A P P E N D I X

T O

C H A P T E R - 4

CHAPTER - 4

INCOME EFFECT, EMPLOYMENT EFFECT AND SOCIAL CHANGE

CHAPTER 4

INCOME EFFECT, EMPLOYMENT EFFECT AND SOCIAL CHANGE

4.01 Gross And Net Income Effect

The overall impact of the lending under the DRI scheme, both in the rural as well as in the urban sector has been positive, favourable and encouraging. This has been supported by the results obtained at the aggregative level; at the rural and the urban sectors level separately; at the individual activity level and at the individual beneficiary level respectively. The incremental income derived at the aggregative level has been Rs 7,92,010 between the two situations, namely, the pre-and-post-DRI loan periods (Table 4-1) and the net incremental income derived has also been positive (Appendix-Tables 4-1) and 4-2).

TABLE 4-1

LEVEL OF GROSS AND NET INCOME POSITION

Heads	(I) Pre-DRI Loan Period Rs.	(II) Post-DRI Loan Period Rs.	Incremental Income Rs.	Net Incremental Income Rs.
(i) Gross Income	7,91,428	15,83,438	7,92,010	-
(ii) Net Income	2,82,088	8,16,507	-	5,34,419

Thus, the increase in the level of gross income[1] has been 100 per cent, and the rise in the level of net income[2] has been 190 per cent, respectively, between the two situations referred to above.

4.02. Generative Capacity

At the aggregative level, the average net income derived per beneficiary has been Rs. 1,250 for an average size of loan disbursed at Rs. 1,343. Thus, the net income generative capacity has been reckoned at 93 per cent.

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1. Gross Income is the gross monetary value of all the earnings generated by the deployment of the loan advanced by the financing institutions. This is the total value of the income earned by pursuing productive economic activity. Although the gross income earned was on daily basis by the beneficiaries, at the first instance, it was averaged out on monthly basis, and thereafter on yearly basis. This was computed for individual beneficiary under each activity. Thereafter, the income was grouped for all beneficiaries, activity-wise as well as year-wise separately. Finally, it was aggregated for all the four years period to arrive at the total picture. The sector-wise data was then dis-aggregated into the rural and the urban sectors for facilitating analysis. The similar method was applied while calculating total servicing expenses, total expenditure, total consumption expenditure, and total net income, respectively. Further, for the purposes of analysis all these items referred to above have been averaged out to provide better indicators for the study.

2. Net Income has been derived during the Post-DRI loan period by deducting not only consumption expenditure incurred by the beneficiary on himself but also servicing cost and total operating expenses from the gross income.

For the urban sector, the net income generative capacity for an average size of loan has been higher (102 per cent) as compared to the rural sector (91 per cent), respectively. Although, this capacity has been quite substantial, it may be mentioned that it could have been still higher had the full credit needs of the beneficiaries been met by the financing institutions. It may be pointed out here that out of this net income generated, the beneficiaries were required to repay the principal loan amounts as well as they were expected to meet the consumption expenditure of their family members. Thus, our field survey reveals that a very few beneficiaries, in actual effect, were in a position to plough back out of their net income generated into their business to create further assets out of the loan (i.e. investment). The residuals in the form of savings were almost negligible since the immediate reaction of most of the beneficiaries was to spend on the basic necessities of life such as better food, better clothes and better shelter etc.

4.03 Comparative Picture

The level of gross income for the rural sector during the Pre-DRI loan period has been reckoned at Rs. 1,113 per annum per beneficiary, and for the urban sector at Rs. 1,452, respectively. It may be observed that during the Post-DRI loan period, the level of gross income position has risen to Rs. 2,366 for the rural sector, and at Rs. 2,569 for the urban sector, respectively. Thus, the rise in the level of gross income in the urban sector, on an average basis was 77 per cent compared to the rise in the level of the rural sector which was high at 112 per cent. Analysis of data further indicates that the quantum of net income, on an average, generated varied from Rs. 186 (retail trade) to Rs. 2,346 (pumpsets) in the rural sector, and in the urban sector from Rs. 680 (vending cloth) to Rs. 2,750 (vending glasswares), per annum per beneficiary, respectively. As referred to earlier, on an average, the net income has been reckoned at Rs. 1,250 per beneficiary at the aggregative level; Rs. 1,372 for the rural sector, and Rs. 954 for the urban sector, respectively, during the Post-DRI loan period[3].

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3. The gross as well as the net income has been computed for the first year of lending under the scheme since the financing institutions operated this scheme as a one shot operation. Survey reveals that the second and the subsequent loans to the beneficiaries, even with the good repayment performance of some beneficiaries, were not disbursed by the financing institutions. Further, the beneficiaries who had net negative income as well as the low income level did not provide their income earnings for the second as well as for the subsequent years. Hence, we have not attempted efficacy of the scheme for the subsequent years as our results would have been vitiated due to non-participation fully by some beneficiaries in our enquiry of income stream.

4.04 Rise in Consumption Expenditure

It may be worthwhile to point out here that as the level of gross as well as the level of net income has increased, the size of the consumption expenditure has also increased during the pre-and-post-DRI loan period. Table 4-2 reveals that the rise in the level of consumption expenditure during the Post-DRI loan period over the Pre-DRI loan period has been 5.10 per cent.

Table 4-2

Level of Consumption Expenditure

Consumption Expenditure[4] (I) Pre-DRI Loan	Consumption Expenditure[5] (II) Post-DRI Loan	Rise in Expenditure in Absolute Term	Percentage Increase
Rs. 5,09,340	Rs. 5,35,335	Rs. 25,995	5.10

4. During the Pre-DRI loan period the consumption expenditure has been assumed at Rs.65 per beneficiary per month.

5. During the Post-DRI loan period, the consumption expenditure has been assumed between Rs.55 to Rs.85 per beneficiary per month. The variations have been based on the basis of the observations made during the field survey. However, the basis has been the Sixth Five Year Plan document of the Planning Commission, Government of India, which defined the level of consumption expenditure for the rural and the urban sectors.

4.05 Changes in Gross and Net Income

The impact of the DRI lending on the gross income position is reflected in Table 4-3 which indicates the pattern of changes in the gross income position as well

TABLE 4-3

CHANGE IN GROSS INCOME OF SELECTED BENEFICIARIES

Level of Gross Income per annum (Range)	Urban beneficiaries		Rural beneficiaries		Total sample	
	Before DRI Loan	After DRI Loan	Before DRI Loan	After DRI Loan	Before DRI Loan	After DRI Loan
Rs. 500 to 1000	20 (10.53)	15 (7.90)	119 (25.71)	63 (13.60)	139 (21.29)	78 (11.94)
Rs. 1001 to 1500	19 (10.00)	Nil (Nil)	331 (71.50)	34 (7.34)	350 (53.60)	34 (5.21)
Rs. 1501 to 2000	11 (5.78)	6 (3.16)	Nil (Nil)	76 (16.42)	11 (1.68)	82 (12.56)
Rs. 2001 to 2500	27 (14.22)	47 (24.74)	3 (0.65)	76 (16.42)	30 (4.60)	123 (18.24)
Rs. 2501 to 3000	104 (54.74)	77 (40.52)	5 (1.07)	76 (16.42)	109 (16.69)	153 (23.93)
Rs. 3001 and above	9 (4.73)	45 (23.68)	5 (1.07)	138 (29.80)	14 (2.14)	183 (28.02)
Total	190 (100)	190 (100)	463 (100)	463 (100)	653 (100)	653 (100)

(Figure in brackets indicate percentage to the total) as changes in distribution pattern of beneficiaries effected during the Pre-and-Post DRI loan periods. Analysis of data indicates a favourable and positive change at the aggregate level. The level of gross income of 76 per cent of the total beneficiaries, prior to the DRI loan (500 out of 653) was in the income range of Rs. 500 to Rs. 2000 per annum per beneficiary whereas during the Post-DRI loan period, the level of gross income of 70 per cent of (459 out of 653) the total sample was in the income range of Rs. 2001 and above Rs. 3001 per annum per beneficiary. It may be pointed out here that the shift of the beneficiaries in the rural sector as compared to the urban sector, into the higher income range brackets of Rs. 2001 and above Rs. 3001 has been more. Similar picture has emerged in respect of net income position of the beneficiaries under the study. Examination of data presented in Table 4-4 indicates that at the aggregate level, the number of beneficiaries in the higher income range brackets of Rs. 1501 to Rs. 2500 during the pre-DRI loan period represented were hardly 46 whereas the number of beneficiaries increased to 237 during the Post-DRI loan period. It may be further pointed out that some 40 beneficiaries (Table 4-4) during

TABLE 4-4

CHANGE IN THE NET INCOME OF SELECTED BENEFICIARIES

Level of Net Income per annum (Range)	Urban Beneficiaries Before DRI Loan	Urban Beneficiaries After DRI Loan	Rural Beneficiaries Before DRI Loan	Rural Beneficiaries After DRI Loan	Total Sample Before DRI Loan	Total Sample After DRI Loan	Percentage Change
(i) Negative Income							
Rs. 100 to 700	19 (10)	2 (1)	97 (21)	37 (8)	116 (18)	39 (6)	66.37
Rs. 701 to 1000	- (-)	11 (6)	- (-)	- (-)	- (-)	11 (2)	-
(ii) Positive Income							
Rs. 100 to 500	100 (53)	47 (25)	241 (52)	79 (17)	341 (52)	126 (19)	63.04
Rs. 501 to 1000	11 (6)	61 (32)	100 (22)	22 (5)	111 (17)	83 (12)	25.22
Rs. 1001 to 1500	27 (14)	6 (3)	12 (3)	111 (24)	39 (6)	117 (18)	200.00
Rs. 1501 to 2000	24 (13)	53 (28)	7 (1)	96 (21)	31 (5)	149 (22)	380.64
Rs. 2001 to 2500	9 (-)	4 (2)	6 (1)	84 (18)	15 (2)	88 (15)	486.66
Rs. 2501 to 3000	- (-)	6 (3)	- (-)	34 (7)	- (-)	40 (6)	-
Total	190 (100)	190 (100)	463 (100)	463 (100)	653 (100)	653 (100)	

(Figures in brackets indicate percentage to the total)

Post-DRI loan period had even higher income range of Rs. 2,501 to 3,000 per annum per beneficiary, however, in this income range there was none during the Pre-DRI loan period.

4.06 Net Negative Income Effect

Only disquieting feature has been that 39 out of 463 beneficiaries in the rural sector, and 11 out of 190 beneficiaries in the urban sector had net negative income effect. However, they together represented only 8 per cent of the total sample. In the rural sector, they were hardly 8 per cent and in the urban sector only 6 per cent of their respective samples. These beneficiaries had net negative income effect on account of the personal/occupational difficulties they faced which can be overcome by attending to them appropriately. It may be mentioned that the difficulties can be overcome if the backward as well as the forward linkages are effectively ensured under the scheme, as it has been done in two cases of activities, namely, fishery and dairy, by the Tribal Development Corporation, in this study.

4.07 Positive Impact

It may, however, be mentioned that the reduction in the number of beneficiaries from 116, during Pre-DRI loan period to 50 during Post-DRI loan period, having net negative income position, has been the positive aspect of the lending under the DRI scheme. Further, the change in the income position of a large number of beneficiaries into the higher net income range pleatau than before provides a sufficient indicator of the overall positive impact of the lending under the DRI scheme. Table 4-4 further reveals that the percentage change has been significant into the higher net income range brackets of Rs. 1501 to Rs. 2000 (380.64 per cent), and Rs. 2001 to Rs. 2500 (486.66 per cent), respectively, of the beneficiaries during the Post-DRI loan period. (Table 4-5)

4.08 Analysis of Discounting Measures

In order to evaluate the efficacy of the DRI scheme more scientifically, we have applied test of three discounting measures[6], to compare costs and

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6. "Economic Analysis of Agricultural Projects" by J. Price Gittinger, A World Bank Publication (Low Price Indian Edition) published by (erstwhile) Agricultural Refinance and Development Corporation (now NABARD) Bombay, March, 1976.

benefits[7]. The most commonly used is the Benefit/Cost Ratio (BCR). We have also used the other methods, namely, the Net Present Worth of Benefits (NPW), and the Internal Rate of Return (IRR). The Net Present Worth criteria gives us the absolute measure, and the Benefit/Costs Ratio provides us the relative measures of the benefits whereas the Internal Rate of Return indicates the capacity of the scheme to generate income per unit cost with a given time preference[8]. In the case of this study, we have considered twelve months period to evaluate the investment made under the DRI scheme. We have also carried out the test of the critical elements, namely, the benefits and the costs which have vital bearing on the operation of the scheme. The uncertainty of these two elements have been tested by reducing the benefits by 10 per cent, and at the same time, escalating the costs by 20 per cent. This would help us to assess, if

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7 "Project Appraisal and Planning for Developing countries" by I.M.D. Little, J.A. Mirrlees, Oxford & IBH Co., (Low Price Indian Edition), Bombay, 1975.

8 " Guidelines for Project Evaluation ", published by United Nations Industrial Development Organisation, United Nations (Vienna), New York, 1972.

any, inherent bias in the scheme. This would also provide us the further information about the efficacy of the different activities covered under the scheme (i.e. 1 to 19 activities covered by this study), and also of the entire scheme (all the different activities combined together) under uncertain conditions namely, reduction of benefits/escalation in costs which are very critical factors in the implementation of the scheme[9]. Thus, the Sensitivity analysis tries to avoid over estimation/under estimation of the costs and benefits[10].

The financial viability of the total lending to 653 beneficiaries covered under all the different nineteen activities (scheme) has been attempted by computing the cash flow stream (month-wise initially and thereafter aggregated to annual) to carry out the test of BCR. The projected net surpluses (i.e. benefits) derived has been given in Appendix-Tables 4-3 from year to year covered by the study, to present the aggregative picture of the overall impact of the DRI scheme. Benefit/Cost ratio at

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9. The word 'activity' is used as synomous with 'scheme' in respect of analysis here.

10. "Project Appraisal Technique" by R.L. Pitale, published by Oxfort & IBH Co., New Delhi, 1982, p. 154.

4 per cent per annum discount rate works out to 1.48 is positive and it is more than unity. The Net Present Worth has also been positive at Rs. 4,72,703, and the Internal Rate of Return has been more than 50 per cent which indicate the capacity of all the activities (schemes) covered by the study to generate maximum income[11]. Further, to test as to what may happen to all the activities considered here, if their earning capacity falls by 10 per cent, and at the same time cost escalates by 20 per cent. We have applied the Sensitivity test with the above assumptions. Results obtained have been given in Appendix-Tables 4-4 which reveal that even after the adjustments, the BCR is positive at 1.11 at 4 per cent per annum rate of interest. The NPW has also been positive at Rs. 1,30,885 and the IRR derived has been higher at over 50 per cent. Thus, a very high percentage of IRR provides us a sufficient indicator that the overall lending under the DRI scheme, has been financially viable not only from the point of view of the financing

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11. It may be mentioned that for the total nineteen activities, when the examination is done separately activity-wise it indicated that the BCR has been less than unity for Sheep rearing (0.70) and Camel cart cart activity (0.84), respectively and the NPWs derived has also been negative for these two activities. However, it did not affect the overall lending/performance/results under the DRI scheme.

TABLE 4-5

COMPARATIVE PICTURE OF CHANGE IN THE NET INCOME POSITION (RURAL, URBAN AND AGGREGATE LEVEL)

Net Income Range	Rural (Percentage Change)	Urban (Percentage Change)	Aggregate (Percentage Change)
(i) Negative Income			
Rs. 100 to Rs.700	89.47	61.85	66.37
Rs. 701 to Rs.1000	-	-	-
(ii) Positive Income			
Rs.100 to Rs.500	53.00	67.21	63.04
Rs.501 to Rs.1000	454.54	78.00	25.22
Rs.1001 to Rs.1500	77.77	825.00	200.00
Rs.1501 to Rs.2000	120.83	1271.42	380.64
Rs.2001 to Rs.2500	55.55	1300.00	486.66
Rs.2501 to Rs.3000	-	-	-
Total	-	-	-

(Footnote : For the details of the distribution of beneficiaries refer Table 4-4).

TABLE 4-6

ACTIVITY-WISE RESULTS OF BENEFIT/COST RATIO; NET PRESENT WORTH; INTERNAL RATE OF RETURN AND SENSITIVITY TEST

Names of Activities	Activity Number	Benefit/ Cost Ratio	Net Present Worth (Rs.)	Internal Rate of Return (Per cent)	Sensitivity Test: Benefit/ Cost Ratio	Sensitivity Test: Net Present Worth (Rs.)	Sensitivity Test: Internal Rate of Return (Per cent)
1.	2.	3.	4.	5.	6.	7.	8.
Agriculture	1	3.34	57,143	50	2.65	44,899	50
Handloom Weaving	2	1.21	16,034	50	0.91	(-) 8,115	Not Attempted
Fishery	3	2.02	52,676	50	1.51	31,982	50
Dairy	4	1.26	33,791	50	0.94	(-) 7,780	Not Attempted
Sheep-Rearing	5	0.70	(-)20,468	Not Attempted	... Not Attempted		
Basket Weaving	6	2.03	7,882	50	1.53	4,818	50
Leather Work	7	2.63	17,976	50	1.97	12,874	50
Vending Cutlery	8	2.02	8,766	50	1.52	5,320	50
Pan Bidi Shop	9	2.39	17,902	50	1.79	12,273	50
Retail Trade	10	1.92	19,302	50	1.44	11,123	50
Pumpsets (farming)	11	1.24	15,733	50	0.93	(-) 4,910	Not Attempted
Cycle Rickshaw Pulling	12	2.65	53,322	50	1.98	38,229	50
Camel Cart Pulling	13	0.84	(-)22,235	Not Attempted	.. Not Attempted		
Bullocks (farming)	14	1.65	38,594	50	1.24	17,024	50
(1 to 14) Activities	Rural Sector	1.42	2,95,998	50	1.06	55,211	50

TABLE 4-6 (CONTD.)

1.	2.	3.	4.	5.	6.	7.	8.
Tailoring	15	2.27	27,500	50	1.70	18,297	50
Vending Cloth	16	2.35	94,667	50	1.10	25,664	50
Vending Glass-wares	17	3.82	10,442	50	2.87	8,290	50
Vending Fruits and Vegetables	18	2.80	7,746	50	2.10	5,681	50
Miscellaneous Activities	19	1.72	36,306	50	1.29	17,690	50
(1 to 5) Activities	Urban Sector	1.63	1,76,705	50	1.22	75,675	50
(1 to 19) Activities	Aggre-gate	1.48	4,72,703	50	1.11	1,30,885	50

institutions but the beneficiary at large have also been benefited. The point, therefore, emerges is that, barring a few beneficiaries who had a low level of net income or those who had net negative income effect, the efficacy of the DRI scheme as revealed by the results obtained in most of the activities[12] holds cut the capacity to withstand unforeseen circumstances/contingencies (Table 4-6).

4.09 Rural Sector (Income Effect)

The income-effect at the beneficiary level has been positive in the rural sector which can be seen from Table 4-7. The rise in the average gross income per beneficiary has been 112 per cent whereas in the net income it has been much higher at 312 per cent. The generative capacity of loan has been almost 91 per cent at the individual beneficiary level which means that for an average loan amount disbursed at Rs. 1509, the average net income generated has been Rs. 1372 per annum in the rural sector. Thus, the net increment income derived at Rs. 1039 per annum per beneficiary has been quite substantial. Further,

12. For two activities, namely, Sheep-rearing and Camel cart the Sensitivity test was not carried out since their BCR derived has been less than unity, and the NPW has also been negative. For seventeen activities, the Sensitivity test carried out revealed that three activities, namely, Handloom Weaving, Dairying & pumpsets were vulnerable to benefits/costs adjustments. The BCRs and NPWs derived for these three activities have been less than unity and negative.

the computation of income-effect for the rural sector as a whole indicated during the Pre-DRI loan period the level of gross income was at Rs. 5,15,331 which increased substantially to Rs. 10,95,338 during the Post-DRI loan

TABLE 4-7

INCOME EFFECT OF RURAL BENEFICIARIES

Heads	Pre-DRI Loan period	Post-DRI Loan period	Incremental Income/Net Incremental Income	Percentage increase
	(Rs.)	(Rs.)	(Rs.)	
1. Gross Income	5,15,311	10,95,338	5,80,027	113
2. Net Income	1,54,171	3,06,768	1,52,597	99
3. Average Gross Income	1,113	2,366	1,253	112
4. Average Net Income	333	1,372	1,039	312

period, indicating a rise by almost 113 per cent. Similarly, the net income reckoned at Rs. 1,54,171 during the Pre-DRI loan period increased to Rs. 3,06,768 during the Post-DRI loan period, registering increase by about 99 per cent. Thus, the net incremental income derived has been Rs. 1,52,597 in the rural sector. Although, the overall impact of the lending under the DRI scheme under fourteen selected activities has been quite favourable and positive, it may be pointed out that 37 out of 463 beneficiaries had net negative income-effect, in the range of Rs. 100 to Rs. 700 per beneficiary. However, they form only 8 per cent of the total sample.

4.10 Discount Measure Analysis (Rural Sector)

The overall financial viability of the different activities covered in the rural sector has also been evaluated with the aid of three discounting measures, namely, referred to earlier (i) BCR, (ii) NPW, (iii) IRR. The Sensitivity test for this sector has also been worked out. For all the 463 beneficiaries covered in all the fourteen activities which form the core of the rural sector lending under the DRI scheme in this study indicate that the BCR has been positive and more than unity at 1.48 at 4 per cent per annum rate of interest. The NPW has also been positive at Rs. 4,72,703, and the IRR has been well over 50 per cent which indicates that there is a maximum capacity to generate higher income in all the activities covered in the rural sector. In order to test the element of uncertainties, namely, the less yields, and the higher input costs, we have carried out the Sensitivity test, as mentioned before, by reducing the benefits by 10 per cent in all the activities covered, and at the same time escalating the costs by 20 per cent. The results obtained, even after the adjustments, indicate that the BCR at 1.11 at 4 per cent per annum rate of interest has been positive and more than unity. The NPW has also been positive and has been estimated at Rs.1,30,885 (Table 4-6). The IRR derived has been well over 50 per cent which indicates that the different activities selected in the rural sector, even after the adjustments, can withstand the unforeseen circumstances. It may thus, be concluded that the results obtained indicate that the activities covered in the rural sector, as a whole, are financially viable. (Appendix-Tables 4-3 and 4-4).

4.11 Urban Sector (Income Effect)

The income-effect in the urban sector examined in Table 4-8 indicates that the incremental income derived at the individual beneficiary level was Rs.1,117 and the net incremental income has been Rs.282, indicating percentage increases of 77 and 42 per cent, respectively, during Post-DRI Loan period over the Pre-DRI loan period. For an average loan disbursed at Rs. 936, the generative capacity indicated has been much higher at 102 per cent in the urban sector as compared with the rural sector. At the aggregative level, the rise in the gross income position has been almost 77 per cent and in the net income position has

TABLE 4-8

INCOME EFFECT OF URBAN BENEFICIARIES

Heads	Pre-DRI Loan period (Rs.)	Post-DRI Loan period (Rs.)	Incremental Income/Net Incremental Income (Rs.)	Percentage Increase
1. Gross Income	2,75,917	4,88,100	2,12,183	77
2. Net Income	1,27,717	1,81,332	53,615	42
3. Average Gross Income	1,452	2,569	1,117	77
4. Average Net Income	672	954	282	42

been around 42 per cent, between the Pre- and Post-DRI loan periods. Only disquieting feature has been that out of the total 190, 11 beneficiaries had net negative income effect on account of personal/business difficulties encountered by them.

4.12 Discount Measure Analysis (Urban Sector)

The overall financial viability of 190 beneficiaries covered in the urban sector evaluated with the help of the BCR indicates that it has been positive at 1.63 at 4 per cent rate of interest per annum, and the NPW has also been positive at Rs.1,76,705. The IRR calculated has been well over 50 per cent which indicates the maximum capacity to generate higher income by the beneficiaries under all the activities covered in this sector. In order to test the uncertain elements, namely, the lower yields and the higher costs, we have reduced the benefits by 10 per cent, and at the same time increased the costs by 20 per cent. The Sensitivity test applied with the above assumptions reveals that the BCR obtained at 1.22 at 4 per cent rate of interest has been positive and more than unity. Similarly, the NPW obtained has also been positive at Rs.75,675. The IRR calculated indicates well over 50 per cent which can be interpreted to say that the income generative capacity of the different activities covered has been quite high in the urban sector (Appendix-Tables 4-3 and 4-4).

INCOME EFFECT OF THE LOAN[12] (REGRESSION ANALYSIS)

4.13 (I) Aggregate Level: Gross Income Effect - All Activities (Rural and Urban)

Equations (1 and 2), produced below, are addressed towards estimating the above relationship for the all activities (i.e. at the aggregate level). In the equations (1 and 2) the relationship examined is between Gross Income (GI) and the Total Loan Amount (LA). Thus, our results

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12. GI refers to Gross Income and NI refers to Net Income in this exercise.

reveal that the double log equation specifications appear to have performed better, giving an explanatory capability of 84 per cent of the variation in LA. The relationship is both positive and significant. The income elasticity of the loan in the log equation is 1.19, however, in the linear formulation, the value is only 0.87.

$$LA = 6110.46 + \underset{(5.57)}{0.48^*}$$

$$\text{Elasticity} = (0.8675)$$

$$\bar{R}^2 = 0.646 \qquad \ldots \qquad \ldots \qquad (1)$$

$$\text{Log } LA = -\,2.85 + 1.19^* \log GI$$

$$\bar{R}^2 = 0.841 \qquad \ldots \qquad \ldots \qquad (2)$$

4.14 Rural Activities

For the rural sector in the equations (3 and 4), the relationship between GI and LA has been found to be positive and significant in both specifications - linear as well as double log.

$$LA = -6433.95 + 0.72^{*}\ GI$$
$$(4.90)$$

$$\text{Elasticity} = (1.1289)$$

$$\bar{R}^2 = 0.667 \quad \ldots \quad \ldots \quad (3)$$

$$\text{Log } LA = -2.70 + 1.19^{*} \ \log GI$$
$$(6.40)$$

$$\bar{R}^2 = 0.773 \quad \ldots \quad \ldots \quad (4)$$

In the linear specification, the income elasticity is 1.13 as against 1.19 in the log equation which is slightly higher. The relationship that may be visualised for the urban sector, as a residual of the results obtaining at the aggregate and the rural level, is that there is a sufficient reason to believe that, in the urban sector, GI could be positively related to LA.

4.15 Net Income Effect - All Activities (Rural and Urban)

Equations (5 and 6), produced below, examining LA in relation to NI indicates that the results derived are virtually identical between the linear and double log specifications. Here, LA is positively related to NI generated by the beneficiaries out of the assets created by the loan.

$$LA = -2488.64 + \underset{(6.38)}{1.13^{*}}\ NI$$

$$\text{Elasticity} = (1.0539)$$

$$\bar{R}^2 = 0.705 \quad \ldots \quad \ldots \quad (5)$$

$$\text{Log } LA = -6.65 + \underset{(6.65)}{0.99^{*}}\ \text{Log } NI$$

$$\bar{R}^2 = 0.705 \quad \ldots \quad \ldots \quad (6)$$

4.16 Rural Activities

For the rural sector, the relationship between the LA in relation to NI appears to be as significant as it is found in all activities taken together. