

STATISTICS IN RELATION TO RURAL DEVELOPMENT PLANNING*

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0.1 Let me, at the outset, express my gratitude to the Indian Society of Agricultural Statistics for honouring me by electing me its Sessional President for its 39th Conference. I have been having long association with the activities of the Society in various capacities since its very inception. The founders of the Society, Dr. P. V. Sukhatme, who is in the midst of us today, late Dr. V. G. Panse and several others had a long perspective in its establishment as to how a Society of this kind would help in administering and formulating the agricultural policies, the core of the national economy of the country. Through the conferences, seminars, symposium and periodical publications, the Society had been in the past focussing its attention on the burning problems of Indian agriculture and their possible solutions. In that context, the most serious problem that the country is facing today is the massive unemployment and dire poverty, particularly in the rural area and is looking for its satisfactory solution. It, therefore, seems appropriate to me to choose a topic for my address which has some bearing to rural development planning. Since this is mainly the gathering of experts in statistics and agriculture, I have chosen the topic, "Statistics in Relation to Rural Development Planning."

0.2 Agriculture has been the core of rural economy and will perhaps continue to be in foreseeable future. Immediately after Independence, the country initiated planned development and agriculture received high priority among the programmes of development. It was envisaged that the growth in agriculture would not only improve the national economy in general, but it would bring about an all round balanced development of the rural

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people who largely depend upon agriculture directly or indirectly for their living. No doubt, the country witnessed the green revolution and achieved self-sufficiency in food production. Compound growth rate of foodgrains during the green revolution period (1967-68 to 1980-81) was 2.39 while that of non-foodgrains, it was 2.34 during the same period and for all crops together being 2.37. However, these growth rates were not uniform over all the crops. While growth rate for wheat was highest being 5.65, it was negative (-0.28) for pulses. For other two principal cereal crops, rice and jowar the growth rates were 2.20 and 2.06 respectively. Obviously, differential growth rates for individual crops affected the economy of different regions of the country differently. Regions predominantly cultivating wheat crop, like Punjab, Haryana, Western U. P. etc. derived maximum benefits from the green revolution. Thus, the additional wealth generated through the process of green revolution caused considerable disparity in the standards of living among people of not only different regions but also among people within the region.

0.3 In spite of the green revolution, the urban people were benefited more than the rural people. The agriculture income of the country rose from Rs. 16354 crores in 1970-71 to Rs. 18902 crores in 1980-81, 16.6% rise during ten year's period as against the non-agricultural income from Rs. 17,881 to Rs. 28309 crores, nearly 58.3% rise. During the same period (1971-81), rise in the human population in the rural area was over 20%. This clearly shows that the population depending on agriculture as their main occupation must have become poorer on the average in spite of the green revolution. On the other hand, the population depending on mainly non-agricultural activities, (such population mostly concentrated in urban areas) must have become much richer during the decade. The rise in the urban population during the period, partly due to actual growth rate in the population and partly due to migration from the rural to the urban areas for better employment opportunity was of the order of 50% while rise in the real income in non-agricultural sector which is mostly shared by the urban people was over 58%. This clearly shows that national wealth added during the decade has not been distributed uniformly over the rural and urban people. The urban people got the lion's share.

0.4 A preliminary analysis thus shows that the gap in the income of the population depending mainly on agriculture and those depending on non-agricultural activities has considerably widened over the Plan period of 30 years (1950-80). A similar conclusion has been drawn that only a certain section of the rural population could derive the benefit from the growth in agriculture due to green revolution. The general conjecture that the gap between the rich and the poor has widened, may not be incorrect and this

is more so in the rural area where remunerative employment all the year round is lacking and bulk of the work force remains idle in major part of the year. Such unemployment has been increasing from year to year and there is general trend of movement of the rural population to the urban area in search of jobs, making the cities, more crowded and full of slums.

0.5 The poverty and unemployment are more serious in rural area. It is not that earlier people were not poor in the rural area. Perhaps poverty in most parts of rural India was more serious in pre-independence period than it is today. The main objective of the successive Five Year Plans was to remove the poverty from the Indian masses and make available to them a minimum level of standard of living, the minimum level being defined as above 'Poverty Line'. However, in spite of the general upward growth of national economy, both in agricultural as well as in non-agricultural sectors, the core objective of the development plans, viz. alleviation of the poverty from unprivileged and resourceless class of people, particularly in rural area has been hardly achieved. This fact became clearer during the seventies when inspite of rapid increase in agricultural and industrial productions, the prices of essential commodities rose sharply and purchasing capacity of the common man with regard to even essential items of goods, like food, cloth, etc. considerably reduced. This led to re-thinking in the planning process and resulted in formulation of integrated rural development programme, with the main objective of alleviating the rural poverty.

0.6 The integrated rural development programme is not a new concept. Under the Community Development Programme started almost simultaneously with the beginning of the First Five Year Plan on 2nd October, 1952, the birth anniversary of Mahatma Gandhi a network for basic extension and development services covering nearly all aspects of human development in rural areas was sought to be established. During the Second Five Year Plan, the entire rural area was covered by this programme. The implementation of this programme, no doubt, assisted considerably in generating awareness among the rural communities of the potentials for further development which made subsequently in sixties easier for adoption of new agricultural technologies for increasing farm production. Due to general shortage of food supply, the programme of community development got degenerated in mid sixties and major emphasis was laid on increasing agricultural production.

0.7 Therefore, the programme benefited only those who were better endowed with land resources. It was realised at this stage that some thing different was required to be done to help the marginal farmers, landless labour, the rural unemployed and economically and socially disadvantaged

ed section, of rural society. Specific programmes such as small farmers development agencies (S.F.D.A.) and marginal farmers agriculture development agency (M.F.A.L.) for small and marginal farmers, and landless agricultural labourers were initiated around the early seventies. In the mid-seventies, a special programme for the development of drought prone areas (D.P.A.P.) was introduced and in the late seventies the Desert Development Programme was taken up. The Food for Work Programme (later developed into national rural employment programme) was started in 1977, so as to provide work for rural poor particularly, during the periods of slack employment of the year and at the same time to create durable community assets. However, while the special programmes referred to above operated for a span of years in selected areas and also in several cases simultaneously in the same area and for the same target-groups in a large number of blocks in the country and did contribute towards bringing about an improvement in the economic conditions of the rural poor, none of these programmes covered the whole country. Besides, it was felt that in order to deal with the rural poverty in the country a far more ambitious programme was required. Thus, a new programme known as the Integrated Rural Development Programme was undertaken in 1978-79. The main aim of IRDP is to raise the level of living of the poorest families in the rural areas above the *poverty line* on a lasting basis by giving them income generating assets and access to credit and other necessary inputs. The target groups include small and marginal farmers, agricultural and non-agricultural labourers, rural craftsmen and artisans, Scheduled Castes and Scheduled Tribes and virtually all the families of about five persons with an annual income level of below Rs. 3,500 (this income was considered as at 1978-79 price level to be adequate to provide sufficient calory requirement of the family which was the basis for determining the poverty line). The thrust of the IRDP is on raising incomes and generating opportunities for employment through schemes pertaining to agriculture and ancillary activities, cottage and small scale industries as well as any other viable forms of economic activities, suiting the target group of families. Support to these families in the supply of raw materials, marketing facilities, training, and up-gradation of skills is also envisaged under the programme.

0.8 The Sixth Plan envisaged that over the five years of the Plan, assistance under IRDP would be provided to about 15 million families. By extending the assistance to 600 families in each block in each year of the Sixth Plan, 3,000 families of the target group would be covered in five years. Of these families, about 30 per cent was targetted to be belonging to Scheduled Caste and Scheduled Tribes. Each year, 400 families were expected to be benefited through agriculture and related activities,

about 100 families through village and cottage industries, and the remaining 100 families through the service sector activities. It was also envisaged that at least one-third of the beneficiaries should be women as heads of households. The Sixth Plan provided for five years a financial allocation of Rs. 1,500 crores to be equally shared by the Centre and the States. This amount, which was to be utilised mainly by way of subsidy, was further to be supplemented by credit to an extent of Rs. 3,000 crores to be provided by the cooperative and commercial banks. Thus, the total investment under the programme was expected to be of the order of Rs. 4,500 crores. On an average, each family selected from the target group was to receive Rs. 3,000 in form of subsidy and loan from the banks.

1. Identification of the Target Families

1.0 The basis for selecting the families for benefit schemes is their annual income. To classify the families within a block according to annual income is not an easy task. Although the instructions given to the block operating agencies seem to be simple, actual work involved is complex and time consuming. The field staff employed for this work is neither equipped for undertaking such investigations nor they can be easily trained. Identification errors are, therefore, likely to affect the programme adversely.

