is sufficient to induce the Government to take corrective steps.

Indicators for Backlog-estimation

Clearly in certain sectors indicators needed for estimating backlog in districts suggest themselves. For example, take the programmes of rural electrification. An indicator which leaps to one's mind is the percentage of villages in a district that have been electrified. Following the Dandekar Committee, one can then describe districts with a percentage of electrified villages lower than the average for Maharashtra as the lagging districts, and the physical backlog would consist of the number of villages in the lagging districts requiring rural electrification to be raised to the state average. Given the cost of electrification of a village as estimated by the Maharashtra State Electricity Board, one can work out, as the Dandekar Committee did, the total cost of backlog-removal in the lagging districts.

Conditions may not be equally favourable in several other sectors of development. The Committee's selection of an indicator for backlog-estimation in a sector may then be legitimately criticised on the ground, for example, that the data on an indicator used by the Committee for estimating backlog pertains to a single year when an average of figures for a period of years would be more useful. Thus, for example, the Empowerment Committee (consisting of Government officers) appointed by the Government of Maharashtra in May 1986 to study in depth the approach and recommendations of the Dandekar Committee with a view to preparing proposals for consideration of the Cabinet, subjected to criticism the procedure of the Dandekar Committee for estimating backlog in irrigation according to which the irrigation potential in districts was related to Net Area Sown in 1978-79. In the view of the Empowerment Committee, the 1980-81 figures of Net Area Sown which were then available showed that if these latter set of figures were used the picture in respect of districtwise

backlog would appear different. The Empowerment Committee therefore felt that a better procedure would be to use an average of figures of Net Area Sown during the preceding three years [Planning Department 1987, p. 9, para 4.3]. Or again the Empowerment Committee also argued that the policy of backlog-removal may have to be tempered by the need to fulfil the Government's commitments in other respects. For example, given the tribunal award relating to distribution of water in the Krishna basin, it was imperative for Maharashtra State to utilise the allotted water before the close of this century. This may necessitate giving some priority to irrigation schemes for the Krishna basin designed for the purpose [Planning Department 1987, p. 9, para 4.5]. All this means that there is nothing sacrosanct about the specific indicators used by the Dandekar Committee. These were used on the basis of available data and consensus within the Committee as regards their suitability. But an appraisal of these indicators and their replacement, if necessary and possible,by more suitable indicators, would be a continuous process. The Committee implied as much when it postulated the possibility of 'other and more relevant indicators' being 'chosen to assess the backlog' in future. [Dandekar 1984, p. 390, para 17.37].

There is, however, one aspect of the choice of indicators which needs to be touched upon at this stage. The point involved is best brought out by citing a criticism by the Empowerment Committee of the indicator selected by the Dandekar Committee for estimating backlog in the field of general education. In fact, the Dandekar Committee estimated backlog here in terms of number of schools/colleges, student enrolment and number of teachers. However, the Committee used the backlog figures with regard only to teachers to estimate the cost of backlog removal. The indicator used by the Committee was the 'prevailing cost per teacher in each category of education', as, in its view, this indicator was 'operationally the most meaningful'. The Empowerment Committee, on the other hand, argued in favour of choosing 'the prevailing cost per student enrolled in each category of education'. The reason given by the Empowerment Committee for its choice of indicator is that it is the Government of Maharashtra's declared objective to universalise primary education [Planning Department 1987, p. 16, para 6.4]. It then appears that the Empowerment Committee thought it proper to extend the same indicator for estimating backlog in secondary and university education as well.

From the tables in the Report of the Dandekar Committee showing backlog in student enrolment and in the number of teachers at each level of education, it can be deduced that (i) the total cost of backlog-removal for a district is likely to differ depending on which criterion is used and (ii) the districtwise break-up of the aggregate cost for Maharashtra would also be different under the two competing criteria [Dandekar 1984, pp. 160,162,165]. The choice of the criterion is thus likely to make material difference to the lagging districts. The question, then, is: which of the two criteria is to be preferred.

It will be seen that even when the teacher-cost-based criterion of the Dandekar Committee is used, the funds which would become available to a district could not be spent entirely on teacher appointments. Clearly grants from Education Department to institutions in districts (on which 'cost per teacher' is based) include several items beside teachers' emoluments, such as purchase of materials by educational institutions, scholarship to students, rent of buildings and so on. All the same, a lagging district will have to spend enough on teacher appointments to remove backlog in respect of the number of teachers as estimated . This means that there would be some correspondence between the allocation of funds for backlog-removal and the degree of backlog-removal effected. This correspondence would be helpful to the Government in judging the efficacy of its policy. Unfortunately, the same cannot be said about the enrolment-based criterion of the Empowerment Committee. The criterion gives us, to be sure, the amount to be allocated to the different lagging districts. This amount also will have to be spent on teacher appointments, purchase of materials and other items mentioned earlier. But there is no knowing whether the student enrolment will actually increase in the lagging districts so as to correct

the estimated backlog. There is no direct correspondence between the backlog- removing expenditure and the removal of backlog in terms of student enrolment. This is evidently because the student enrolment takes place only as a response of households to the facilities created, and the Government cannot be certain that expenditure incurred will necessarily call forth the right response resulting in an increase in student enrolment in the required degree. In order to provide guidelines to Government in its effort to remove backlog in a meaningful way we ought to distinguish between criteria related to facilities/services created by Government (such as, for example, teacher appointment) and those linked to the effect of Government spending (viz., for example, student enrolment) [Planning Department 1987, p. 65, para 4]. The former set of criteria are obviously preferable to the latter as they provide the contours of a meaningful backlog-removal policy. From this angle the teacher- based criterion of the Dandekar Committee scores over the enrolment-based indicator of the Empowerment Committee.

