Chapter - VII

Summary and Conclusions
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SUMMARY AND CONCLUSIONS

7.1 Introduction

Poverty and undernourishment have been there throughout the history of mankind. But the magnitude of poverty varies from country to country and from time to time in the same country. Today the world is divided into two unequal humanities, one embarrassingly rich and the other desperately poor. The third world countries particularly in South Asia and Sub-Saharan Africa are afflicted by the problems of poverty and unemployment. In these countries about one-half of the total population live in abject poverty. In terms of both income and social conditions, poverty remains much worse in rural areas. The rural poor accounts for more than 80 per cent of all the poor in Asian countries including India. The small peasants, agricultural and non-agricultural labourers, rural artisans and people belonging to the socially underprivileged castes like SCs and STs are the poorest among the poor - the ultra poor.

Poverty has an alarming dimension in the Indian context. It is a vicious issue enacting a devilish role in India. It is deeply rooted in the economic system on account of the failure of economic progress and proper structural changes. The poverty has become synonymous with India to such an extent that they seem to be inseparable. Unemployment, under-employment and low resource base of a multitude of producers particularly in agriculture are the principal causes of poverty. Concentration in the ownership of land, highly skewed distribution of
income and on the top of it population explosion are the perpetuating problems of poverty in our country.

Since 1970, a number of studies have been made by economists and social scientists to measure the number and percentage of Indian people below the poverty line. The estimates vary as different researchers have adopted different norms. The debate on the correctness of one estimate of the other is a futile exercise. There can be no difference of opinion that rural poverty in India is massive and requires a concerted and concentrated effort to reduce it.

7.2 Poverty Alleviation Programmes in India

Poverty reduction is a prominent objective of social and economic development in the Indian Constitution, finding expression in plans, policy statements and programmes. It has been an intensely pertinent concern in which research and policy have interacted and have to continue to do so.

Since the beginning of the Indian Economic Planning after gaining Independence, poverty alleviation has been accorded importance. However, in the first three Five Year Plans (1951-66) the planners had placed their reliance on the 'trickle-down' theory of development. The emphasis was, therefore, on the projects and policies which could bring higher growth rate. Beginning with the Community Development Programme in the early 1950's the Government of India launched growth oriented programmes like IRDP, IADP & HYV programme. These programmes brought far reaching changes in agriculture in the form of green revolution and there has been significant growth in agriculture
production. But these programmes could not tackle the problem of rural poverty because the benefits were derived by the large farmers and dominant social groups. Moreover, these programmes have created wide income inequalities and regional disparities.

It was during the Fourth Five Year Plan (1969-74), the confidence on the 'trickle-down' theory of development was development and it was considered necessary to have specific plan for attacking poverty. During this period a phenomenal increase in agricultural labourers in rural areas was also observed. In the Fourth Plan special programmes were introduced for the benefit of the poor. The planners followed a two-fold strategy: 'target group' approach and 'area development' approach. The objectives of these programmes were creation of assets, skill development and creation of infrastructure. During this period, SFDA, MFAL, aiming at helping the specific target groups, started functioning. There were some other programmes like CAD, DPAP, DDP which also aimed at helping the poor. The Food for Work Programme was started in 1977 to provide the work for the rural poor. There were also CSRE and PIREP in operation. The MNP was also initiated during the Fifth Plan Period for providing back-up support in the form of social consumption of goods and services. The public distribution system which provides for grain sales at 'fair' prices is another important instrument for income support.

The target-oriented and area development programmes, despite some successes could not make much dent into the problems of poverty and unemployment. By the second half of the seventies, these programmes had run
into problems on many accounts. Financial resources allocated for these programmes were considered inadequate in comparison to the expected results; targets groups were not well defined; there was lack of coordination among different implementing agencies; and, above all, the authorities seemed to have a fragmented view of rural development, linkages between different sectors of the rural economy were not properly recognised. As a corrective step, in the late seventies the target group approach got merged with the area development approach and the two together were incorporated in the IRDP. The IRDP and post - IRDP anti-poverty programmes, TRYSEM, DWCRA, NREP, RLEG, IAY, JRY, EAS, MWS, SITRA, NSAP, SGSY and JGSY, have been discussed in detail in Chapter II.

7.3 Integrated Rural Development Programme

IRDP, launched in 1978-79, came with an anti-poverty package. The beginning of the programme was in 1976, when it was implemented in 20 selected districts of the country. After a review in 1978, the programme was taken up in 2,300 blocks. The principle contents of the earlier programmes like those of SFDA, MFAL, CAD and DPAP were merged with IRDP. In 1980, the programme was extended to all the blocks of the country. The IRDP is the biggest anti-poverty programme. It aims at raising the levels of living of the poorest families in rural areas above the poverty line on a lasting basis by giving them income generating assets and access to credit and other inputs. The target group mainly consists of small and marginal farmers, agricultural and non-agricultural labourers, rural artisans and families belonging to Scheduled Castes and Scheduled Tribes whose income falls below the poverty line. With in the
target group, there is an assured coverage of 50 per cent for SCs / STs, 40 per cent for women, and at least 3 per cent should be covered physically disabled persons. Schemes are selected on the basis of the occupations in the respective areas. The cost of the unit is financed partly by providing subsidy and the remaining in the form of term loans from the financial institutions (Commercial Banks, Regional Rural Banks and Co-operative Banks). The percentage of subsidy varies from 25 per cent in the case of small farmers, 33.3 per cent in the case of marginal farmers, agricultural / non-agricultural labourers and rural artisans and 50 per cent in the case of Scheduled Caste and Scheduled Tribe families and physically handicapped. Certain ceilings have also been stipulated for the subsidy. There is provision for meeting the infrastructural gap also.