1.1 Since 3,000 families in a block were planned to be covered under the programme over a period of five years, a year-wise phasing was advised in regard to its implementation in the selected clusters of geographically contiguous villages. The guidelines recommended a household survey covering all the clusters with the help of prescribed proforma for collecting information and details regarding the size of the family, social status, literacy, occupation, size of land holding, assets, income, and indebtedness, etc. This survey was to be confined to the target group, viz. families having an annual income of less than Rs. 3,500, in addition to cultivators operating less than 5 acres of land. The families below the poverty line so defined were to be classified into various income ranges and the poorest among them were to be selected for providing assistance. The final selection of the poorest families was required to be done in the village assembly/gram sabha to ensure the fairness of the selection. The selection was to be based on comprehensive household survey to ascertain income and economic condition of these families. Thereafter, these families were to be classified on the basis of their annual income, into three income groups viz. (i) Rs. < 1,500, (ii) Rs. 1,500-2,500, and Rs. 2,501-Rs. 3,500. The families falling in the lowest income group were required to be covered first for providing assistance under the IRDP in consultation with the head of the family.

1.2 The appropriate type of economic activity for each identified poor family was to be determined after full consultation of the village assembly/gram sabha and suitable bankable schemes were to be drawn up. Keeping in view the capacity of the identified household to take risk, the existing resource-base and managerial capacity, the invest plan for each identified family had to be sent to the cooperative and commercial banks for loans. It was also considered necessary to ensure that the selected scheme had the backup of the entire chains of production activities required, including the marketing.

1.3 The guidelines provided by the Department of Rural Development had indicated that the District Rural Development Agencies (DRDA's) might draw upon the expertise locally available in the scientific and research institutions in their areas of operation like the research stations of ICAR, Agricultural Universities, Regional Research Laboratories, Krishi Vigyan Kendras, Community Polytechnics, Indian Institute of Technology, etc., in formulating schemes under IRDP. These institutions were supposed to not only provide the suitable and economically viable technologies for the target families, but also to advise from time to time for implementing the programmes successfully.

1.4 The correct selection of the families from the target group is the first step towards achieving the objective of IRDP in alleviating their poverty. A few studies conducted recently in this connection have indicated that in a large number of cases, ineligible families were selected for the benefit of IRDP. In an all India evaluation study of IRDP conducted by the Programme Evaluation Organisation (PEO) of Planning Commission during 1983-84, it was observed that in a total sample of 1,170 beneficiary households, about 26 per cent households had an annual income exceeding Rs. 3,500, at the time of their selection. The study covered 33 districts drawn from sixteen States. Table 1 gives a detailed distribution of the households according to their income. It is noted from Table 1 that only 178 families (15 per cent) belonged to the poorest of the poor group having an annual income of Rs. 1,500 or below. An examination of Table 1 further reveals that nearly 43 per cent of the sample households in Agriculturally less Developed areas were already above the poverty line, i.e., the cut-off point of Rs. 3,500. In fact, the percentage of the households having an annual income of above Rs. 3,500 should normally be much higher if we consider the fact that there is a common tendency among the respondents to under report their income, particularly under the situation that under reporting of income would make them qualified for certain benefits. Economists and Statisticians are fully aware that it is difficult to ascertain the correct income of non-wage earners by

TABLE 1—DISTRIBUTION OF SAMPLE BENEFICIARY HOUSEHOLDS BY THEIR ANNUAL INCOME IN 1980-81

Area category	No. of household reporting	No. of households having an annual income during 1980-81			
		Upto Rs. 1,500	Above Rs. 1,500 upto 2,500	Above Rs. 2,500 upto Rs. 3,500	Above Rs. 3,500
1	2	3	4	5	6
(a) Tribal areas— Madhya Pradesh and Orissa	107	28 (26.17)	52 (48.60)	21 (19.63)	6 (5.61)
(b) Hill areas— J & K, West Bengal, T. Nadu	129	20 (15.50)	42 (32.56)	29 (22.48)	38 (29.46)
(c) Agriculturally developed areas— Andhra Pradesh Haryana, Punjab	227	25 (11.01)	64 (28.30)	80 (35.24)	58 (25.55)
(d) Agriculturally less developed areas—U. P. Maharashtra	103	9 (8.74)	17 (16.50)	33 (32.04)	44 (42.72)
(e) Desert areas— Rajasthan	46	8 (17.39)	7 (15.22)	20 (43.48)	11 (23.91)
(f) Areas with good administrative infrastructure— Gujarat, Kerala Karnataka	304	58 (19.08)	63 (20.72)	84 (27.63)	99 (32.57)
(g) Areas with poor administrative infrastructure—Bihar, Himachal Pradesh, Madhya Pradesh	254	30 (11.80)	96 (37.80)	82 (32.29)	46 (18.11)
Total :	1,170	178 (15.21)	341 (29.15)	349 (29.83)	302 (25.81)

Source : Evaluation Report on Integrated Rural Development Programme, PEO, Planning Commission, Govt. of India, 1985.

putting direct questions at one time. There is no doubt that annual income of a family may be one of the best variables for measuring the level of living and for determining the poverty line, but because of difficulty in accurately measuring this variable, proxy variables for income like, total assets of the family, total number of man-days employment in the year, etc., may perhaps be better way of arriving at the poverty line.

1.5 The PEO study further revealed that the proportion of households with an annual income exceeding Rs. 3,500 was 67 per cent in Thane (Maharashtra), 51 per cent in the districts of Mirzapur (U. P.), Cannanore (Kerala) and 50 per cent in Anantnag (Jammu & Kashmir). It was also noted that in 6 out of 33 districts selected for the study viz., Jammu & Anantnag (Jammu & Kashmir), Ferozepur and Sangrur (Punjab), Jodhpur (Rajasthan) and Rajkot (Gujarat) no sample beneficiary household belonged to the poorest group i.e., with an annual income upto Rs. 1,500. This result further confirms that the selection was mainly guided for meeting the target of covering 600 families on uniform basis in each block per year irrespective of the over-all level and pattern of development of different areas. Several other studies conducted by other institutions at micro level including the one by the National Bank for Agricultural and Rural Development (NABARD) show similar result that substantially high percentage of households normally not eligible for assistance under the IRDP got selected by the IRDP functionaries. Thus, a high percentage of expenditure meant for bringing a certain group of families above the poverty line was wrongly channelised and therefore, the computation of the population crossing the poverty line as a result of IRDP must be affected adversely.

2. Role of IRDP in Raising the Beneficiaries above the Poverty Line

2.0 The major thrust of the IRD Programme is to alleviate rural poverty by strengthening the socio-economic infrastructure and by providing suitable technical and financial aids to the rural poor comprising the small and marginal farmers, landless labourers, rural artisans, etc. The bulk of this category of rural population is below the poverty line and the IRDP aims at raising their annual income at least at the level above the poverty line and sustaining it in future. The success and appropriateness of the IRD Programme may, therefore, be judged whether the beneficiary families have been able to cross the poverty line and whether they have built up necessary capital assets to at least maintain the minimum level of income to remain permanently in future above the poverty line.

The results given in Table 2 are again based on the one all India study conducted by the PEO during 1983-84.

TABLE 2—VIEWS OF SELECTED HOUSEHOLDS ON THE IMPACT OF IRDP ON ASSETS FORMATION

Area category	No. of households reporting	No. of households reporting change in assets formation		
		Increase	Decrease	No change
1	2	3	4	5
(a) Tribal Areas	107	26 (24.30)	0 (0.00)	81 (75.70)
(b) Hill Areas	126	37 (29.37)	0 (0.00)	80 (70.63)
(c) Agriculturally developed areas	224	24 (10.31)	0 (0.00)	200 (89.29)
(d) Agriculturally less developed areas	103	38 (36.89)	0 (0.00)	65 (63.11)
(e) Desert Areas	46	27 (58.70)	0 (0.00)	19 (41.30)
(f) Areas with good administrative infrastructure	304	186 (61.18)	4 (1.32)	114 (37.50)
(g) Areas with poor administrative infrastructure	253	88 (34.63)	1 (0.40)	164 (64.82)
Total :	1,163	426 (36.63)	5 (0.43)	732 (62.94)

N.B: Figures in brackets are percentages.

Source : Evaluation Report on Integrated Rural Development Programme, PEO, Planning Commission, Govt. of India, 1985.

2.1 It may be observed from Table 2 that in about 63 per cent of the households, there was no change in their assets position. This position seems to be worst in agriculturally developed areas, followed by tribal and hill areas. With no change in their assets one should not expect these families developing potentials for sustaining their economic status once IRDP facilities are withdrawn. Obviously, either the assistances were not economically viable for generating the targetted income or the beneficia-

ries were not experienced and trained in utilising the aids granted to them under the IRDP. As such, these families might not have crossed the poverty line, and if they have crossed they might not be able to sustain the temporary gain for a long time.

2.2 The PEO study has also attempted to quantitatively estimate the rise in income of the beneficiaries of IRDP. Table 3(a) below gives the distribution of sample households according to different economic groups at the time of identification and the number of households who crossed the poverty line.

TABLE 3(a)—DISTRIBUTION OF HOUSEHOLDS ACCORDING TO DIFFERENT ECONOMIC GROUP

<i>Income group</i>	<i>No. of sample households in the income group at the time of identification</i>	<i>No. of households crossing the poverty line</i>	<i>No. of households remaining below the poverty line</i>
(i) Upto Rs. 1,500	178	15 (8.43)	163 (91.57)
(ii) Above Rs. 1,500 & Upto Rs. 2,500	341	69 (20.23)	272 (79.77)
(iii) Above Rs. 2,500 & Upto Rs. 3,500	349	345 (98.85)	4 (1.15)
Sub-total (i) to (iii)	868	429 (49.42)	439 (50.58)
Above Rs. 3,500	302	302 (100.00)	Nil
Total :	1,170	731 (62.48)	439 (37.52)

N.B : Figures inside the brackets are percentages.

Source : Evaluation Report on Integrated Rural Development Programme, PEO, Planning Commission, Govt. of India, 1985.

2.3 It may be observed from Table 3(a) that more than 50 per cent of the beneficiaries who were below the poverty line at the time of identification remained so even after receiving the benefits under the IRDP. In

fact, among the poorest (income upto Rs. 1,500) of the poor, hardly 8 per cent were able to cross the poverty line. Even in the group (ii), the position does not seem to be very happy that hardly one fifth of the families raised adequate income from the benefit schemes to cross the poverty line. In addition, it is worthwhile to point that in the above computations, annual debt service obligation of the beneficiaries has not been considered by the PEO. If the debt service obligation is considered, the number of beneficiaries crossing the poverty line, will further get substantially reduced.

2.4 A similar and independent evaluation study on the performance of the IRDP was conducted by the NABARD in 1983-84 covering all the major States. Table 3(b) presents the State-wise findings with regard to households crossing the poverty line.

2.5 It may be observed from Table 3(b) that the proportion of beneficiaries enabled to cross the poverty line, as a result of IRDP assistance showed considerable variation as between different States because of wide variation in the levels of incremental income generated by the investments, as also in the levels of pre-development income. The percentage of beneficiaries with post-development annual incomes exceeding Rs. 3,500 at current prices and hence considered to have crossed the poverty line is 47%, varying from the highest in Punjab (86%) to the lowest in Rajasthan (22%).

2.6 It may be mentioned here that as per the Government of India guidelines, the cut off point for poverty line has been fixed at Rs. 3,500 as annual income from all resources at 1979-80 prices. Needless to say that to get a realistic picture about the impact of investments in terms of the movement of the beneficiaries above the poverty line, the cut off point will have to be refixed taking into account the changes in prices upto 1982-83, the year to which the incomes of the beneficiaries relate. Adjusting price changes on the basis of the All-India Consumer Price Index Numbers for Agricultural Labourers, cut off point works out to Rs. 4,676 at 1982-83 prices as against Rs. 3,500 at 1979-80 prices. The post-development income of individual beneficiaries has been examined in the light of this cut-off point and the revised number of beneficiaries and percentages, crossing the poverty line are given in columns (6) and (7) of Table 3(b), respectively. It may be seen that as a result of this adjustment the number of beneficiaries crossing the poverty line dwindles down to from 563 to 260, or from 47% to 22%. Again, if we take into consideration the annual payment instalments of the loan drawn by these beneficiaries from the

TABLE 3(b)—NUMBER OF BENEFICIARIES CROSSING THE POVERTY LINE

State	No. of eligible beneficiaries	Post-development income : No. of beneficiaries with income		percentage of beneficiaries crossing the poverty line	Beneficiaries with post development income exceeding Rs. 4,676 (at 1982-83 prices).	
		< Rs. 3,500	> Rs. 3,500		No.	%
1	2	3	4	5	6	7
A.P.	93	69	24	25.81	10	10.75
Assam	58	40	18	31.03	8	13.79
Bihar	100	69	31	31.00	18	18.00
Gujarat	53	26	27	50.94	14	26.42
Haryana	88	21	67	76.14	36	40.90
Kerala	102	62	40	39.22	13	12.75
Karnataka	99	67	32	32.32	15	15.15
M.P.	89	45	44	49.22	20	22.47
Maharashtra	86	30	56	65.12	36	41.86
Orissa	63	30	33	52.38	16	25.40
Punjab	22	3	19	86.36	13	59.09
Rajasthan	76	59	17	22.37	4	5.26
Tamil Nadu	89	65	24	26.97	8	8.99
U.P.	119	33	86	72.27	49	41.18
West Bengal	58	13	45	77.59	Nil	Nil
Total :	1,195	632	563	47.11	260	21.75

Source : Report on Study of Implementation of Integrated Rural Development Programme, NABARD, 1985.

banks, the percentages of beneficiaries crossing the poverty line may further go down.

2.7 From the foregoing observations, which are based on all-India evaluation studies conducted independently, it seems the IRDP has not so far fulfilled its objective of alleviating the poverty to the extent desired,

of the rural poor families covered under the programme. Although, according to computation based on certain assumptions, a certain percentage of beneficiaries have sufficiently raised their annual income and crossed the poverty line, it is doubtful whether they would be able to sustain that level of income to remain above the poverty line in future.

3. System Approach

3.0 There is a need for a comprehensive review of the causes for rural poverty and then to look for the remedial measures. A chronic disease of rural poverty cannot be effectively treated unless the full diagnosis of the patient is made. When we talk of rural development, we implicitly mean the socio-economic development of the people who reside in the rural area. The Community Development Programme initiated in fifties aimed at such development, but it got degenerated subsequently, and ultimately transformed to a bunch of schemes for improving agricultural productivity. Considering in this light, the content of the Integrated Rural Development Programme is again a bunch of scheme for alleviating the rural poverty.

3.1 Table 4 on page 14 presents sector-wise distribution of the assisted beneficiaries in the areas selected by the PEO for evaluation studies. It may be seen from the table that over 80 per cent schemes chosen by the beneficiaries related to primary sector (agriculture and allied activities). It is only in the tribal areas that non-primary sector activities were preferred by the beneficiaries although there also primary sector activities were predominantly chosen by over two-thirds of the beneficiaries. The reason for selecting the primary sector schemes by the beneficiaries is obvious. The bulk of the rural poor belongs to the groups of small and marginal farmers and the landless labour and they are more confident to improve their income through agriculture sector activities. It is generally considered that animal husbandary schemes, generate more employment and therefore, are more remunerative. This may be true to some extent. But animal husbandary schemes need system approach. Persons engaged in animal husbandary occupations like dairying, poultry, etc. should gain expertise through training and experiences. There must be well knit market organisations for supply of necessary inputs and purchase of outputs on reasonable prices. It must be supported by efficient and timely veterinary services and medicines. Since the animal products are perishable goods, the time interval in the movement of the produce from the primary producers to the actual consumers should be minimum. This may be possible only in the area with good communication and transport facilities.

For this purpose, an economically viable organisation can be developed

TABLE 4—SECTOR-WISE DISTRIBUTION OF THE FAMILIES ASSISTED DURING 1980-81 TO 1982-83

Area/Category	Number of families assisted under			Total
	Primary sector	Secondary sector	Tertiary sector	
<i>I</i>	2	3	4	5
(a) Tribal	45553 (67.15)	10898 (16.06)	11393 (16.79)	67842
(b) Hill areas	166843 (93.39)	6595 (3.69)	5206 (2.92)	178644
(c) Agriculturally developed areas	111311 (80.82)	3559 (2.58)	22858 (16.60)	137728
(d) Agriculturally less developed areas	108668 (76.42)	23108 (16.25)	10427 (7.33)	142203
(e) Desert areas	16749 (78.41)	1326 (6.21)	3285 (15.38)	21360
(f) Areas with good administrative infrastructure	129172 (79.20)	14051 (8.6)	19883 (12.19)	163106
(g) Areas with poor administrative infrastructure	65244 (76.17)	6475 (6.39)	14934 (17.44)	85653
Total :	643540 (80.79)	65012 (8.16)	87984 (18.04)	796536

N.B. : Figures inside brackets are percentages.