State Planning : Backlog-removal as Focus

It was noted earlier that the Dandekar Committee made a plea in favour of a continuous exercise from plan to plan on the lines of its approach to quantify backlog with a view to removing it in a phased manner. The Committee expected that as more and more data became available the exercise would be extended to more sectors/sub-sectors/schemes/programmes 'to assess the backlog of districts ..... in an expanded, improved and more detailed form' [Dandekar 1984, p. 390, para 17.37]. It is also worth mentioning that, as per the Committee's recommendation, the approved outlay on the schemes examined by them (constituting around 40 per cent of the State's annual plan in 1983-84) was to be set aside as a pool of resources, 85 per cent of which was to be used for removing backlog in specific sectors in identified districts, the remaining 15 per cent of financial resources being permitted to be used for (a) completing some of the on-going works in the non- backlog districts and (b) meeting, at least partially, the needs of natural growth in public services, necessitated, for example, by increase in population. This means that as more and more sectors/sub- sectors/schemes/programmes came within the purview of backlog estimation exercise, the process of backlog-removal would come to pre-empt an increasing proportion of plan resources.[5] All this suggests, that in the view of the Committee, planning in Maharashtra should be oriented principally to the removal of backlog of districts.[6] In fact, the Committee's claim seems to be that it is suggesting an alternative strategy of development, namely, "development by lifting the bottom rather than pulling up the top" [Dandekar 1984, p. 391, para 17.37]. A question that arises is whether such a strategy would be conducive to the realisation of the full growth potential of the state economy.

It appears that the Committee seeks to take care of the growth-orientation in plan-making by desisting from recommending-even envisaging - either a change in the size of the state plan or any reallocation of available funds between sectors because "the requirements of sectoral balance are equally important and must be determined at the Central and State Government level" [Dandekar 1984, p. 34, para 3.34]. The size of the plan and the sectoral distribution of plan funds are evidently related to the growth objective. Given the size of the plan and sectoral allocation of resources, the Committee expects that funds for sectors examined by them would be distributed among the districts with a view to removing backlog. Thus the backlog-removal strategy need not hamper the realisation of the state economy's growth potential as perceived by those who make and implement the plan.

There is one aspect of the matter, however, that merits attention. The annual plan of Maharashtra State is made up of schemes classified as (a) state level and (b) district level schemes. District level schemes are those which benefit mostly the residents of a district and which are best planned only at the district level from the point of view of optimal utilisation of the natural and other resources of the district. State level schemes, on the other hand, benefit more than one district and are planned at the state level. There is also a hybrid category of, what are described as, 'state pool

schemes', which benefit mostly the residents of a district but which are planned at the state level for special reasons. These schemes are treated as a sub-category of the district level schemes.[7] From the data in the Dandekar Committee Report on the approved outlay on the annual plan of Maharashtra for 1983-84 it is seen that nearly 57 per cent of the plan outlay was accounted for by state level schemes, 13 per cent by district level schemes within the state pool and 30 per cent by other district level schemes,i.e. district schemes proper [Dandekar 1984, p. 380, para 17.16]. One may possibly argue that backlog in respect of benefits from public services is, relatively speaking, a more meaningful concept in the case of district-level schemes, whether in the state pool or not, as benefits from these schemes go identifiably to respective districts. This, however, is a one-sided view. Though it is true that state level schemes have a wider dispersal of benefits, it does not follow that districtwise backlog cannot be estimated in the case of these benefits. Thus, for example, in respect of works relating to irrigation from surface water resources, which include major irrigation works making up the state level schemes, the Dandekar Committee has estimated physical backlog in terms of irrigation potential created in each district. This suggests that there can be methods of capturing the flow of benefits from state level schemes to specific districts which would then facilitate estimation of districtwise backlog. In fact, if it were true that backlog- estimation was not possible in the case of most state level schemes, the backlog-removal approach could be faulted on the ground of being a partial approach in that it bypasses the backwardness of districts originating in the maldistribution of benefits from state-level schemes. In fact, of the total approved outlay in the plan of 1983-84 pertaining to all schemes examined by the Dandekar Committee that on state level schemes was about 42 per cent .[8] Thus as more and more sectors/sub-sectors/schemes/ programmes come within the ambit of exercise proposed by the Dandekar Committee, backlog-removal will inevitably become the principal thrust of development planning in Maharashtra within the confines, to be sure, of the given sectoral division of plan resources.

This, however, does not mean that districts developed in an over-all sense will be starved of plan funds for an indefinite length of time. For one thing, as we have noted, the backlog is to be estimated separately for sectors/sub-sectors/schemes/ programmes. It is not likely that a district will be above the Maharashtra average in respect of every sector/sub-sector/scheme/ programme. This comes out clearly in the districtwise information in the Committee's Report on the grand total of cost of backlog in respect of all schemes reviewed by the Committee [Dandekar 1984, p. 400]. All the same, we ought to envisage the possibility that there would be in a sector "a certain acceleration of the pace of development in the districts lagging behind and to that extent a certain slowing down of the pace of development in the districts which are already ahead" [Dandekar 1984, p. 35, para 3.35]. The Committee insists that this implication should be recognised and stated explicitly. Secondly, backlog estimation is expected to be a continuous activity. As backlog in a sector is removed, "the State average also rises and some areas, which until now were above the average, may fall below the new average" [Dandekar 1984, p. 35, para 3.37]. In that case, these areas will merit attention under the backlog-removal programme in the sector concerned.

There has been some comment on the Dandekar Committee's recommendation that as large as 85 per cent of the approved allocation to schemes be used for removing backlog in specific sectors in identified districts, the remaining 15 per cent of resources being set aside for completing on-going works and for meeting, at least partially, the needs of natural growth in public services. Thus the Empowerment Committee referred to earlier has expressed the view that in the field of surface irrigation, in any case, so large an amount as 85 per cent of approved allocation cannot be earmarked for backlog-removal as the Government of Maharashtra will require substantial resources to fulfil expectations in respect of full utilisation, within a stipulated period, of water in river basins awarded to Maharashtra or in respect of projects aided by international institutions which lay down a time-frame for completion of projects [Planning Department 1987, p. 10, para 4.6]. One does not