The programme is jointly implemented by the Government and the financial institutions. At the central level, the Ministry of Rural Development is incharge of its implementation. Selection of beneficiaries is done at several levels, starting with Gram Panchayat at the village level to Block / Mandal level and finally the DRDA at the district level. The list of selected beneficiaries is sent to the bank branches for assessing and financing their developmental needs. The Government provides subsidies to the beneficiaries.

A review of the performance of IRDP in the Sixth Plan and Seventh Plan in terms of allocation of funds, expenditure, beneficiaries covered, proportion of SC/ST beneficiaries covered and the per capita investment, the achievements, exceeded the targets. During the Eighth Plan large amounts were allocated for IRDP keeping in view the experience and the success during the Sixth and Seven
expenditure on IRDP was Rs. 5,808.67 crores and the number of families covered was 33.84 lakhs. The percentage of SC and ST beneficiaries covered was 46.16.

The implementation of the SGSY programme between 1999-2000 and 2001-2002 has highlighted many areas of concern. The central releases were substantially lower than the allocation as the field officers were not in a position to organise self-help groups which could be provided with financial assistance. Credit mobilisation also suffered in the process. Against the target of Rs. 9,611 crore of credit, the achievement during the above period has been only Rs. 3,235 crore, i.e. 33.66 per cent of the target.

The programme of IRDP in terms of the physical and financial targets and achievement is more than satisfactory since inception. From the point of view of the financial outlay and the geographical coverage, IRDP is the biggest rural development programme in India. Since a substantial portion of plan allocation has been at stake, it is of utmost importance to find out the impact of the programme on ultimate beneficiaries and its shortcomings, if any, so as to make improvements in future course of action. Several studies have been undertaken by different institutions and individuals covering different parts of the country. It is a well known fact that there are wide variations in the agro-climatic and socio-economic conditions and resource endowments of different regions. The IRDP schemes were designed to suit the local talents and resources of the respective regions. Hence, there is a need for micro level studies covering a specific region and this facilitates an indepth analysis of the economic impact of IRDP on poverty eradication. The present study is one of such attempts to study the economic impact of IRDP in Nellore District of Andhra Pradesh.
7.4 Objectives and Hypotheses

The study has the following objectives: (1) To make an overall review of working of anti-poverty programmes in India with special reference to IRDP; (2) To analyse the trends in the progress of IRDP in Nellore District; (3) To assess the impact of IRDP on economic conditions of the sample beneficiaries; (4) To examine the impact of IRDP on the incidence of poverty among the sample beneficiaries. In order to fulfil the above objectives, the following hypotheses were formulated for testing: (1) The IRDP has no positive effect on generation of income of the sample households. (2) The impact of IRDP on employment is not significant. (3) There is no significant change in the incidence of poverty after the implementation of IRDP.

7.5 Methodology

The evaluation of the impact of IRD programme has been pursued by comparing the conditions between the base year and the reference year. The sample beneficiary households for the study were selected on the basis of three stage stratified random sampling method. In the first stage, Mandals were selected, in the second and third stages, villages and beneficiary households were chosen respectively by applying the Simple Random Sampling technique. The Mandals in the district have been classified into three groups viz., developed, less developed and very backward on the basis of the levels of economic development. Two Mandals were selected from each group using Random Sampling technique. Accordingly, Kovur and Nellore Rural Mandals in the developed group, Thotapalli Gudur and Allur Mandals in the less developed group and Chittamur and Venkatagiri mandals from the very backward group,
were selected. Four villages were selected from each mandal again adopting Random Sampling procedure. All the IRDP sample beneficiary households in the selected mandals have been stratified according to the sector, scheme, occupation and caste. The sample households were selected in probability proportion to the total number of beneficiary households in each village and under each scheme in the sample mandals and due weightage was given to occupation / caste while selecting the households for the study. The study covered 312 sample beneficiary households and 67 of them were from the agriculture sector, 87 households from the minor irrigation sector, 53 households from the animal husbandry and 105 households from the ISB sector. The study covered the beneficiary households assisted during the financial year 1996-97 and the reference year of the study was 2000-2001.

Out of the 67 sample households in the agriculture sector, 15 households were provided with the assistance for plough bullocks, and agricultural implements 21 households for lime orchards for plough bullocks, 21 households for lime orchards, 13 households for mango orchards, 6 households for power sprayers, and 12 households for land development programme. Out of the 87 sample beneficiary households in the minor irrigation sector, as many as 44 households got assistance for filter point and electric motor, 10 households for electric motor and pipe line, 12 households for oil engine, 14 households for borewell and submersible motor and 7 households for digging of well. Out of the 53 sample beneficiary households in the animal husbandry sector, 37 sample households were provided with the assistance for graded murrah buffaloes and 16 households for sheep rearing. Out of 105 sample beneficiary households in the ISB sector, 20 households got assistance for tyre cart and bullocks, 13
households for provision stores, 14 households for autorickshaw, 18 households for handlooms, 6 households for laundry, 7 households for hair dressing saloon, 9 households for bunk and trade, 8 households for tailoring and cut pieces, 6 households for brick making and 14 households for electrical wiring and goods selling. These schemes have been identified as capable of producing the impact after a time lag of 3 to 4 years.