Source : Evaluation Report on Integrated Rural Development Programme, PEO, Planning Commission, Govt. of India, 1985.

only if sizeable beneficiaries of such schemes are brought together in a cooperative set up which becomes responsible for supply of necessary inputs, and marketing of the produce. In fact, such cooperative organisation may be made economically more stronger, if it is extended to cover even non-beneficiary producers of such commodities. It is, thus, obvious that the success of the IRDP in alleviating the rural poverty through the agricultural schemes will largely depend on the integrated area development by providing necessary financial and technical aids to the disadvantaged groups of rural population. Without a detailed area development plan, the target group schemes are likely to produce much less than the desired results as reported in several recent studies. No specific problem is envis-

aged in the integration of the benefit schemes for the target group of families with the area development programmes. Given proper conceptualisation, planning at different levels and adequate organisational structure, schemes for rural poor could be meaningfully linked with the area development programmes. No agricultural scheme may have lasting impact in eradication of rural poverty without the people's participation. The people's participation implies the formulation of area development programmes, consistent with the local needs, resources and development potential.

3.2 In addition to area development plans, the schemes for individual beneficiaries should be thoroughly examined taking into consideration the technological coefficient, skills and resources of the family, training provision and service support including supply of inputs and disposal of outputs. Such individual family plans for the target group will need the support of professionals, which is at present lacking in the formulation of IRDP. According to the evaluation study made by the P.E.O. one of the reasons for poor performance of the IRDP is the incompetence of the functionaries to handle the job assigned to them.

4. Agricultural Development and Poverty

4.0 Agriculture and allied activities will continue to be dominant profession for the bulk of the rural population for a long time to come. A balanced growth of agriculture along with the development of rural communication and transport is bound to absorb a large percentage of surplus labour from rural area thereby improving the income of the rural poor. The parts of the country, where the agricultural production has grown faster than the growth of the population, the incidence of unemployment in the rural area has been reduced considerably and the income of even the marginal and landless labour has gone up.

4.1 The first step in the direction of the balanced growth of agriculture in a sustained way will be to educate the rural people in general and, the farming community in particular in scientific utilisation of natural resources without disturbing the balance in nature. The most valuable gifts of the nature to this country are the fertile soils and continuous supply of water through annual rainfalls and glaciers originating from high ranges of Himalaya. Coupled with the plenty of sunshine all the year round, it makes it ideal for the growth of plantation involving rich agriculture. In fact, it was this factor which, in the past before the industrial revolution of the west, had signified India as one of the richest countries of the world, commonly known as 'Golden Bird'. During the recent past due to

unscientific use of land, deforestation of large areas for cultivation, mismanagement of water resources, fragmentation of holdings, etc. the fertility of the land had considerably gone down and India is at present one amongst the countries of the world producing lowest crop yields per unit of area. The following figures for the two most populated countries of the world provide an idea for the production potentials :

	<i>Average yield per hectare (in kg.) (1983)</i>	
	<i>China</i>	<i>India</i>
Rice (Paddy)	5067	2185
Wheat	2826	1816
Maize	3223	1346

Source : FAO, Production Year Book, 1983.

4.2 If India can achieve at least the same level of productivity as China has got today, the country can produce the agricultural requirement in half of its area under cultivation at present and the land released thus can be put to other useful uses. In fact, in China the net cultivated area is less than half of that in India, but it produces much more food grains than what we produce.

4.3 In the past, major contribution towards improving agricultural production came from an expansion in the area under different crops. Scope for further improvement in production in this manner is exceedingly limited since the only major source of land will be the area brought under multiple cropping. In fact, expansion of area under cultivation by bringing marginal village lands and forests to plough has done lasting harm to Indian economy and has caused permanent damage to the natural environment. To revert the process all the marginal lands or forest lands brought under cultivation must be put to forests or tree crops commonly known as social forestry. To implement such programmes scientific management of land and water resources, and development of suitable cropping pattern has become an imperative need, and this can be done only if there is cooperation on the part of the community in a village or watershed area. So far the progress made in improving crop production and productivity has largely resulted from individual farmers aided by such help as Government has been able to render from time to time rather than from group initiative. The emerging agricultural technology, like scientific land use, conservation of soil and water, integrated pest management, diversification of agriculture from traditional cultivation to labour intensive

activities such as dairying, poultry, vegetable cultivation, and improved marketing system would demand for effective adoption of collective endeavour on the part of the rural people in a compact area or in a watershed. In other words, the rural poverty should be tackled through the institutional mechanism by involving the community as a whole rather than selected individuals. On account of such conceptual flaws in the anti-poverty strategy, it has failed as it has been brought out earlier. According to it, the identified poor can be economically uplifted in isolation from the rest of the villagers. The village should, however, be treated as an organic whole, and whatever happens to the rest of the villagers is bound to affect the poor for good as well as for bad. Indeed, the poor would not be poor, if the village as a whole had become prosperous. The proportion of the poor is the smallest in Punjab because the villages became prosperous due to high growth in agricultural production. Anybody's poverty can, no doubt, be temporarily relieved by giving him a loan and a dole in the form of subsidy as has been noted in the IRDP. But for permanent removal of poverty a continuing remunerative job has to be found. The main thrust of the IRDP should, therefore, be towards creating more jobs on a continuing basis. Creation of such jobs, however, is dependent on finding buyers of the goods and services produced by the newly employed. It is in this respect that the so called strategy of direct attack on poverty has failed. Creation of jobs through dairy is one of the principal components of rural development strategy. But there are in villages very few buyers of milk produced by the beneficiaries of loans and subsidy. Also they are not provided with any marketing links with the cities, so these tiny enterprises have just fizzled out for lack of demand.

5. Water Management

5.0 In this context of rural development, a reference to water resources and its utilisation may be worthwhile. As in the past, supply of water will continue to be the key to the progress of Indian agriculture. The conservation and scientific use of water is not only essential for crop production, but it is equally important for industries, human inhabitation, animal health and even for increasing and improving the quality of forests. Fortunately, as mentioned earlier, India is placed, so far as the availability of water is concerned, in an enviable position. According to the Meteorological Department of the Government of India, the country receives on an average, an annual rainfall of about 370 million hectare meter (m ha m). Out of this amount 80 m ha m seeps into the soil and another 170 m ha m flows through the rivers. The remaining 120 m ha m evaporates. Out of the total river flow, only about 59.7 m ha m (35%) can be utilised for irrigation and other purposes due to limitations imposed by

topography, climate, and soil conditions. Of this, about 32 m ha m is, at present, being utilised and the rest 27.7 m ha m is still available for future utilisation. Out of 80 m ha m that seeps into the soil, only 26.75 m ha m is available for economic utilisation. Of this, 11.25 m ha m has so far been utilised and the remaining 15.5 m ha m of ground water is available for further development. Thus, according to the present technique of transportation of water, the unutilised quantity of water due to river flow as well as under ground water comes to be about 43.2 m ha m.

5.1 It is thus observed that only a small fraction of total run-off water is economically exploited. It is wondered whether it is possible to modify our strategy of conservation and utilisation of water resources. Since water happens to be one of the most essential element for human life as well as for plants and animals, the entire community should be involved in the conservation of this essential commodity. This may need micro planning and employment of local resources. This may not be a new idea and have been conventionally practiced in the country for a long time for different reasons. The device of storing water and utilising it for successive crops both during rainy and post rainy seasons was in practice in most of semi-arid regions, particularly in the Deccan Plateau. In fact, in India, the practice of constructing local water resources in the shape of tanks/ponds was given religious sanctity and there may be hardly a village without a tank or its remnants. The purpose of constructing such tanks was to meet the water needs of the local inhabitants and, at times the surplus water was used for irrigating the crops. This method of water conservation needs to be rationalised and developed on scientific lines.

5.2 For utilisation of a substantial part of the run-off, system of its harvest and storage in situ would have to be scientifically planned. For this purpose, the country may be divided into a large number of homogeneous and contiguous units whose size should be limited to allow to proper control and management of water resources within a unit. Accordingly, one village if it is large, or a group of villages may be taken as the unit for water management. The scientific planning would include survey of these units with respect to total rainfall and its distribution over the years, the topography of the land, soil parameters as well as the total run-off which could be economically stored. A suitable design of the reservoirs would then be worked out along with their number and size in a given area. This has to be community programme and the water has to be owned and managed by the entire village population on the pattern of the Operational Research Project on Watershed Development undertaken by Indian Council of Agricultural Research in Sukhomajri in Punjab. However, in the areas where holding size is large and the land

is consolidated, even the individual farmer can develop his own water reservoir.