know what types of constraints work in respect of which sectors and what proportion of resources would be pre-empted by the need to pay attention to such constraints. Then again, the Committee envisages the need to allocate for completion of on-going projects only a portion of not more than 15 per cent of the approved allocation for a sector. It has been estimated that in the district planning set-up in Maharashtra "on an average not more than 8 to 10 per cent of the (plan) outlay is available for planning new schemes," [Paranjpe 1987, p. 331], the rest of the outlay being for continuing schemes and inevitable expansions. Clearly, if a substantial amount of resources are to be released for backlog-removal, then the policy-makers ought to look upon this 'burden of the past' as a challenge. "The 'inertia' of the on-going schemes stems largely from the 'inertia' of the implementing agencies and their reluctance to take a hard look at the existing schemes and propose dropping them whenever indicated.... A rigorous zero base budgeting should be undertaken and each scheme should be examined afresh as if it was not there and is to be introduced for the first time. ..... In this way, if a scheme-by-scheme exercise is carried out, many on-going schemes will give way, yielding valuable funds for financing new relevant schemes" [Paranjpe 1987, p. 333]. The continuation of the on-going schemes in the lagging districts that still remain after this scrutiny (in respect of both state sector and district sector projects) will necessarily form a part of the backlog-removal process. Those of a similar type in the non-backlog districts will have to be provided for out of the portion of 15 per cent allocation set aside by the Dandekar Committee for the purpose. It seems to be the Committee's view that the allocation recommended by it for continuance of on-going projects of the latter variety from annual plan to annual plan should be adequate for the purpose. It states: "A scrutiny of the on-going works will show that in many cases no more than a token beginning has been made. These should be sorted out and all such works not relevant to removal of specific backlog should be declared postponed for the duration of the Seventh Plan so that their claim as on-going works is not pressed in each successive Annual Plan. On the other hand, in some cases, work would have progressed too far for its completion to be postponed. These may be completed within the small provision that we can make. The Government may decide, on some objective considerations, the districts in which these works may be taken up in successive Annual Plans" [Dandekar 1984, p. 383, para 17.22].

Backlog-removal and the Autonomy Aspect

The Committee's approach raises the question of the degree of autonomy in decision-making that is left with district/taluka authorities. The Committee itself estimated the backlog in physical terms and the cost of removing it during the Seventh Plan period. As stated above, it expects the process of backlog estimation to be continuous. "At the end of the Seventh Plan, the entire position should be reviewed. The exercise we have done to examine regional disparities in different fields and assess the backlog of districts should be reworked in an expanded, improved and more detailed form" [Dandekar 1984, p. 390, para 17.37]. Thus backlog will be calculated from Plan to Plan at the state level either by a specially - appointed Experts Committee or by experts in the Planning Department of the State Government and financial implications of backlog-removal worked out to provide the basis for a continuing policy of narrowing inter-area disparities. It could then be argued that given the estimated backlog and the funds earmarked for its removal sector by sector in every concerned district as a part of what appears to be a comprehensive approach to development planning, there will hardly be any autonomy left at the local level. The local level body, for example, will have no authority to divert funds meant for removal of specific kind of backlog to some other activity, even if the representatives at the lower level regard the alternative course of action as preferable to the removal of backlog in question. One may then wonder whether the district level body dealing with development activities (such as the District Planning and Development Council or the Zilla Parishad) will not be rendered ineffective if the Dandekar Committee approach to removal of inter-area disparities is put into action in all seriousness.

Apparently, the acceptance of the Dandekar Committee approach is "inconsistent with the principle of decentralised planning which implies freedom of the district planner to plan in his discretion" [Paranjpe 1987, p. 261, para 8.23]. It has been argued that this constraint on the district planner's freedom can be regarded as "necessary if it is seen as a consequence of the failure of district planning" [Paranjpe 1987, p. 261, para 8.23]. "If district planning had been practised systematically over a number of years, the need to provide for removal of specific backlogs might not have arisen. If the district planner had properly provided for equitable distribution of social services and infrastructure facilities, there would not have been backlogs to be wiped out later" [Paranjpe 1987, p. 262, para 8.23].

This line of reasoning can be faulted on three grounds. Even under the best of circumstances relating to district planning - which, it is commonly agreed, do not exist in Maharashtra - the district planner can be held responsible only for results in respect of works included in the district plan. This means that the inter-district imbalance attributable to the implementation of plan in the 'state sector' (as distinct from the 'local sector') has to be reckoned with outside the framework of district planning. The backlog on this account could not have been corrected even if "the district planner had properly provided for equitable distribution of social services and infrastructure facilities.". Secondly, it is evident that if a district lags behind in a certain sector of economic activity this may be due to insufficient allocation of funds to the district for plan works in the sector or to inefficient utilisation of funds allocated or to both these factors. In the present set-up of district planning in Maharashtra it is difficult to apportion the major portion of blame for insufficient allocation of funds to the district planning body. As was mentioned above about 30 per cent of the total entitlement of the district level schemes (which made up the district Plan) was accounted for by the 'state pool' schemes in 1983-84. These are schemes which benefit primarily the residents of the respective districts but in whose case planning and funding is done at the state level for special reasons. Any imbalance generated by faulty allocation of funds for these schemes among districts is the result of decisions taken at the state level. What is more, even in respect of district level schemes proper there is hardly any planning in the real sense at the district level. This is (a) because 'the kind of planning methodology and the rigorous discipline expected in the formulation of district plans would require a degree of expertise which is just not there at the district level' [Paranjpe 1987, p. 326, para 9.52], (b) due to "the established pattern of schemes in which Central assistance completely dominated the thinking of the State and district planners and the effort was to grab as much Central assistance as possible by accepting Central and Centrally-sponsored schemes" [Paranjpe 1987, p. 327, para 9.53], and (c) because "there is ..... a fundamental dysfunctionality between the requirements of district planning and the existing administrative structure" which "is vertically dominated" [Paranjpe 1987, p. 334, para 9.60]. As for inefficiency in utilisation of funds allocated to respective districts, it is difficult to see how even the most efficient utilisation of funds by all districts would take care of inter-district disparities, given the allocation of funds among districts.

There is, however, a more basic flaw in the reasoning under review here. An evident implication of this line of argument is that the Dandekar Committee proposals which became necessary because of failure of district planning are essentially of a temporary nature which would not be needed when district planning begins functioning in the desired manner. Such a presumption runs counter to several pronouncements of the Committee describing its approach as a plea in favour of an alternative strategy of development which has to be pursued continuously from Plan to Plan. In fact, the line of action proposed by the Committee has to be continuous since with backlog districts being brought to the level of the state average in a sector, the state average will itself rise and some areas, which previously were above the average, may come to show a backlog.

All this leaves open the question of the degree of autonomy to be permitted to the district/talukas bodies. Clearly the autonomy in district planning does not mean that the district planner should be completely free to decide on district level

schemes irrespective of sectoral priorities being laid down at the state and national levels. However, the local level population will not feel alienated from the planning mechanism in the state if through the close association of a vibrant, representative Panchayati Raj system with plan-making in the state, it is able to influence the thinking in the state on sectoral plan priorities by projecting forcefully its perception of priorities in respect of district level schemes. Furthemore, given the sectoral priorities as determined at the state-level, the backlog-removal approach does not necessarily negate completely the autonomy of local bodies. These bodies will still have the authority to select specific projects in a sector, to determine the location of projects within the district/block and to supervise effectively over implementation of the plan schemes. Probably the committee implies as much when it states that, given the funds earmarked for backlog-removal, "the DPDCs should be given greater discretion to decide in consultation with the concerned departments, as to how these funds may be spent so that the backlog may be removed effectively and expeditiously," [Dandekar 1984, p. 390, para 17.35].

FOOTNOTES

1. An extract of the Chakravarty Committee's Report is included as Annexure 4.1 (pp.41-45) in the Report of the Sivaraman Committee.

2. It is needless to add that the prevailing cost here means not the total cost incurred by all educational institutions, aided and unaided , but only that part of it which was borne by the aided institutions out of grants from the Education Department, Government of Maharashtra.

3. In fact, there were 55 State Government PSEs in 1986-87, out of which only 41 were covered in the Government of Maharashtra publication cited in the text. [SBPSE 1988, pp. 215-216, Annexure]. This means that the PSEs listed in the Report of the Dandekar Committee accounted only for 18 per cent of the total PSEs of the Government of Maharashtra on the assumption that all the 55 PSEs were in operation before April, 1984, when the Dandekar Committee Report was submitted. [The Government publication on PSEs (March 1988) does not provide information on the dates on which the individual PSEs were established].

4. The following quotation is suggestive: "More sugar factories, cotton spinning and weaving mills, oil-crushing and processing units and numerous ancillaries linked to such industries must be set up in Vidarbha and Marathwada districts." It is also argued that "region or division ... represents a high mobility zone and people from all the constituent districts of the division can be expected to benefit" from an industrial project located therein [Dandekar 1984, p. 477].

5. Consider the following quotation from the Committee's Report: "We may note that the Maharashtra State Electricity Board finances a substantial portion of its rural electrification and energisation of agricultural pumpsets programme from resouces outside the Plan, almost as large as the resources within the Plan. These are naturally not shown .. in the Plan outlays" [Dandekar 1984, p. 380, para 17.17]. The Committee adds that its recommendations relating to plan resources for backlog-removal apply equally to such non-plan developmental resources. This suggests that in the Committee's scheme of things an increasing proportion of resources for development - and not just of plan resources - will get earmarked for removal of disparities in development.

6. It is indeed revealing that the Committee places emphasis on "a commitment that not only any additional central assistance that may become available but the entire resources at the disposal of the State Government will be directed to reducing the disparities in development within the State" [Dandekar 1984, p.34, para 3.33].

7. For distinction between the schemes made here, please see: PREC 1986, p. 147, paras 9.8 and 9.9; p. 150, para 9.16. Also Paranjpe 1987, pp. 91-92. (Paranjpe was at one time the Secretary, Planning Department and later Chief Secretary, Government of Maharashtra.)

8. Based upon data in Dandekar 1984, p. 380, para 17.16.

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ANNOTATED INDEX OF BOOKS AND ARTICLES IN INDIA

EDITOR'S NOTE

These abstracts are prepared by the author of each book/article sent to us voluntarily in response to our invitation through the Economic and Political Weekly. These cover publications after 1st January 1986. Only abstracts of books/articles so received are published The index therefore is not exhaustive and complete.

The limit of 250 and 100 words for abstracts of books and articles respectively is being strictly enforced.

Only a minimum amount of copy editing has been done on these abstracts in order to bring them within the limits prescribed. The readers therefore should approach the author of the abstract and not this Journal, if they detect an error of fact or phrasing therein.

BOOKS

1986

Dhawan, B.D., *Economics of Groundwater Irrigation in Hard Rock Regions.* Agricole Publishing Academy, New Delhi, 1986, Pp. 101.

This is Dhawan's second study on groundwater economics. Whereas the first one focussed on the problems of tubewell irrigation in the vast Indo-Gangetic alluvium, this one is about dugwell irrigation in the hard rock regions with special reference to Maharashtra State. Both are published in the Institute of Economic Growth series under the title 'Studies in Economic Development and Planning'.

The book consists of five chapters. The two main problems of concern in this book are (a) how to improve the low returns from investment in dugwell irrigation in water-short hard rock areas and (b) how to overcome the high uncertainty of these returns. The solution lies in exploitation of surface water resources, as the substantial seepage from canals and tanks magnificiently enhances groundwater availability. The validity of this course of action is demonstrated by the author for canal-irrigated and non-canal-irrigated talukas of Ahmednagar district of Western Maharashtra. It is found that well owners, benefitting from percolation of canal waters into their wells, realise four times the rate of return reported by their counterparts in the non-canal tracts. In short, the author is advocating a conjunctive system of irrigation, and supports the Gokhale Scholars who have been pleading for development of extensive canal irrigation with the limited water resources of State of Maharashtra.

Mahajan, V.S., (Editor), *Studies in Indian Agriculture and Rural Development*, Deep and Deep Publications, New Delhi, 1986, Pp. 671.

The volume contains 29 papers from K.N. Raj, S.S. Johl, K.T. Achaya, C. Gopalan, Ashoka Mody, Shri Prakash, Sudipto Mundle, Kamta Prasad, V.M. Rao, M.L. Dantwala, V.K.R.V. Rao, H.K. Manmohan Singh, S.C. Patnaik and others. The areas discussed are - growth of agriculture, cropwise production and productivity; comparative study of China and India; nutrition and food; essential forestry; fertiliser consumption and problems; rural resource generation and mobilisation; agricultural credit; prices; income distribution and poverty; food security, and public stocks; barriers in rural development; role of voluntary agencies in rural

development; women's participation in agriculture; regional growth of agriculture; institutional financing of rural development schemes; new agricultural strategies; intersectoral movement of rural manpower; planning for poverty alleviation; problems of agriculture in tribal areas and shifting cultivation and related issues.

Srivastava, H.C. and Chaturvedi, M.K. *Rural Middlemen: Network of Patronage*, Ashish Publishing House 8/81, Punjabi Bagh, New Delhi, 1986, Price Rs.100/-

The book is the outcome of an ICSSR funded empirical study of the phenomenon of middlemanship prevalent at grassroot level. Rural middlemen, coming from the background of landlords, political workers, ex-zamindars, caste chiefs, and elected village representatives, act as go-between their rural clients-in-need and state bureaucratic and financial institutions. Available as 'market service', the middlemanship has commodified the goods and services that flow through the process of development in rural sector.

1987

Mahajan, V.S. (Editor), 1987 *Studies in Industrial Economy of India*, Deep and Deep Publications, New Delhi, 1987, Pp. 912 (two volumes).

This book containing 29 papers from J.C. Sandesara, R.G. Nambiar, Arun Ghosh, Vinay D. Lall, Ramaswamy R. Iyer, Hiten Bhaya, Ramaprasad Sengupta, Amiya Kumar Bagchi, S.K. Goyal, M.R. Bhagavan, R. Nagaraj, Kamta Prasad, Shri Prakash, Nasir Tyabji, K. Munirathna Naidu, P. Chattopadyay and others, is devoted to the study of key areas in India's industrial development following the introduction of planning in the country - their progress, their difficulties, their present and future, and effectiveness of the Government policy instruments in their growth.

Volume 1 includes: Industrial growth; trends and structure of industrialisation; anatomy of deceleration in industry; protection of domestic industry; efficiency and productivity of manufacturing industry; financing private corporate sector; political economy of slow industrial growth; public enterprises; Patent Act and technical development; industrial licensing system.

Volume 2 includes: Capital goods sector; price and output movement of agro-based industries; small industry and sub-contracting; rural industrialisation and poverty alleviation programmes; and regional industrial growth.

Mahajan, V.S., (Editor), 1987 - *Emerging Pattern of North-Eastern Economy*, Deep and Deep Publications, New Delhi, Pp. 288.

This volume contains 19 papers by H.S. Dubey, Shri Prakash, R.L. Walli, Raj Kumar Sen, P.C. Barua, B.P.Maithani, S.N. Guha Thakurta, Arun Kumar Gangopadhya, K.K. Upadhyay, T. Lawma, H. Nabakishore Singh, A.K.A. Agarwal, V.S. Mahajan and Thangchungnunga. The volume covers the growth pattern of the seven States in the North-East and covers areas of agriculture, industry, planning, consumption pattern, banking and finance; rural development programmes; manpower; transport and energy.

Poduval, R.N., *Foodgrain Economy of Tamil Nadu: Problems and Prospects:* Emerald Publishers, 135, Annasalai, Madras - 600 002, 1987, Price Rs.90/-.

This is the first comprehensive and integrated study of the foodgrain economy of Tamil Nadu. Although the study focusses on Tamil Nadu, the foodgrain economy of the State has been analysed within the framework of the national food economy. The analysis departs from the traditional Malthusian framework of analysis of the food problem by emphasizing the importance of accessibility to food in the sense of income or purchasing power which depends on provision of employment opportunities and adoption of egalitarian measures. Aside from this departure from the traditional approaches to the food problem, the major issues considered are: the impact of seed

- fertilizer - irrigation technology on production and productivity; the instability in foodgrain production; the consumption pattern of foodgrains; and public intervention in the foodgrain economy. Pointed attention has been drawn to the magnitude of hunger and the need to undertake measures to eradicate it.

1988

Dhawan, B.D., *Irrigation in India's Agricultural Development : Productivity, Stability, Equity.* Sage Publications, New Delhi, 1988, Pp. 205.

This is Dhawan's third book on Indian irrigation, all published in the Institute of Economic Growth's series 'Studies in Economic Development and Planning'. It consists of ten chapters, with focus on the issues of productivity, stability and equity of Indian irrigated agriculture. The author has made extensive use of country-wide statistics and survey data gathered by other agencies/scholars.

A part of the contribution of this work is in the methodological realm. In Chapter 3, entitled 'Methodology for Assessing Irrigation Impact', the author has developed a regression schema for estimating land productivity by type of irrigation from district-wise statistics of crop areas and production. A modified differencing procedure is given for deriving the production impact of each irrigated hectare from the available data on irrigated and unirrigated crop yields. A foodgrains equivalence scale, based on calorie content, is used for crop aggregation.

According to the author, irrigation has performed reasonably well in India, on both production and stability counts. There is a firm upward tendency in overall irrigated yield. This yield is highest on farms watered by private tubewells, and lowest on those dependent on tanks. Canal irrigation falls in between these two types of irrigation. The output effect on one gross irrigated hectare amounted to about 19 quintals. Evidence on gains from irrigation to different farmer categories is a mixed one.

The book is replete with a wide range of policy and practical implications.

Kathuria, Sanjay, *Indian Handicraft Exports : Constraints and Prospects* Tata McGraw Hill and ICRIER, 1988, Price Rs.150/-.

Investment in the handicrafts sector generates substantial employment and foreign exchange income, particularly in India, which has variety of craft skills. The book surveys in depth the potential of and limitations to Indian handicraft exports.

Based on field studies at home and abroad, the author has put together relevant data at macro as well as micro level on trade, employment and production.

A comprehensive assessment has been made of the size of the world market for handicrafts. The impact of tariff and non-tariff barriers and of transport costs on trade flows have also been analysed.

Among the micro level issues discussed are distribution network and its effectiveness, and the role of trade promoting and facilitating institutions in overcoming hindrances to trade development. The book also reviews processes of skill formation and transfer, production systems, technology and design development, and linkages between these and export performance.

The study advances a scheme for classification of handicrafts and reclassification of international trade statistics. Other suggestions relate, inter alia, to possible methods of trade promotion, potential growth areas and products, possible systems of quality control, improvement of design and development, use of better tools and techniques, modes of skill transfer, and different kinds of trade channels.

The macro and micro studies are of relevance to most developing countries, as organizational, institutional and export problems are often similar. Policy makers in developing countries and all those engaged in promoting handicrafts production and exports in developed and developing countries will find this book a dependable source of information and analysis.