Out of 312 sample beneficiary households, 0.96 per cent were medium farmers, 15.38 per cent small farmers, 41.67 per cent marginal farmers, 20.83 per cent agricultural labourers, 11.54 per cent non-agricultural labourers, 4.17 per cent rural artisans and 5.45 per cent business category households. Out of the total sample households, 45.83 per cent were from scheduled castes, 9.94 per cent from scheduled tribes and 44.23 per cent from the other castes. Thus the sample households represented various IRDP schemes, occupational groups and caste groups.

The primary data from the sample households were collected through personal interviews with the help of a structural schedule. Appropriate statistical tools were employed to analyse the data and draw meaningful conclusions.

7.6 **Background of the Sample Households**

The study covered 312 sample households who were provided with the assistance under various schemes of IRDP. The sample households had a population of 1,846 persons. Among the sample households, 41.99 per cent were landless, 25.32 per cent had less than 1 acre, 16.35 per cent between 1 and 2
acres, 10.25 per cent in the range of 2 and 3 acres. The sample households who possessed land above 3 acres constituted 6.06 per cent of the total sample households. Out of the 272.86 acres of land held by the sample households, 59.23 per cent was irrigated and 40.77 per cent unirrigated.

The sample beneficiary households in the study area had different types of houses. Out of the total sample households, 32.69 per cent were dwelling in thatched houses, 24.36 per cent in the tiled houses and 42.95 per cent live in pucca houses. Out of the 312 sample households, 12.83 per cent of sample households were in the income range of less than Rs. 3,500/- in the base year, 25.96 per cent of households in the income range of Rs. 3,500-4,800/-, 40.38 per cent of the households in the range of Rs. 4,801-6,400/-, 14.42 per cent in the range of Rs. 6,401-11,000/- and 6.41 per cent were in the income range of above Rs. 11,000/-. The income levels of sample beneficiaries show that 93.95 per cent of the sample households were below the poverty level of Rs. 11,000/- in the base year. Among the different categories, 100 per cent of the medium farmers, 12.50 per cent of small farmers and 64.71 per cent of business category households were above the poverty line of Rs. 11,000/- in the base year while the remaining categories of marginal farmers, agricultural labourers, non-agricultural labourers and rural artisans were having income of less than Rs. 11,000/-. Among the different caste groups, all the scheduled castes and scheduled tribe sample households were below the poverty level of Rs.11,000/- per annum in the base year.
7.7 Distribution Pattern of IRDP Assistance

The IRDP assistance given to the 312 sample beneficiary households in the year 1996-97 under different sectors was Rs. 50,63,438, of which the subsidy was Rs.15,54,665 and the term credit was Rs. 35,08,793. The average financial assistance given to each family worked out to Rs. 16,229/. Among the different sectors, the average assistance was higher in the case of minor irrigation at Rs.22,696/- followed by Rs. 15,651 in the case of ISB sector, Rs. 13,757 in the case of animal husbandry and the lowest at Rs. 10,693/- in the agricultural sector. The average assistance per sample household worked out to Rs. 58,561/- for medium farmers, Rs. 20,556 for business category, Rs. 19,489 for agricultural labourers, Rs.17,538/- for rural artisans, Rs. 16,315 for non-agricultural labourers, Rs.15,522/- for small farmers and Rs. 13,162 for marginal farmers. The average assistance per household was the highest for scheduled castes at Rs. 24,312.88, followed by Rs. 13,358 in the case of scheduled tribe and Rs. 8,497.07 in the case of the other castes. The quantum of assistance varied from scheme to scheme.

7.8 Land holding Pattern and Utilisation

Among 312 sample beneficiary households, only 181 sample households were possessing land in the base year. The financial assistance provided for the schemes of filter point and electric motor, borewell and submersible motor, electric motor and pipeline and digging of well enabled the beneficiary farmers to improve the irrigation facilities. They possessed 272.86 acres comprising 161.61 acres (59.23%) of irrigated land and 111.25 acres (40.77%) of unirrigated land.
But in the reference year the total area increased to 289.75 acres comprising 201.90 (69.68%) of irrigated land and 87.85 (30.32%) acres of unirrigated area. The number of households who owned land increased from 181 to 183 in the reference year. The increased number belonged to the Agriculture sector. After the implementation of IRDP the unirrigated area (40.77%) had declined to 30.32% and the irrigated area (59.23%) had increased to 69.68% in the reference year.

The IRDP assistance has provided an opportunity to the beneficiaries to use their land more intensively and consequently there was an increase in the gross cropped area on an average, the gross cropped area per household increased from 1.56 acres in the base year to 1.64 acres in the reference year. This shows that the assistance had a positive effect on the land utilisation pattern of the sample beneficiaries.

7.9 Cropping Pattern of the Sample Beneficiary Households

The cropping pattern of the sample households reveals the income of the families. The data relating to the cropping pattern of the sample households shows that the gross cropped area had increased from 282.50 acres in the base year to 300.95 acres in the reference year. Regarding the crops, the farmers preferred to grow more orchards because among the orchards the farmers could cultivate inter-crops like vegetables, groundnut, maize etc. after the implementation of IRDP. Thus, there was a perceptible trend towards more remunerative crops.
7.10 Impact of IRDP on Income