5.3 The proposed system has a large number of advantages. The main advantage of the system is that since local people are involved in the programme, it would be easily accepted by the village community. It gives control over the water management of the village organisation like Panchayat. Major component of the investment will be human labour which is available in plenty in the rural areas. Its operation and maintenance, etc. involves almost no capital. Since the system utilises surface water there is no danger of decline in the underground water table through recharge. Instead, the underground water table may even rise in the area because of seepage and it may be further used through the construction of tubewells.

Besides, the direct benefit of the system that the water is available locally, it would be of considerable help in conserving the soil fertility of the area as the catchment of such reservoir will mostly be the cultivated area around the reservoir, the water from which would be recycled back to the same land. Whatever soil fertility goes to the reservoir through run-off can be ploughed back to the fields through desilting of the reservoir during the dry season.

5.4 The destruction of the forest wealth of the country for reclaiming area for occupation and cultivation and for obtaining fuel for domestic purposes as well as 'Jhoom' cultivation practiced by the tribal people in hilly areas has resulted in great soil erosion and silting of the river bed which constitutes natural drainage system in the country. The silting is also caused by the run-off which carries with it the top soil of the cultivated land. If the system of harvesting of rain water *in situ* is implemented, it will not only reduce the amount of run-off, but also decrease the silting rate of the river-bed which in turn would help in reducing the incidence of floods on both these counts. In several areas, one of the main factors responsible for the rural poverty is the frequent occurrence of floods.

5.5 Such a programme for the eradication of rural poverty should receive the top priority. It will generate not only the employment in the rural area, but it also help in creation of permanent assets for the village community for the development of a prosperous agriculture. The construction of rural water reservoirs and plantation of social forestry should go side by side since such programmes are complementary to each other. The scope of the National Rural Employment Programme may be expanded to cover such projects. The new policy of the Government of India recently announced that a part of the surplus foodgrains available with the Government should be granted as an aid for implementing the projects under IRDP

may encourage the functionaries to initiate reforestation programme. The scheme of social forestry along with the water conservation project as discussed above may be taken in all the villages chosen for IRDP. Food under the NREP can help to bridge the three to eight years gestation period during which trees planted on the lands controlled by the village panchayats and forest area by landless labourers, small and marginal farmer, and tribals may grow to maturity.

6. Land Holding and Size of Poverty

6.0 No doubt, agriculture and allied sectors like animal husbandary, fishery and forestry if planned scientifically by optimising the use of land and water resources has still tremendous capacity to absorb a large unemployed or underemployed rural population and thereby alleviating the rural poverty. The question is whether the pressure of growing population (increase at the rate of over two per cent per annum) can be borne by the land alone, particularly in view of the fact that nearly three-fourths of farms in the country are marginal or small. Besides the landless labour, it is this category of rural community which constitutes bulk of the rural poor.

6.1 In the Sixth Five Year Plan, it is envisaged that over the five year's period, the plan assistance under the IRDP would be provided to 15 million families to raise them above the poverty line. According to the evaluation study conducted by NABARD, covering the period 1980-81 to 83-84, the distribution of IRDP beneficiaries by their occupational status is as follows :

<i>Occupational status</i>	<i>Percentage</i>
1. Small farmers	20.3
2. Marginal farmers	30.0
3. Land less agricultural labourers	32.4
4. Rural artisans	6.4
5. Others	10.9
Total	<u>100.00</u>

It may, therefore, be safely concluded that out of 15 million families likely to be benefited by the various benefit schemes during the Sixth Five Year Plan period, about 50% or 7.5 million are likely to belong to small and marginal farmers category and nearly one third would be falling in the category of landless agricultural labourers.

6.2 According to guidelines provided by the Department of Rural Development, Government of India, about 60% of the target families were to be covered by benefit schemes under primary sector, comprising agriculture, animal husbandry, and subsidiary, 20% by secondary sector schemes and 20% by tertiary schemes. Sectorwise distribution (in per cent) of the assisted beneficiary families and those crossed the poverty line during 1980-81 to 1982-83 is as follows :

	<i>Primary sector</i>	<i>Secondary sector</i>	<i>Tertiary sector</i>
Assisted beneficiary families	80.80	8.16	11.04
Families crossing the poverty line (at current prices)	44.8	53.7	67.5

If it is assumed that most of the beneficiary families belonging to occupational categories of small and marginal farmers, and landless labourers constituting 83% of the beneficiaries must have chosen the benefit schemes in the primary sectors and if it is also assumed that IRD Programme continues in the same pattern during the remaining period of the Sixth Five Year Plan, the number of beneficiaries of these occupational categories (12.5 million) crossing the poverty line, (Rs. 3,500.00 per family per annum at current prices) might be of the order of 5.6 million. If the changes in the prices of consumer commodities over the base year 1977-78 are taken into consideration number of the beneficiaries of this occupational category crossing the poverty line may reduce to 2.7 million. The latter figure of 2.7 million seems to be more realistic since after the adjustment for price rise during the period, the cut-off point income of Rs. 3,500 per family per annum becomes equivalent to Rs. 4,676 at the 1982-83 prices. Unfortunately, the PEO study did not make any adjustment for price rise, and therefore, thus conclusion that 49.4% beneficiaries had crossed the poverty line, does not seem to be correct. After price adjustment, the percentage of beneficiaries crossing the poverty line may reduce to not more than 24%.

6.3 It is generally accepted that the bulk of the rural poor comes from the occupational categories of marginal and small farmers and the landless labourers. According to the agricultural census, majority of the agricultural holdings are either marginal or small and their number continues to increase from year to year. The distribution of the number of holdings by major size groups in 1970-71, 1976-77 and 1980-81 and the percentage variation thereof are given in Table 5.

TABLE 5—NUMBER OF HOLDINGS ACCORDING TO MAJOR SIZE GROUPS

Size groups	No. of operational holdings (in million)			Percentage variation in	
	1970-71	1976-77	1980-81	1976-77 over 1970-71	1980-81 over 1976-77
1	2	3	4	5	6
Marginal (less than 1 ha)	36.20	44.52	50.52	23.0	13.5
Small (1.0 to 2.0 ha)	13.43	14.73	16.08	9.6	9.2
Semi-medium (2.0 to 4.0 ha)	10.68	11.67	12.51	9.2	7.2
Medium (4.0 to 10.0 ha)	7.93	8.21	8.09	3.5	-1.5
Large (10.0 ha and above)	2.77	2.44	2.15	-11.8	-11.7
Total	71.01	81.57	89.35	14.9	9.5

Source : Agricultural Census, Ministry of Agriculture and Rural Development, 1981.

It may be seen from Table 5 that the number of holdings in the lowest size group, namely, the marginal holdings of size less than 1 hectare accounted for more than half the total number of holdings in the country in all the three years, 1970-71, 1976-77 and 1980-81. Indeed, the marginal holdings which accounted for 51 per cent of all holdings in 1970-71 had increased to 56 per cent in 1980-81. The number of holdings in this category had increased from 36.20 million in 1970-71 to 50.52 million in 1980-81, i.e., an increase of 14.32 million in a period of 10 years, at the rate of 1.43 million per year. In fact, the number of marginal holdings had increased by 40 per cent, as against the over all increase of 26 per cent of all the holdings.

6.4 The number of small holdings increased from 13.43 million in 1970-71 to 16.08 million 1980-81, i.e. an increase by 28 per cent in a period of 10 years.

6.5 If the marginal and small farmers who are classified among the rural poor are considered together, the number of holdings increased from 49.63 million in 1970-71 to 66.60 million in 1980-81, i.e. an increase by 34 per cent in ten year's period. In other words, about 1.6 million families per year are added to the group classified as the rural poor.

6.6 Another important category among the rural poor is the landless agricultural labourers. The number of landless agricultural labourers increased from 47.5 million in 1971 to 55.5 million in 1981, i.e. an increase by 8.00 million in ten year's period. If it is assumed that there would be at least two labourers per landless agricultural labour family, the total number of such families can be estimated to be 27.75 million in 1981 and an annual increase to this group would be of the order of 0.4 million.

Besides rural artisans, the bulk of the rural poor come from the families of small and marginal farmers and landless labourers. Thus, the number of poor families of such categories who directly depend on agriculture was 94.35 million in 1980-81. At present, no information seems to be available on the number of families below the poverty line according to occupational categories. It may, however, be safely assumed that nearly all the families categorised as marginal farmers and landless labourers should normally be below the poverty line. It is this group, besides a majority of the small farmers and rural artisans who have to be assisted for creation of necessary permanent assets which may produce sustainable income to cross the poverty line. Alternatively, such poor families should be provided regular employment giving them adequate income to maintain them above the poverty line.

6.7 It has been seen earlier that because of the benefit schemes initiated under the IRD Programme in the Sixth Plan not more than 3 million families chosen from the groups of marginal and small farmers and landless labourers might cross the poverty line.

During the same period of five years, there will be an increase of about 10 million families in the groups of small and marginal farmers and landless labourers. Thus, instead of reduction in the number of rural poor, it is feared that incidence of poverty in the rural areas may increase further. The reliability of the information recently brought out by the Planning Commission that the percentage of population below the poverty line has gone down from 51.2 in 1977-78 to 40.4 in 1983-84 in rural areas seems to be questionable. Incidentally, if it is assumed that all the beneficiaries chosen in the Sixth Plan for the IRDP Benefit Schemes have crossed the poverty line, the percentage of population below the poverty line reduces approximately to the figures of 40.4 computed recently by the Planning Commission. However, all the evidences brought out from the evaluation studies conducted so far show that only a small fraction of the beneficiaries of 6th plan might have crossed the poverty line on sustainable scale. There is a need in not only having a comprehensive review of the suitability and implementation of on going benefit schemes, but also in examining afresh, the entire strategy of eradication of rural poverty and the method of computation of proportion of population above the poverty line. Since

the main thrust of the IRD Programme and Complementary Schemes like NREP, is to eradicate the rural poverty, it may not be out of way to make some observations on the concept of poverty and methodology adopted for its evaluation.

7. Concept and Evaluation of Poverty

7.0 The approach of selection of beneficiaries in the Sixth Plan is on household basis whereas the incidence of the poverty is estimated on individual level. Although conceptually poverty may be a function of several variables, like food intake, housing condition, hygiene and medical aids, etc., in the absence of adequate and reliable data for studying these parameters, and for simplicity, the nutrition (calory intake) is taken as the main criterion for determination of poverty ratio not only in India but also in most of the developed as well as the developing countries.

7.1 The Planning Commission defines a poverty line separately for rural and urban areas. The minimum calorie requirement as recommended by the Indian Council of Medical Research (ICMR) has been given as 2400 and 2100 calories per capita per day in rural and urban areas, respectively.

7.2 The monetary cut-offs corresponding to the above calorie requirements have been obtained using household consumer expenditure data of National Sample Survey Organisation (NSSO) worked as Rs. 65 and Rs. 75 per capita per month for rural and urban areas respectively on 1977-78 prices, and corresponding figures for 1979-80 are Rs. 76 for rural area and Rs. 88 for urban area; all individuals who have per capita per month household expenditure below the respective figures classified as 'poor'. Making use of these cut-off points and household consumer expenditure distribution, the percentage of people below the cut-off have been worked out separately for rural and urban areas.

7.3 The accuracy of the estimate of the percentage of the population below the poverty line will basically depend on the accuracy of the estimate of the cut-off point considered either in terms of calorie intake or in terms of consumer expenditure. The National Sample Survey data on consumer expenditure are used for this purpose. The first question, from the statistical point of view, is whether the sample size as adopted by the NSSO in consumer expenditure survey is adequate to provide reliable estimates of cut-off points for individual States. Secondly, it is understood that for estimating the requirements norms of calorie intake, appropriate weights based on demographic characteristics as obtained from the population census are used, but for estimating the actual consumption based

on the NSSO survey data, no such weights are used. Thirdly, the actual food consumption data in physical units as obtained from the NSSO surveys are converted into monetary unit as expenditure on food and then the expenditure is reconverted to calorie units. Will it not be better to convert the food consumption data directly to calorie units, particularly for the rural areas where the respondents are expected to report the food expenditure data in physical units of quantity and kinds. Fourthly, in estimating the poverty line ratio, it is implicitly assumed that the distribution of food consumption expenditure follows a normal distribution which may not be always true. Considering the demographic and socio-economic characteristics of the population, the distribution of food consumption expenditure will necessarily be multi-modal and highly skewed having as many modes as the number of groups in which the population demographically and socio-economically can be classified.

7.4 There is another statistical problem needing empirical investigation. Normally, the actual food consumption rate and the required rate will be correlated. Therefore, in developing the approach to estimate the ratio of population undernourished, the concept of a bivariate frequency distribution $f(x,y)$ needs be introduced, where x and y stand for actual intake and prescribed requirement, respectively. Then, the proportion, u of the population undernourished may be expressed as

$$u = \iint_{x < y} f(x, y) dx dy$$

By suitably specifying $f(x, y)$ and the value of y , u may be computed. Sukhatme, while developing the method for estimating the proportion of population under-nourished made use of such distribution. He, however, assumed that x and y are normally and independently distributed while computing the numerical values. This assumption may not be always true. He also used $C - 3\sigma_y$ as the limiting value of y , where C corresponds to the requirement of the 'reference person' and σ_y is the standard deviation of y . Considering the importance of the subject of determining the proportion of population below the poverty line for taking various national policy decisions, it seems essential to undertake some methodological investigations on these issues to arrive at a much more reliable estimate of the poverty ratio.

8. Maharashtra and IRDP

8.0 Among the major States of Indian Union, Maharashtra is the most urbanised State. According to the population census of 1980-81, the urban population in the State accounted for 35.03% as against 23.70%

for the country as a whole. Again, with respect to the percentage of literacy of the population (47.18%) it ranks second, next to the Kerala State (70.42%). With respect to net sown acreage, the State accounts for 12.8% of the total sown area in the country and it ranks second, next to Madhya Pradesh. The ratio of the net sown area to the rural population is also favourable. In 1980-81 sown area per capita of the rural population was 0.45 ha' as against 0.20 ha for the country. Basic infrastructure for development is also favourable to the State. It is industrially most advanced and is considered one of the best administered States in the Indian Union. The State has established four farm universities as against a total of 18 farm universities in the remaining parts of the country.

8.1 The basic objective of establishing these farm universities has been to accelerate the growth of rural economy through the innovation of improved production and extension technologies and training of farm personnel including farmers in the method of new and better agricultural technique. On examination of the growth of rural economy in general, and that of agriculture in particular in the State during the period of 1960-61 to 1980-81, it seems that the farm universities have not made any significant impact.

8.2 Table 6 describes the growth of agriculture in the State during the period 1960-61 to 1980-81.

Table 6 clearly brings out that during the twenty years' period (1960-61 to 1980-81) the increase in agricultural production (all crops) had been less than 31 per cent but during the same period the population rose from 39.6 million in 1961 to 62.8 million in 1981, a rise by over 58 per cent. Even if we consider the rural population alone which largely depends on agriculture for their livelihood the rise was from 28.4 million in 1961 to 40.2 million in 1981, an increase by 43.7 per cent. This simple analysis brings out that this period must have witnessed a high incidence in rural poverty in the state, although certain advantageous sections of the farming community might have improved their economy by cultivating certain remunerative crops which attained high growth in productivity during this period. With regard to the average yield (y) there seems to be hardly any improvement during this period. This shows that the farm universities and research stations in the state have failed in playing their roles.

8.3 The percentage of rural poor as estimated by the Planning Commission also confirms that Maharashtra is one of the few States with large poverty in rural area. Table 7 gives percentage of population below the

TABLE 6—INDEX NUMBER OF PRODUCTION (P) AND AVERAGE YIELD (Y) OF AGRICULTURAL
COMMODITIES IN MAHARASHTRA

(Base 1960-61)

Sr. No.	Commodity	1960-61		1965-66		1970-71		1975-76		1980-81	
		P	Y	P	Y	P	Y	P	Y	P	Y
1	2	3	4	5	6	7	8	9	10	11	12
1.	Cereals	100	100	60.8	61.5	77.5	79.0	127.2	120.7	139.8	128.7
2.	Pulses	100	100	64.4	64.3	70.0	60.8	116.0	91.6	83.6	68.3
3.	Foodgrains	100	100	61.5	62.0	74.7	75.2	124.5	115.2	127.9	115.7
4.	Non-Foodgrains	100	100	77.9	74.3	88.6	80.1	118.8	92.7	134.8	96.5
5.	All Commodities	100	100	68.3	67.2	80.5	77.3	122.1	104.7	130.8	106.2

poverty line by major States separately for rural and urban areas in 1972-73 and 1977-78.

It may be seen from Table 7 that the percentage of population below the poverty line in the rural area in Maharashtra in 1977-78 was nearly 55 as against about 51, in the country as a whole. Surprisingly, in spite of all the developmental activities in the rural area, there was no reduction in the poverty during the period, 1972-73 to 1977-78, rather there was slight rise, although in the urban area, there has been perceptible reduction in the poverty in the State during this period.

8.4 Likewise other States, Maharashtra State has also initiated IRDP during the Sixth Five Year Plan as an important programme for the alleviation of rural poverty. It has been seen from the evaluation studies conducted by several organizations that the impact of IRDP in reducing the poverty has so far been limited. The number of families who have joined the group below the poverty line has been larger than the number that crossed the poverty line. In Maharashtra, according to the Department of Rural Development, Government of India, the total number of families likely to be benefited by the benefit schemes under the IRDP in the Sixth Five Year Plan is 962 thousands. The evaluation study of the Programme Evaluation Organisation of the Planning Commission covering the period (1980-81—1982-83) has shown that in Maharashtra nearly 70 per cent sampled beneficiaries crossed the poverty line on the current price basis. If the income of the beneficiaries is adjusted for the price inflation during this period, the percentage of beneficiaries crossing the poverty line may not be more than 35 per cent. Since there has been no change in method of implementation or in the contents of the IRDP during the remaining period of the Plan, it may be safely assumed that the number of the beneficiaries selected in the Sixth Plan, who might have moved above the poverty line should be of the order of 337 thousands.

8.5 An indicator of the size of the poverty in the rural area of Maharashtra, as in other parts of the country, may be obtained by the number of marginal and small farms and landless agricultural labourers. Table 8 gives the distribution of holdings according to major categories and the number of agricultural labourers in the rural area.

The number of marginal and small farmers taken together, who are entitled to the benefit schemes under the IRDP has increased from 2120 thousands in 1970-71 to 3582 thousands in 1980-81, i.e., an increase by about 69.00 per cent in ten years' period. On an average, 146 thousands farmer's families join the group classified as 'poor' every year.

Again, the number of landless agricultural labourers in the rural area

TABLE 7—PERCENTAGE OF POPULATION BELOW THE POVERTY LINE BY STATES SEPARATELY FOR RURAL AND URBAN AREAS IN 1972-73 AND 1977-78

Sr. No.	State	1972-73			1977-78		
		R	U	C	R	U	C
1	2	3	4	5	6	7	8
1.	Andhra Pradesh	57.67	43.75	54.94	43.89	35.68	42.18
2.	Assam	48.24	33.78	46.95	52.65	37.37	51.10
3.	Bihar	55.82	43.45	54.54	58.91	46.07	57.49
4.	Gujarat	43.88	34.03	41.08	43.20	29.02	39.04
5.	Haryana	21.52	29.94	23.10	23.25	31.74	24.84
6.	Karnataka	52.33	45.79	50.54	49.88	43.97	48.34
7.	Kerala	57.76	52.69	56.91	46.00	51.44	46.95
8.	Madhya Pradesh	61.35	44.83	58.60	59.82	48.09	57.73
9.	Maharashtra	53.94	34.32	47.72	54.85	31.62	47.71
10.	Orissa	71.01	43.38	68.60	68.97	42.19	66.40
11.	Punjab	21.47	21.84	21.51	11.87	24.66	15.13
12.	Rajasthan	47.47	39.26	46.01	33.87	33.80	33.76
13.	Tamil Nadu	62.98	52.22	59.66	55.68	44.79	52.12
14.	Uttar Pradesh	52.96	51.59	52.77	50.23	49.24	50.00
15.	West Bengal	64.00	35.86	56.93	58.94	34.71	52.54
	All India	54.09	41.22	51.49	50.82	38.19	48.13

N.B. : R = Rural, U = Urban, and C = Combined.
Source : Planning Commission, 1983.

TABLE 8—DISTRIBUTION OF THE NUMBER OF OPERATIONAL HOLDINGS IN DIFFERENT CATEGORIES IN MAHARASHTRA

Sr. No.	Category	Number of holdings (thousands in)		Percentage Variation
		1970-71	1980-81	
1.	Marginal holdings (below 4 ha)	1242	2024	63.0
2.	Small holdings (1.0-2.0 ha)	878	1558	77.5
3.	Semi-medium holdings (2.0-4.0 ha)	1087	1653	52.1
4.	Medium holdings (4.0-10.0ha)	1229	1346	9.5
5.	Large holdings (10.0 ha and above)	514	301	-41.4
		4950	6882	39.08
6.	Agricultural labourers	5110	6471	27.0

has increased from 5110 thousands in 1970-71 to 6471 thousands in 1980-81, i.e. an increase by 1361 thousands in a period of ten years. Thus, if it is assumed that there would be at least two labourers per landless agricultural labour family, there might be at least 3235 thousands families in 1981 who should be entitled for the IRDP benefit schemes and their number would be increasing at the rate of 68 thousands families per year.

According to the evaluation report of NABARD, the distribution of beneficiaries by their occupational status for the two districts, Pune and Sholapur which were chosen for the study indicated that marginal and small farmers and landless agricultural labourers together constituted 50.8 per cent of the total beneficiaries, the remaining 49.2 per cent being rural artisans and others. It may, therefore, be estimated that out of the total beneficiaries of 962 thousands selected in the State during the Sixth Five Year Plan, less than 500 thousands might be belonging to occupational groups of marginal and small farmers and landless labourers. It has been seen in the preceding paragraph that nearly 146 thousands marginal and small farmers and 68 thousands landless workers' families join each year the group of the rural poor in the State. In Five Years' period of the Sixth Plan, nearly 1070 thousands families belonging to occupational groups of marginal and small farmers and landless labourers must have joined the group of rural poor who are supposed to be raised above the poverty line by the benefit schemes of IRDP. Thus the number of families raised above the poverty line is not only nullified by the number of families added to the already existing number of the rural

poor, but the poverty is further extended to a larger group due to expansion in the number of marginal and small farms and landless agricultural labourers' families.

8.6 From the above analysis it seems that the benefit schemes initiated under IRDP have made little impact on the alleviation of rural poverty in the State. The reason for poor performance of IRDP is obvious. There is a heavy pressure of the population on the land. The agriculture must grow vertically to generate more remunerative jobs. At present, the intensity of cropping in Maharashtra State is 109.1 per cent as against 122.2 per cent in the country. It implies that in most of the areas, a single crop cultivation is practiced and as a result cultivators and agricultural labourers remain idle in a major part of the year. It is not that the State does not have potential for improving the intensity of cropping. In a large part of the State, annual rainfall is more than average and if the rain water is scientifically conserved through local works of constructing small water reservoirs by employing the unemployed rural labours, it may change the whole cropping system for improved agricultural productivity. Table 9 gives the distribution area in the State according to annual rainfall pattern.

It may be noted that the medium rainfall region of the State, which accounts for the largest reporting as well as sown area has the lowest percentage of irrigated area as well as the lowest cropping intensity. It is this region where water management should be relatively simple.

8.7 Wealth of the rural area can be increased tremendously, by improving the land productivity, either by applying improved crop production technology or by increasing the cropping intensity. For achieving the two, the extension of irrigation to larger area and better water management are the prerequisite. Table 9 shows that more than two-thirds of the State fall in high and medium rainfall zones, and receive plenty of water annually through rains. If the rain water is scientifically conserved and utilised, it may guarantee rich crop harvests annually and enhance the prosperity of the rural area. It has been observed in the States of Punjab and Haryana, which achieved high growth rates of agriculture, the proportion of the rural population below the poverty line, is very low compared to other States. The poverty alleviation programme in the rural area should, therefore, be planned round the agricultural development for faster growth based on area approach by integrating soil and water management activities, coupled with land consolidation.

8.8 It has been observed from the evaluation studies conducted by Programme Evaluation Organisation of the Planning Commission,

TABLE 9—HIGH, MEDIUM AND LOW RAINFALL REGIONS OF THE MAHARASHTRA STATE IN 1978-79

('000 ha)

<i>Regions</i>	<i>No. of district</i>	<i>Reporting area</i>	<i>Net I. area</i>	<i>G.I. area</i>	<i>Net Sown area</i>	<i>G. Sown area</i>	<i>% to G. Sown area</i>	<i>Crop-ping Intensity</i>
<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>
High rainfall region (71150 mm)	9	9,815	51	649	3,893	4,281	15.28	110.0
Medium rainfall region (750-1150mm)	10	11,533	81	729	7,848	8,495	8.6	108.2
Low rainfall region (750 mm)	7	9,410	795	1,027	6,507	7,138	14.4	109.7
Total :	26	30,758	1,927	2,405	18,248	19,914	12.1	109.1

N.B. : I : Irrigated; G : Gross

Source : Indian Agriculture in Brief, Directorate of Economics and Statistics, Department of Agriculture and Cooperation, Min. of Agriculture and Rural Development, 1985.

NABARD and others that the benefit schemes operated under the IRDP have not achieved their objective of raising the beneficiaries above the poverty line. In implementing the IRDP, the sole objective of the district functionaries was to fulfil the target of assisting annually 600 families in each block and this resulted in spreading thinly the benefit over a large number of beneficiaries. No due consideration was given to the resource potential, infrastructure like marketing and transport, skill of the beneficiaries, suitability of agro-climatic conditions for different investment activities, etc., which may help in implementing the benefit schemes and consequently in raising the income of the families. Instead of fixing the number of families to be covered in each block as a target, it may be desirable to choose a set of benefit activities for each compact area like a block or a group of blocks, which can be complementary to the Five Year Plan schemes. Infrastructure like supply of inputs and marketing facilities of outputs generated through the benefit schemes may be developed through the normal Five Year Plans, but the financial and technical aids provided under the IRDP should be made available to only target groups of families. For example, for the animal husbandry benefit

schemes, an economically viable marketing infrastructure and other services can be developed only if these are operated in compact area, and adequate quantity of produce of the specific commodity for marketing is available. This type of integration of IRDP with the Five Year Plans will accelerate the economic development of the entire area, and not only that of target groups of families. Thus any benefit scheme, howsoever economically viable may appear, but if its beneficiaries are scattered in isolated pockets chosen from large area without adequate transport and communication facilities, is not likely to achieve its objective of improving the income of the rural poor on sustainable scale.

9. Data Need

9.0 It has been observed that the data base of Integrated Rural Development Programme is extremely poor and this has resulted in not only identifying the illegible families but even the suitability of the benefit schemes has become doubtful in a large number of cases. Consequently, scarce resources earmarked for providing aid to the rural poor families have been wrongly used and the impact of the programme in alleviating the rural poverty has hardly been felt. A little expenditure on the collection of basic data on the infrastructure of the area and the resources of the beneficiaries and their analysis might have made effective change in formulation and implementation of the IRDP.

9.1 There has been thinking since long time that the economic development plans should be prepared from 'bottom up' rather than from 'top down', but it has been hardly operative. The exercise of the formulation of production plan of individual farm families was at first attempted in the Intensive District Production Programme (IADP) during early sixties. But the scheme was abandoned due to voluminous work involved in collection of resource data from individual farmers and their appropriate analysis, and lack of training and inexperience of the district functionaries in preparation of farm plans.

9.2 The IRD Programme is an other scheme of the Government, in which individual families in rural areas with annual income below a specified limit are chosen and after analysing their resource and minimum requirements data, benefit projects are formulated and necessary financial and technical aids are presumably provided to them. This programme has also suffered from the same defects as IADP and may continue to suffer unless the IRDP functionaries realise the importance of diagnosis of diseases of poverty through analysis of accurate and comprehensive data relating to the suffering population. According to medical science, a

scientific diagnosis of the patient is a prerequisite to start the medical treatment. Even after the commencement of the treatment, periodical check up of the patient to observe the effectiveness of the medicine is a well recognised procedure in medical science. The poverty is worst disease that a person or a family can suffer from. Assuming the similarity in the treatments of physical disease and that of poverty it follows that the diagnosis of the families suffering from the acute disease of poverty should be done by collection and analysis of socio-economic base line data. After the diagnosis by real experts, the treatment of poverty eradication may commence through the benefit schemes, suitable to the individual families. During the course of implementation of the programme, the periodical check up of effectiveness of the various measures should be conducted on regular interval through monitoring of the performance and evaluation of socio-economic impact on affected families.

9.3 Recently, the Department of Rural Development has announced the policy of the concurrent monitoring and evaluation of IRDP and other poverty eradication programmes. This step may be welcomed. It however, seems the scheme of monitoring and evaluation on a limited scale has been entrusted to ad-hoc regional organisations without any assurance of its continuation. The coordination is supposed to be done by the Department of Rural Development without augmenting its organisation with appropriate specialists needed for such work. It is difficult to forecast the outcome of monitoring and evaluation scheme at this juncture but considering the magnitude of the project of IRDP, the infrastructure seems to be weak to produce any worth while result which may render substantial help in bringing about improvement in planning and implementation of the programme.

9.4 The main reasons for poor performance of the IRDP has been clearly brought out in the evaluation studies of PEO, NABARD and others. But none of these studies has pointed out about the weakness of formulation of schemes for individual beneficiaries. The development strategy from 'bottom up' to 'top down' planning, identification of the main constraints of the rural poor, careful examination of the available resources in relation to their felt needs, and more precisely designing of the policies and action programmes which will help to improve their conditions of minimum needs, would require a comprehensive family-wise data base at the village level, the unit of basic planning.

9.5 The collection and analysis of data at the village level are based on the assumption this will be necessary for formulating the schemes for improvement of the living standards of all the people at the village, in

particular the rural poor, and for monitoring and evaluation of the progress in the implementation of the schemes. The development of a system of village level statistics is considered necessary as it provides information useful for development planning at the village as well as at higher level (block, district etc.).

9.6 The village level statistics system should not be considered as an independent statistics programme. Through the proper linkages with the existing statistical programmes, it should be possible to build up an appropriate village level statistics system. To start with, the system may be built by pooling the data from censuses of population, housing, agriculture, livestock, and small scale industries, as well as those available in administrative records. As the programme of planning rural development progresses, the gap in the data requirements for formulation of projects, and for monitoring and evaluating their progress can be easily located and appropriate measures can be evolved to fill up. In short, the system of village level statistics should be capable of providing necessary information for formulation and evaluation of plans at micro-level. In particular, it should be able to supply data for computation of socio-economic indicators and other statistical parameters for monitoring and evaluating the progress and performance of agricultural and rural development projects.

9.7 Organisationally, it should be the responsibility of the Ministry of Agriculture and Rural Development at the Centre to develop such a system. At the State level, the responsibility should be on the department responsible for agricultural and rural development planning. Apparently, the task in developing such a system may appear difficult. But in reality it is not so. The country had already developed statistical set up at various levels to take up the job although it may be weak at places. It is a question of only augmenting it suitably. A little expenditure on developing an appropriate statistical system along with computerization of data will be fully compensated from the benefit that may accrue through the improved efficiency of planning and implementation of IRDP.

9.8 Finally, it may not be out of way to briefly mention the role of agricultural universities in the task of rural development. No doubt, the agricultural universities and agricultural research institutes in the country have done commendable work in developing improved agricultural production technologies, which has helped the country in achieving self-sufficiency in the cereal requirement, but to my mind, they have not played any significant role in providing scientific guidelines for balanced development of the rural area. The agricultural universities have got the necessary infrastructure and expertise for evolving appropriate production

technologies suiting the specific area and individual rural families. It should not be forgotten that the main customers of the research outputs of agricultural universities are the rural families in general and farming communities in particular. Active participation of Agriculture Universities in the IRD Programme will not only bring about technological change in the planning process but it may also provide a new direction and orientation to the research programmes undertaken by them. The gap between the production technologies developed by them and their actual adoption by the rural communities may thus be narrowed down considerably. It is wondered whether each agricultural university can adopt a sizeable but manageable compact rural area in its jurisdiction for demonstrating the technique of rural development as an experimental exercise. In such a programme, besides crop and animal production specialists, the rural economists and sociologists and agricultural statisticians should actively participate from the stage of actual formulation of the development plans to monitoring and evaluation of its economic and sociological impact on the people covered by the programme.

I have talked long enough without, however, being able to touch more than a fringe of the problems that face us. It must, however, be realised that those living below the poverty line cut across the barriers of states and regions and if these people continue to alienate from the main stream of development, the results can be dangerous. The task of rural development is indeed gigantic and difficult. Resources are scarce although the country is endowed with plenty of manpower. The solution lies in formulation of development strategy, which promises the use of manpower with limited physical and financial resources, leading to accelerated growth of rural economy. With the advance of computer technology and easy availability of computational facilities, the statisticians have been endowed with much more power now. It is hoped that statisticians who, by training and experience develop expertise in extracting action oriented information from a given set of events that have already happened, will be able to provide necessary guidance and help in effective planning and evaluation of IRDP.