Mahajan, V.S., *Economic Development of Border States of India,* Deep and Deep Publications, New Delhi, 1988, Pp. 278.

This volume which is primarily addressed to the border economies of the country and here especially to the sensitive areas in the North-East and North-West, tries to have a look into the key

economic issues as well as levels of development achieved by different States in these areas. The book is divided into four parts. Part One deals with the economic issues in the North East. Also the role that tribal culture as well as the maintenance of local identity can play in the development of this area - inhabited mainly by tribals of Mongoloid stock - has been spelt out from the experience of Mizoram and Nagaland. In Part Two, study is made of the Mizoram development experience in particular which has relevance to most other States in the North-East. Part Three concentrates mainly on Punjab, which has lately been a major trouble spot in the country. And while discussing Punjab the author includes Haryana, which in fact couple of decades ago, - before 1966 - was an integral part of Punjab. Part Four summarises the main issues in this entire study and spells out policy issues.

Mahajan, V.S.,(Editor), *Studies in Indian Planning*, Deep and Deep Publications, New Delhi, 1988, Pp. 502.

The book contains 27 papers from Tarlok Singh, K. Munirathna Naidu, D.M. Nanjundappa, Kamta Prasad, R. Mukherji, Nilakantha Rath, A.C. Minocha, K. Padmanabhan, M. Sebastian, D.M. Nanjundappa, P.K. Chaubey, B.M. Jani, N.S. Bhat, S. Velayudha Perumal, S.K. Goyal, S.K. Mandal, Ajit Kumar Sinha, D.N. Jha, R.S. Singh and V.S. Mahajan. It covers areas of planning process; growth and income distribution; operational and strategic aspects of planning; poverty alleviation systems and programmes; decentralised planning; plan administration; financing of plans; prices, inflation and savings; labour and wage policy; approach to education; and the future framework. It also reproduces a document *Plan for Solving Unemployment in Rural India* which was the result of close deliberation by a group of dedicated persons, many of them possessing long experience in planning either as academicians or as administrators. This document needs to be debated at the national level and also seriously considered by the Planning Commission and other bodies involved in the planned development of this country.

Purohit, Mahesh C., *Structure and Administration of Sales Taxation in India*, (with a Foreword by Prof. John F. Due, University of Illinois, U.S.A.), Reliance Publishing House, 3026/7-H, Ranjit Nagar, New Delhi 110008, 1988.

This book is a maiden attempt to comprehensively cover all the aspects relating to sales tax structure and administration problems in all the Indian States.

Beginning with the evolution, it presents various forms of sales taxes with its classificatory scheme, followed by fiscal role of sales taxes analysed in terms of buoyancy and elasticity as well as related tax effort of each of the States.

Structure of sales taxes is analysed in following four Chapters. Chapter 3 presents the existing structure of sales taxes along with a note on its development in each State. This is followed by an empirical analysis of incidence of sales taxes. Proposed rationalisation of sales tax system in India is presented in Chapter 5. Inter-State coordination along with the problems of consignment tax are discussed in the following Chapter.

Administrative aspects are covered in the next three Chapters. Chapter 7 presents administrative organisation for sales tax administration. It lays emphasis on headquarters organisation, administrative organisation, enforcement organisation and appellate organisation along with reforms in all the above aspects. Operations of sales tax including basic procedures of enforcement, registration procedures, processing of tax returns, assessment, evasion of sales tax, appeals, arrears and cost of collection have been analysed in Chapter 8. It also presents all the estimates of evasion of sales tax. Reforms in operations of sales tax have been highlighted at relevant places. Management information system for sales tax administration has been analysed and suggested MIS has been outlined. Finally, summary and policy imperatives forms the subject matter of the last Chapter.

Appendices giving information of the size of the States, Constitutional provisions and bibliography on the subject are also presented.

1989

Mahajan, V.S., (Editor), *Studies of Women Contribution to Indian Economic and Social Development*, Deep and Deep Publications, 1989.

This volume contains 32 papers from S. Uma Devi, Yasodha Shanmuga Sundaram, Raj Kumar Sen, S. Athar Raza Bilgrami, S.K. Goyal, Anirudh Prasad, Narayani Shrivastava, K. Alam, K. Shanthi, K. Padmanabhan, K.P. Singh, Samir Joshi, Amrik Singh, Usha Kundu, B.K. Vashist, Rabindra Kumar Choudhury, A.V.S.K. Rao and others. It deals with areas of theoretical aspect of women studies; women participation in agriculture and rural development programmes; women's contribution to development at regional level; demographic behaviour and status of women; occupational distribution of women work force; employment of women in organised sector; impact of education on women status; women entrepreneurs and executives; caste, Gandhi and women's social status; aging women; and women under national plans and programmes.

Srivastava, H.C., and Chaturvedi, M.K., *Dependency and Common Property Resources of Tribal and Rural Poor*. Commonwealth Publishers, 4378/B, Gali Murarilal, Ansari Road, Daryaganj, Delhi, 1989. Price Rs.120/-.

This study, funded by the Ford Foundation, reveals that the primitive form of survival on common property resources goes on reproducing poverty among the tribal and poor peasantry. Theoretically, this is an observation of articulation of multiple modes of economy that operate in India today.

Tyabji, Nasir, *The Small Industries Policy in India*, (Oxford University Press, Calcutta), 1989.

Historical research has shown that discussions on India's economic development strategy did not start *de novo* after Independence, but were based on propositions debated during the nationalist movement.

This book views the small industries policy as an historical product of the nationalist movement, specifically of one of its major ideological constituents, Gandhiism. A process of self-sustaining industrialization pre-supposed a growing market for machinery and basic consumer goods. This could be generated by a policy to encourage the growth and modernization of craft units developed to employ modern tools and wage labour. Interrelated to this process was the requirement of social stability. Independence had been achieved by a mass movement which had not hesitated to raise at times the legitimacy of a society based on institutions of private property. Some stability could be achieved in such a situation by the consolidation of a middle class based on modern small-scale industrial enterprises.