The primary objective of the IRDP is to raise the income of beneficiary households by handing over to them a productive asset. Incremental income may enable the households to cross the poverty line or to move to a higher income bracket group. When the poorest of the poor families are selected for assistance one cannot expect all such families to cross the poverty line. The study revealed that the average net household income of beneficiaries was increased by Rs.4,563.89, which accounted for 79.72 per cent as their base year income. Among the different sectors, the average net income was increased by Rs.5,899.12 in the agricultural sector showing an increase of 119.51 per cent, Rs.5,469.23 in the minor irrigation sector accounting for 95.92 per cent of the base year income, Rs.3,885.38 in the animal husbandry sector accounting for 81.78 per cent and the average net income of the beneficiaries in the ISB sector was observed to have increased by 47.34 per cent i.e. by Rs. 3,189.96. ANOVA has been employed to study whether the variations in incomes between sectors and also within the sectors was significant or not. The results indicate that a significant difference in incomes among sectors and within sectors at 1 per cent level. Among the different schemes in the agriculture sector, the highest net incremental income was recorded by the land development programme (Rs.7,855.92) followed by lime orchards (Rs.7,531.62), mango orchards (Rs.5,116.92), power sprayers (4,251.83) and plough bullocks and agricultural implements (Rs.3,118.33). Among the different schemes, the percentage increase varied from a maximum of 181.87 per cent in the land development programme to a minimum of 61.48 per cent in the case of plough bullocks and agricultural implements. In various schemes of the minor irrigation sector, the highest net
incremental income was received by filter points and electric motor scheme (Rs.6,274.91), followed by oil engine (Rs. 5,537.75), bore well and submersible motors (Rs. 5243.71), electric motor and pipe line (Rs.4,521.60), and digging of well (Rs. 2,235.14). Among the two schemes in the animal husbandry sector, the net incremental income was the highest at Rs. 4,841.27 in the case of graded murrah buffaloes and Rs. 1,840.86 in the case of sheep rearing scheme. The percentage increase 97.68 per cent in respect of graded murrah buffaloes and 34.42 per cent in the case of sheep rearing. In the ISB sector, autorickshaw units were able to earn an average net incremental income of Rs. 7,277.00, whereas the provision stores realised an income of Rs. 4,263.40, and tyre cart and bullocks units an income of Rs. 4,174.70. The net incremental income worked out to Rs.3,932.50 for handlooms, Rs. 3,791.50, Rs.2,740.86 for brick making for electrical wiring and good selling Rs. 2,236.50 for tailoring and cut pieces, Rs.1,812.33 for bunk and trade, Rs.1,231.14 for hair dressing saloon and Rs.6,98.50 for laundry. It may be noted that the percentage increase has been the highest at 136.39 in the case of auto rickshaw and the lowest at 18.31 per cent in the case of laundry units. The paired 't' values are statistically significant except in the case of laundry and bunk and trade units. The conclusion is that the schemes in agriculture may be said to have performed well in terms of income generation from IRDP assistance. However, whether such an income generating would be sustained over a period of time is a thing to be watched.

Among the different categories of sample beneficiaries, the highest average net incremental income was recorded at Rs.7,894.62 by the rural artisans, followed by marginal farmers (Rs.5,187.15), agricultural labourers
(Rs.4,622.34), non-agricultural labourers (Rs.4,478.08), small farmers (Rs.3,124.65), medium farmers (Rs.2,383.67) and the lowest income of Rs.1,427.47 by the business category. In terms of percentage increase, it was the highest at 181.95 per cent for rural artisans, followed by 126.90 per cent for non-agricultural labourers, 124.84 per cent for agricultural labourers, 95.56 per cent for marginal farmers, 37.59 per cent for small farmers, 18.15 per cent for medium farmers and 11.57 per cent for business category. The paired ‘t’ values are statically significant which show significant variation in income in the reference year over the base year except for medium farmers. The data shows that the rural artisans have performed better than the other occupational groups. ANOVA has been used to study the significance of variation in incomes among different categories and within categories. The results indicate that neither the variations among categories nor the variations within categories are significant at 1 per cent level.

Among the different caste groups, the highest average net incremental income of Rs.4,684.71 was realised by Scheduled Castes followed by the other castes (Rs.4,469.86) and Scheduled Tribes realised the average income of Rs.4,042.58. The percentage increase in the income was the highest for Scheduled Tribes, (98.11%), followed by Scheduled Castes (93.81%) and other castes (65.31%). The results show that the net incremental income variation as well as the percentage increase in income were higher for Scheduled Castes and Scheduled Tribes compared to other castes. The paired ‘t’ values reveal that the incremental income is statically significant at 1 per cent level. ANOVA has been used to study the significance of variation in income among the various castes.
and also within castes. The results suggest a significant variation in income among castes and within castes at 1 per cent level.

The results of the Regression analysis shows that 31.44 per cent of the variations in the income were due to investment. For different sectors, the $R^2$ varies from a minimum of 0.316 to a maximum of 0.7941 which shows that the variation in income are explained by the variations in investment ranging between 31.6 per cent and 79.41 per cent. The ‘t’ values are statistically significant for all the sectors.

For different categories, the value of $R^2$ varies from a minimum of 0.0229 to a maximum of 0.9666 which shows that the variations in income are explained by the variations in investment ranging between 2.29 per cent and 96.66 per cent. The ‘t’ values are significant for all the categories except medium farmers and marginal farmers. The data reveals that the variations in income due to investment are highly significant in the case of rural artisans. Among different caste groups, the results indicate that 50.41 per cent of the variations in income in the case of SC’s are explained by the variations in investment and the corresponding percentage for the other castes is 21.54 per cent and 14.87 per cent for Scheduled Tribes. The ‘t’ values are significant for all the three caste groups.

Scheme income is referred to income earned by beneficiaries from the scheme asset. The study reveals that taking all schemes together, the average income derived from IRDP was about Rs.4,563.89, which flowed from an average investment of Rs.17,355.07. An analysis of scheme-wise investment income ratio (incremental capital output ratio) shows that the rate of return was the highest (3.66) from filter point and
electric motor and the lowest (0.05) from laundry units. For different sectors, it was 1:0.52 for agriculture sector, 1:0.22 for minor irrigation, 1:0.27 for animal husbandry and 1:0.19 for ISB sector. In the agriculture sector, the percentage of income generated due to a unit of investment varied from a maximum 295 per cent in mango orchards to a minimum of 16 per cent in power sprayers. In the minor irrigation sector, the percentage of increase in income to investment was estimated at 366 per cent for filter point and electric motor and 0.6 per cent for digging of well. In the animal husbandry sector, the percentage increase was very high at 31 per cent in respect of graded murrah buffaloes and 13 per cent in the case of sheep rearing. In the ISB sector, tyre cart and bullocks could yield the highest rate of return of 30 per cent while the laundry fetched a low rate of return of 0.5 per cent. Diversion of assistance for other purposes might have been responsible for such a low rate of return.

Category-wise analysis revealed that the rate of return was the highest (0.42) for rural artisans, followed by marginal farmers (0.37), non-agricultural labourers (0.26), agricultural labourers (0.22) small farmers (0.19), medium farmers (0.04) and business category (0.02). Though all the medium farmers and majority of business category households were above the poverty line in the base year, they could not properly maintain the asset so as to yield maximum possible income in the reference year. Among the different caste groups, the rate of return was more in ‘other castes’ (0.49), followed by Scheduled Tribes (0.29) and Scheduled Castes (0.18).

7.11 Impact of IRDP on Employment

The analysis on employment generation revealed that the average household employment has increased for beneficiaries in all the schemes. The average family labour employment per household was increased by 183.66 man-
days accounting for an increase of 32.88 per cent. The percentage increase was significant at 41.79 per cent for animal husbandry, 36.63 per cent for ISB sector, 34.05 per cent for minor irrigation and 29.38 for agriculture sector. It is important to note here that there has been a significant change in the status of employment in the sense that prior to the assistance, most of the beneficiaries were employed as hired labourers. With the assistance, they became self-employed. The insignificant rise in the employment in agriculture sector might be due to the fact that the agricultural operations involved more of hired labourers since the operations had to be completed in short time. Of the different schemes in agriculture sector, the net incremental employment per beneficiary household was the highest at 252.13 man-days in plough bullocks and agricultural implements, followed by 143.38 man-days in lime orchards, 82.00 man-days in land development programme, 62.85 man-days in mango orchards and 52.83 man-days in power sprayers schemes. The paired 't' values are statistically significant except for mango orchard scheme.

In the minor irrigation, the net incremental employment was the highest at 366.75 man-days in the case of filter point and electric motor scheme, followed by 217.20 man-days in electric motor and pipe line, 133.86 man-days in borewell and submersible motor, 106.29 man-days in oil engine and 91.57 man-days in digging of well. The paired 't' values are significant at 1 per cent level for all the schemes. The net incremental employment in animal husbandry sector was the highest at 185.11 man-days for graded murrah buffaloes while it was 144.57 in sheep rearing.
Of the different schemes in ISB sector, the net incremental employment per household was the highest at 265.50 man-days in tyre cart and bullocks, 232.25 man-days in auto rickshaw, 205.50 man-days in handlooms, 202.57 man-days in electrical wiring and goods selling, 183.86 man-days in respect of hair dressing saloon, 148.11 man-days in the case of bunk and trade, 133.25 man-days in tailoring and cut pieces, 91.00 man-days in the case of brick making, and 27.46 man-days in provision stores units which was very low. But the paired 't' values are statistically significant for all the schemes in the ISB sector. ANOVA has been employed to study whether the variations between the sectors and within sectors was significant or not. The results indicate that a significant variation in employment among sectors and within sectors at 1 per cent level.

Occupation-wise analysis revealed that the net incremental employment was the highest at 213.77 man-days in the case marginal farmers. While it was 202.33 man-days for medium farmers, 182.17 man-days for non-agricultural labourers, 177.59 man-days in business category, 171.22 in the case of agricultural labourers, 135.23 man-days for small farmers and 131.38 in the case of rural artisans. The paired 't' values are statistically significant except for medium farmers category. Among the different caste groups, the net incremental employment was the highest at 203.54 man-days for Scheduled Castes, followed by 174.31 man-days for Scheduled Tribes and 165.16 man-days for the other castes. The paired 't' values are significant at 1 per cent level for all the three castes. ANOVA is worked out to study the variations in employment generation among occupational categories. The values shows the variations in employment
generation between the various occupational categories and within the categories are significant at 1 per cent level.

The results of the regression analysis show that 90.37 per cent of the variations in employment were explained by the variations in the investment on IRDP schemes. For different schemes, the $R^2$ varies from a minimum of 0.0013 to a maximum of 0.9571 which shows that the variations in employment are explained by the variations in investment ranging between 0.13 per cent and 95.71 per cent. The 't' values are statistically significant for only power sprayers, filter point and electric motors, electric motor and pipe line, graded murrah buffaloes, provision stores and autorickshaw.

For different categories, the value of $R^2$ is estimated at 0.9990 for medium farmers which reveals that 99.90 per cent of the variations in employment are explained by the variations in investment while it is 95.51 per cent for small farmers, 91.02 per cent for marginal farmers, 86.97 per cent for rural artisans, 84.84 per cent for agricultural labour, 79.65 per cent for non-agricultural labourers, and 74.38 per cent in the business category. The paired 't' values are significant at 1 per cent level for all the categories of sample households. Among the different caste groups, the results indicate that 93.38 per cent of the variations in employment in the case of Scheduled Castes are explained by the variations in investment and the corresponding percentage for the other castes is 79.47 per cent and 30.62 per cent for Scheduled Tribes.
A review of the above results relating to employment leads to the inference that there was a significant increase in the quantum of employment through the IRDP assistance.

7.12 Impact of IRDP on Assets

The philosophy underlying the IRDP originates from the imperative that the main attack on rural poverty with productive assets and/or skills so that they are assured of income that raises them above the poverty line. The asset which is handed over to a beneficiary family will create an asset and improves the asset base. The IRDP may also have an inter-alia impact in creating additional assets as a result of re-investment of surplus derived from IRDP schemes.

The average value of assets per household has increased from Rs. 49,442/- in the base year to Rs. 67,429.42 in the reference year showing an increase of 36.38 per cent. Among the different sectors, there was an increase in their value by 71.21 per cent in animal husbandry, 45.48 per cent in minor irrigation, 35.56 per cent in ISB sector and 18.83 per cent in the agriculture sector. Scheme-wise analysis revealed variations in all the schemes. The case of asset creation was high in the case of auto rickshaws followed by power sprayers, tailoring and cut pieces, hair dressing saloon, handlooms, electric motor and pipe line, brick making, bunk and trade, graded murrah buffaloes, filter point and electric motor and land development programme. Among occupational groups, medium farmers possessed more assets both in the base year and reference year compared to the other classes. Among the different occupations, the highest percentage increase worked out to 134.80 in the case of non-agricultural labourers, followed by
131.61 per cent in the case of agricultural labourers, 117.19 per cent in the case of rural artisans, 111.51 per cent in the case of business and it was lowest in the remaining categories. Caste-wise analysis revealed that the percentage increase in assets was relatively high for STs.

The statistical 't' values for various schemes except in the case of tyre cart and bullocks reveal that there is a positive impact of investment on assets. The statistical 't' values for category-wise reveal that except in the case of small farmers there is a positive impact of investment on assets. The statistical 't' values for caste-wise reveal that there is a positive impact of investment on assets.

ANOVA is used to test the significance of variation between sectors and within sectors and also between caste groups and within caste in respect of per household assets of sample beneficiaries during the base year and reference year. The results suggest a highly significant variations in the reference year over the base year.

The results of the regression analysis reveals that the $R^2$ values for agriculture, minor irrigation, animal husbandry and the ISB sectors was 0.9301, 0.9839, 0.8848 and 0.6164 respectively which shows that the impact of investment has been more significant on asset creation in minor irrigation sector compared to the other sectors. For different occupational categories, the results of the regression analysis shows that the investment on IRDP schemes would create more assets to the farmers who already own assets than the wage dependent agricultural labour households. Among different caste groups, the results indicate that 92.93 per cent of the variations in the value of assets in the case of other castes are explained by the variations in investment
and the corresponding percentage for SCs is 83.16 per cent and 71.99 per cent for Scheduled Tribes.

7.13 Asset Retention

There is a general complaint that under IRDP, asset formation at the household level did not take place in all cases as some of the beneficiaries did not purchase the asset at all. Even when bought, they (assets) were not retained for long by the beneficiaries. The data on asset status revealed that on the whole 68.27 per cent of the beneficiaries had the asset intact with them four years after the assistance, which is quite encouraging. In the remaining 31.73 per cent cases where the assets were sold, not purchased and partly retained. Among the sectors, the asset retention was relatively higher in minor irrigation (75.86%) than in animal husbandry (71.70%), agriculture (67.16%) and ISB sector (60.95%).

Among the schemes in agriculture sector the percentage of beneficiaries who had retained the assets was 100 per cent in power sprayers and land development programme followed by 61.90 per cent in lime orchards, 53.86 per cent in mango orchards, and 46.67 per cent in the case of Plough bullocks and agricultural implements. In the minor irrigation sector, the percentage of beneficiaries who had retained the assets was 88.64 per cent in filter point and electric motor followed by 80.00 per cent in electric motor and pipe line, 71.43 per cent in borewell and submersible motor, 58.33 per cent in oil engine and 28.57 per cent in the case of digging of well. Of the two schemes in animal husbandry sector, the percentage of beneficiaries who had retained the assets was 86.49 per cent in graded murrah buffaloes and 37.50 per cent in the case of sheep
rearing units. In the case of schemes in the ISB sector, the percentage of beneficiaries who had retained the assets was 100 per cent in autorickshaw and brick making followed by 71.43 per cent in hair dressing saloon, 66.67 per cent in laundry, 66.67 per cent in bunk and trade, 66.66 per cent in handlooms, 50.00 per cent in tyre cart and bullocks, tailoring cut pieces, and electrical wiring and goods selling, and 46.15 per cent in provision stores.

Among the different categories of sample beneficiaries, the percentage of sample households who had retained the assets was more in agricultural labourers (75.38%) followed by marginal farmers (71.54%), rural artisans (69.24%) non-agricultural labourers (61.11%), small farmers (60.42%), business (58.82%) and medium farmers (33.33%). Caste-wise analysis revealed that 80.64 per cent of the Scheduled Tribe households had retained the assets, followed by Scheduled Castes (71.33%) and other castes (62.32%). The asset retention was high in SCs and STs when compared to the other caste groups.

7.14 Repayment Performance

Repayment of loans taken from financial institutions according to the repayment schedule is absolutely essential for enabling the institutions to recycle their funds. The repayment performance is one of the indicators of sound project management. It was observed that 36.22 per cent of the beneficiaries were regular in repayment and had fully repaid the amount before the due dates. Further, the study reveals that 16.35 per cent of the beneficiary families had not started repayment even after the expiry of more than the four years. Among the schemes, graded murrah buffaloes performed better than other schemes. The repayment of
loan was very meagre in the case of beneficiaries of brick making units. Among the occupational groups, major proportion of farming community had repaid the loan in full before the due dates. The repayment of loan was meagre in case of non-agricultural labourers. Caste-wise analysis revealed that 61.59 per cent of the beneficiaries of other than SC / STs were regular in repayment and had fully repaid the amount before the due dates. The repayment of loan was very meagre in case of ST beneficiaries.

7.15 Crossing of the Poverty Line

An analysis of the sample households crossing the poverty line reveals interesting trends in the impact of IRDP on the incidence of poverty. The results indicate that out of the 312 sample beneficiary households, 20 sample households were already above the poverty line of Rs. 11,000/- per annum during the base year consisting of one household in agriculture sector, 2 households in the minor irrigation sector and 17 households in the ISB sector. Out of 292 genuinely poor sample beneficiaries, 155 households were able to cross the poverty line of Rs.11,000/- while 95 household were able to cross the poverty line of Rs.13,000/- in the reference year showing 49.68 per cent and 30.45 per cent respectively. Among the different sectors, 68.97 per cent of the households in minor irrigation, 68.66 per cent of the households in agriculture, 45.28 per cent of the households in the animal husbandry and 23.81 per cent in ISB sector had crossed the poverty line of Rs. 11,000/- during the reference year. The percentage of genuinely poor families crossing the poverty line of Rs.13,000/- was 41.38 in minor irrigation sector, 35.82 in agriculture sector, 30.19 in animal husbandry sector and 18.10 in ISB sector during the reference year. The rate of success of
the IRDP was higher in minor irrigation and agriculture sector compared to the animal husbandry and ISB sectors.

Among the different categories, the three medium farmer households were above the poverty level of Rs. 11,000/- in the base year. Out of 48 small farmers category 6 sample households and 11 households from business category were already above the poverty line in the base year. The percentage of net number of sample beneficiaries who crossed the poverty line of Rs. 11,000/- was 76.92 in the rural artisans, 62.31 in marginal farmers category, 54.17 in the small farmers, 47.22 in the non-agricultural labourers, 33.85 in the agricultural labourer households, and -5.88 in the business category households. As per the revised poverty level of Rs. 13,000/- the percentage of genuinely poor households who crossed the poverty line was 100 in medium farmers, 69.23 in rural artisans, 47.06 in business category, 43.75 in small farmers, 27.69 in marginal farmers, 18.46 in agricultural labourers and 16.67 in non-agricultural labourers in the reference year. This shows that the impact of IRDP was very significant on rural artisans compared to the other categories.

Among the different caste groups, 20 sample households in the other castes group had already crossed the poverty line in the base year. During the reference year out of 143 sample households, in Scheduled Castes 49.65 per cent crossed the poverty line of Rs.11,000/- and 24.48 per cent as per the revised poverty line. Out of 31 Scheduled Tribe beneficiaries 35.48 per cent had crossed the old poverty line and 12.90 per cent of households were Rs.13,000/- during the reference year. Among the other castes groups out of 118 genuinely poor sample
households 52.90 per cent could crossed the old poverty level and 40.58 per cent reached the revised poverty norm of Rs.13,000/-. This shows that the impact of the IRDP in the case of the other castes was more significant than Scheduled Castes and Scheduled Tribes.

7.16 Upward Income Shifts

The study revealed that the beneficiaries have moved from lower income to higher income ranges in the reference year. Due to IRDP, the number of beneficiaries in the initial three income ranges declined and consequently resulted in a rise in the subsequent higher income ranges. It was observed that among the sectors, shift of the beneficiaries to higher income ranges was relatively high in agriculture sector. Category-wise analysis revealed that shifts of beneficiaries to higher income ranges was relatively high in small farmers. Caste-wise analysis revealed that the shift of beneficiaries to higher income ranges was relatively high in other castes.

7.17 Sen's Index of Poverty

The estimation of poverty based on Head Count Ratio is completely insensitive to the distribution of income among the poor. Overcoming the shortcomings of Head Count Ratio method, Sen was suggested an alternative approach, which focuses on the absolute income level of the lowest strata or the poverty level.

Sen's poverty measure has been worked out to measure the short fall in the income of persons below the poverty line. The proportion of persons below the
poverty line has declined from 93.59 per cent in the base year to 50.32 per cent as per old poverty line and 69.55 per cent as per revised poverty line in the reference year. While the average per capita income of persons below the poverty line has increased from Rs.5,195.72 to Rs. 5,957.39 as per old poverty line and Rs.8,303.94 according to the new poverty line. The Sen's P measure in the reference year has been worked out to 0.083 as per the poverty level of Rs. 11,000/- and 0.150 as per the revised poverty level against 0.148 in the base year. In the agriculture sector, the percentage of persons below poverty line has been computed at 98.50 in the base year and it has come down to 29.9 per cent as per the old poverty line and 68.7 per cent as per the new poverty line in the reference year. The average per capita income of the poor has increased from Rs.4,779.57 to Rs.5,181.30 as per the old poverty line and Rs. 9,210.80 as per the revised poverty line. Sen's 'P' measure has declined from 0.133 to 0.06 as per the old norm poverty level and 0.09 at the poverty level of Rs. 13,000/- in the reference year. In the case of minor irrigation sector the percentage of persons below the poverty line was 97.7 in the base year. There has been a decline in the proportion of persons below the poverty line from 97.7 to 28.7 per cent and 55.2 per cent according to the old poverty level and revised poverty level respectively. The average household income of the persons below the poverty line has increased from Rs. 5,488.08 to Rs. 5,658.52 and Rs.9,006.62 according to the old and new poverty norms respectively. The Sen's 'P' measure has declined from 0.126 in the base year to 0.094 as per old poverty line and 0.098 as per new poverty line in the reference year. In the animal husbandry sector, the percentage of persons below the poverty line in the reference year has been 62.3 and 84.9 as per old and new poverty norms against the 100 per cent in the base year.
The average per capita income of the poor has increased from Rs. 4751.15 to Rs. 5,166.82 and Rs. 6,961.82 according to old and revised poverty levels in the reference year over the base year. The Sen's poverty measure has been worked out to 0.226 in the base year and 0.179 and 0.142 as per the old and new poverty levels of income in the reference year. In case of ISB sector, the percentage of persons below the poverty line in the reference year has been 56.2 and 74.3 as per the old and new poverty norms against 83.18 in the reference year. The average per capita income of the poor has increased from Rs. 5,493.17 to Rs. 6,789.30 and Rs. 8,111.01 according to the old and new poverty norms and the Sen's 'P' measure has declined from 0.11 to 0.10 as per old poverty line and 0.14 as per the revised poverty norm in the reference year over the base year. The above data reveals that there has been a significant fall in percentage of poor and the intensity of poverty reflected by the decline in the Sen's poverty index and significant increase in the average per capita income of the poor as per the revised poverty line.

In the case of Scheduled Castes and Scheduled Tribes, the percentage of persons below the poverty line was 100, while it was 85.5 in the other castes groups in base year. In the Scheduled Castes the percentage of persons below the poverty line has declined from 100 to 50.30 as per old poverty line and 75.5 per cent as per new poverty line in the reference year. In the case of Scheduled Tribes, the percentage of persons below the poverty line has declined from 100 to 64.5 as per old poverty line and 87.1 per cent as per new norm poverty line in the reference year while in the case of other castes group, the percentage has declined from 93.59 to 50.32 as per old poverty line and 69.55 as per new poverty line of
Rs. 13,000/-. The average income of the persons below the poverty line has increased in all the caste groups. Sen's poverty measure has been estimated at 0.112 as per the old poverty line and 0.166 as per new poverty line in the reference year against 0.192 in the base year for Scheduled Castes and Scheduled Tribes while it has been 0.131 according to old poverty line of Rs. 11,000/- and 0.183 according to revised poverty line of Rs. 13,000/- in the reference year against 0.209 in the base year. The poverty measure has declined from 0.148 for other castes group in the base year to 0.083 as per old poverty line and 0.150 as per the new poverty line.

The extent of poverty among the beneficiaries by Sen's formula revealed that, after implementation of IRDP, a distinct improvement was seen among the beneficiaries in minor irrigation sector than the other sectors. Among the different caste groups, the impact of IRDP has been significant for Scheduled Castes and Scheduled Tribes compared to other caste beneficiaries.

7.18 Testing of Hypothesis

The analysis of the impact of IRD programme on generation of income pursued through the comparison of the net income of the beneficiaries in the base year and reference year, evaluation of the income generated through the IRDP schemes, the results of the paired ‘t’ test and the regression analysis suggests that the hypothesis that “IRD Programme has no positive effect on generation of income of the sample households” does not hold good and the hypothesis is rejected.
The comparison of the pattern of employment of the beneficiaries leaves the impression that most of the IRDP schemes could involved family labourers who were engaged as hired labourers prior to the scheme. Though the schemes did not show significant increase in the quantum of employment of family labour, they could generate self-employment. The results of the paired 't' test and regression analysis show that there is no much significant variation in employment. The IRDP has a positive effect on generation of employment in the sense that it could change the status of employment from hired labour to self-employment. Hence the hypothesis that "the employment effect of IRD programme is not significant" is rejected.

A significant decline in the proportions of persons below the poverty line, significant increase in the average income of the persons below the poverty line, significant fall in the Sen’s 'P' measure in the reference year in comparison with the base year, large scale shifts of the beneficiaries from the lower income levels to above poverty line provide evidence to reject the hypothesis that "there is no significant change in the incidence of poverty after the implementation of IRD programme".

7.19 Conclusion

The following conclusions emerge from the results of the study. The small farmers, marginal farmers, landless labourers and rural artisans constitute the hardcore of the rural poor. It has been observed that the assistance provided under IRDP is inadequate and the beneficiaries lack capacity to sustain the generation of income due to their poor economic back ground. Wrong identification of
beneficiaries and non-existence of the units are observed. Assistance was also provided to the persons who are well above the poverty line depriving the opportunity to the poorest of the poor. Periodical monitoring and supervision of the activities would make the programme effective. The IRDP schemes are observed to have positive impact in the generation of income and employment. Though sizeable proportion of the beneficiaries could not cross the poverty line, there is an improvement in their income nearer the poverty line. The effect on employment is evident form the change in the status of employment. Prior to the IRDP assistance, majority of the family labourers were hired labourers. After the IRDP assistance, they have become self-employed. It is fair to conclude that the IRDP have a favourable impact on employment.

The results indicate that there has been a significant increase in the value of assets of the assisted families after availing IRDP assistance. The results of the study based on Sen’s Poverty Indices suggest that there was a decline in the percentage of people below the poverty line increase in the per capita income of the poor, resulting in the narrowing down of the gap between poverty line income and the actual income. Despite some deficiencies, problems and leakages, the IRDP has helped to some extent in reducing the incidence of rural poverty in India. If the programme is effectively implemented, the income and employment generated will be sustained and the benefits of development will trickle down to the target groups.