The author argues that "Nehruian Socialism" was the culmination of the process of reconciling middle-class radicalism with the economic and political requirements of the large industrialists. Their views dominated State Policy, but their grounds for manoeuvre were limited by their political inability to restructure agrarian relations in favour of peasant proprietorship. The Small Industries Policy was the concrete manifestation of the appropriation of Gandhian inspired sympathies for village craftsmen and the encouragement of small capitalist enterprises, so that both the economic and the political ends of industrialization could be met.

ARTICLES

1986

Mehta Rajesh and Gupta N.C., "Import Substitution in Petrochemicals: A case for Expansion in Capacity", *Foreign Trade Review*, 1986, xxi(3), pp. 309-17.

The paper attempts to estimate the extent of import substitution/dependence using two measures, of Thermo-Plastic industries in India, i.e. LDPE, HDPE, PP, PS and PVC. An appraisal of the results, particularly over the period 1978-82, reveal that import substitution had decreased in

the case of LDPE & PS, whereas import dependence has increased in the case of HDPE & PVC. PP does not reflect either import substitution or import dependence.

Minocha A.C., 'Spatial Dimensions of Rural Employment in Household Industries in Madhya Pradesh', *Spatial Dimensions of Indian Agriculture* - ed. Dalip S. Swamy, Agricole Publishing Academy, New Delhi, 1986.

The paper makes an attempt to analyse the growth of employment in the household sector industries. The analysis though based on limited data reveals some important aspects of rural industrialisation, such as shifts in occupational structure in the State as well as in different districts of the State. We get a fair picture of the spatial dimensions of the growth of household industries from the data that have been used in the study.

Purohit, Mahesh C., 'Reforming Sales Tax in Developing Countries: A Study of the Nigerian Sales Tax System', *International Bulletin for Fiscal Documentation* (Amsterdam), Volume 40, No.1, January 1986, Pp. 5-10.

This paper analyses revenue importance and cost of collection and presents the salient features of the structure and the administration of the sales tax system in Nigeria. It examines the objectives of reform and suggests that from the point of view of objectives of growth, equity, administrative expediency and co-ordination, it is essential (i) to have a federal sales tax, (ii) to achieve uniformity in the rate structure, (iii) to levy an admixture of the first- and last-point tax, (iv) to evolve proper procedures for enforcement of the tax, and (v) to have a properly designed management information system.

Purohit, Mahesh C., 'National Issues in States' Sales Tax Structure in India', *Economic and Political Weekly*, Vol. XXI, No. 7, February 15, 1986, pp. 299-303.

This paper analyses four crucial aspects of national importance for States' sales tax structure in India. First, it analyses ever increasing dependence on the first-point tax. Having analysed all the aspects, it puts forth suggestion to have a structure of two-point tax with set-off. Second, the paper presents varying treatment of inputs by different States. With a convincingly demonstrated empirical study it suggests that the States must follow the policy of no tax on inputs. Third, the issue of consignment tax suggests that the rates of tax should never be more than one per cent. Finally, the role of checkposts in administration of the tax needs to be reconsidered. At least the border checkposts must be abolished.

Purohit, Mahesh C., 'Estimating Cumulative Rates of Excise and Sales Taxes in India', *Economic and Political Weekly*, Vol. XXI, No. 40, October 4, 1986, Pp. 1760-63.

The overlapping co-existence of the two generalised systems of levy, viz., the excise at the Central level and the sales taxes at the State level has not only led to a complicated structure of taxation, but, each compounding the effects of the other through inter-action, has given rise to uncontrolled and unintended incidence on particular commodities. In this context, this paper is an attempt to derive an estimate of cumulative rates of excise and sales taxes in India through an application of input-output technique. The combined incidence of excise and sales tax has been worked out for three States, viz., Andhra Pradesh, Punjab and Rajasthan. These States represent three broad categories of input-taxation under sales tax systems in India.

1987

Mehta Rajesh and Nambiar R.G., 'Effect of Tariffs on Foreign Prices : the Case of India', *Economic and Political Weekly* xxii (24), Nov. 24, June 13, 1987, Pp. 942-944.

There appears to be an asymmetrical link between tariff rates and prices to this country relative to prices to the rest of the world. The latter has a tendency to be low when tariff is high

and conversely tend to be high when tariff is low. One important implication of this is that substantial tariff reductions in the presence of imperfections in the world market are suspect; the foreign producer would rob some, if not all, of the benefits of such tariff reductions. Instead, a rise in tariff might be rightly placed; it would exert pressure upon the foreign producer to absorb the tariff hike.

Mehta Rajesh and Seth Vijay K., : 'On The Measurement of State Level Capital-Output Ratios', *Indian Journal of Industrial Relations*, 1987, 22(4), Pp. 369-90.

The paper attempts to compare the inter-temporal changes in the capital-output ratios of large manufacturing industries in different states during the period 1962-1980. Apart from this, an attempt has been made to measure the capital stock of different states using refined methods.

Minocha A.C., 'Some Aspects of Regional Economics', *Regional Economic Planning in India* - ed. A.C. Angrish - Twenty First Century Publishers, Meerut, 1987.

The paper makes a brief survey of the developments in the field of regional economics. The major focus of the paper is on regional macro theories, regional income and employment, organisation of space, location, inter-industry input-output analysis. The paper also analyses the factors accounting for the belated development of regional economics and presents the current state of development of this discipline.

Singh Randhir, 'Marxists and the Sikh Extremist Movement in Punjab', *Economic and Political Weekly*, August 22, 1987.

Presents an understanding of the contemporary situation in Punjab, one of the problems facing the people's struggle there, from the standpoint of the actively-engaged Marxist revolutionary groups in the State.

Yadav Hanuman Singh and Minocha A.C., 'Spatial diffusion of Modern Agricultural Technology in Madhya Pradesh', *Indian Journal of Regional Science*, Vol.XIX No.2, 1987.

The paper examines the extent to which modern technology is diffused in agricultural sector of Madhya Pradesh and identifies the critical factors responsible for spatial diffusion of technology. The paper also presents some of the theoretical aspects of spatial technological diffusion comparing the theoretical construct with empirical evidence, process and level of diffusion regionally and its determinants.

1988

Mehta Rajesh and Nambiar R.G., : 'Tariff and Foreign Price: Some Further Evidence', *Economic and Political Weekly*, Special Number, xxiii (45,46,47), Nov. 1988, Pp. 2385-2394.

The inverse relationship between tariff and foreign prices for India's manufacturing industries is reconfirmed by more refined statistical investigations. As to the probable explanation we find no strong, *a priori*, ground to suspect the domestic restrictions upon imports for negative linkages. The chief factor influencing this relationship, it can be said without fear of contradiction, is the oligopolistic and monopolistic structure of foreign markets. Further, our calculations for alternative scenarios on tariff reduction and tariff increase show that the former reduces the national welfare while the latter improves it.

Minocha A.C., 'Regional Planning in India: Some basic issues', *Studies in Indian Planning* - ed. V.S. Mahajan - Deep and Deep Publications, New Delhi. - 1988.

The paper discusses the outlines of theoretical framework of regional planning and makes a rapid review of planning framework in India within which regional planning has to operate. It

examines critically the process of regional planning as it has evolved through the five year plans. The prospects of regional planning in India are also discussed in the paper.

Mehta Rajesh and Nambiar R.G., 'Price Competitiveness in the Indian Manufacturing Industry', *Economic and Political Weekly*, June 18, 1988, Pp. 1278-1284.

The main focus of this paper is on relative price structure and price behaviour - price and price movements in India vis-a-vis other countries. Investigations at the detailed commodity level reveal a tendency of home prices to drift downwards when compared with foreign price movements. Thus India's poor export performance does not represent a competitiveness problem *per se*. Instead, one might readily account for this in non-price factors, some of which are external factors. It appears that strait-jacket prescriptions such as exchange rate adjustment are unrealistic and misplaced.

Purohit, Mahesh C., 'Taxation of Contracts for Work : Policy Imperatives for a Sales Tax System in a Developing Country', *International Bulletin for Fiscal Documentation* (Amsterdam), Volume 42, No. 1, January 1988, Pp. 31-33.

The paper analyses the problems of taxation of contracts for work in the light of the 46th Constitution Amendment Act, 1982. As most of the States have tried to make use of the opportunity provided by the Constitution Amendment Act, they have defined the contract for work and attempted to levy the tax in such a way that this would be only a revenue yielding measure. The paper discusses the background of the Constitution Amendment Act and views taxation of contracts for work as an anti-evasion measure. It suggests that taxation of contract for work should be considered as a means to controlling the existing loopholes for avoiding and evading the tax. Accordingly, the tax should be levied on the total value of the contract with the complete set off for the amount of tax paid by the contractor on the inputs as well as raw materials and components bought by him. Failing the submission of accounts the contractor is denied the facility of set off. This approach would, therefore, use taxation of contract for work as an integral part of the enforcement of sales tax.

Raipuria K.M. and Panchmukhi V.R., 'Productivity Issues and Development Strategies in India', *Challenge of Asian Developing Countries: Issues and Analysis*, Ed. Shinichi Ichimura, Asian Productivity Organisation, Tokyo, 1988.

An attempt has been made to bring out the dimensions and issues of development strategy in India, and growth and structure of productivity observed during the period 1965-66 onwards. The discussion covers central as well as different policy aspects. Econometric analysis of usual macro-economic variables has been attempted for the major industries to highlight the relationships (a) between labour productivity and level of capital/value added; and (b) between the capital-labour ratio and the level of capital/value added. Analysis of productivity covers the energy sector.

Raipuria K.M., 'India and the World Economic Disarray during the Eighties', *Man & Development*, Volume X, No.1, March 1988, Pp. 27-48.

The paper provides discussion on the main aspects, dimensions and assessment of the world economic disarray from the view point of the developing countries in general and India in particular. Trade, aid, money and exchange rate dimensions are covered. Part II of the paper discusses how India faced this disarray in terms of economic adjustments, involvement in international discussions in multilateral forums, and South South cooperation. The paper points to the structural adjustment attempted by India, meaning a relatively liberalised trade regime which resulted in an increased opening-up of the

economy and off-the-trend growth rate performance i.e. over 5 per cent annually, maintaining self-reliance in investment and significant role of the public sector.

Singh Randhir, 'Theorising Communalism - A Fragmentary Note in the Marxist Mode', *Economic and Political Weekly*, July 23, 1988.

A provocative exercise in Marxian social analysis that questions and rejects the current conventional theorising on the subject of communalism in contemporary India, presents an alternative understanding, as also an approach towards effectively combating it - 'the struggle against communalism has to be a struggle against more than communalism' - and is suggestive of a model of how to think about similar social phenomena and related 'isms' besetting our country today.

Tyabji Nasir, 'State Aid to Industry : Madras 1921-1937', *Economic and Political Weekly*, Review of Political Economy, XIII (1988) 31.

The State Aid to Industries Act passed in 1923 implied that active promotion of industry was a legitimate function of the government. But 12 years later, the Public Accounts Committee of the Madras Legislature held that the Act had not served its purpose. This was mainly because of the rules made under the Act. The hands of the capitalists were tied, not only by the political nature of dyarchy, but by their own links to an agrarian structure dominated by landlords. Only with the growth of the nationalist mass movement, were they able to succeed partially in changing the formalised rules governing the Act.

1989

Minocha A.C., 'Growth Performance of Madhya Pradesh Economy', *The Economies of the States of Indian Union*, ed. Malcolm S. Adiseshiah - Lancer International, New Delhi, 1989.

The paper makes an appraisal of the development process of Madhya Pradesh economy in its different manifestations. It evaluates the performance of agricultural sector and its implications for growth and the emerging constraints to development and also the changing industrial sector. The paper also examines the planning machinery in the State and the methodology of plan formulation. It suggests alternative strategy and directions in which the State economy should move to achieve high rate of growth along with redistribution.

Singh Randhir, : 'Visions for the Future : Over-view', *Economic and Political Weekly*, April 8, 1989.

Presents a very brief, yet comprehensive, over-view of contemporary Indian social reality - economy, society, politics - from an orthodox Marxist standpoint.

The Journal will publish in each issue Annotated Bibliography of Books and Articles on Indian Economy, Polity and Society, published after January 1, 1986. Authors are requested to send their entries with full details of publication and annotation not exceeding 250 words for books and not exceeding 100 words for articles. Use separate sheet for each entry.

FORM IV

(See rule 8)

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I, A.S. Nadkarni, hereby declare that the particulars given above are true to the best of my knowledge and belief.

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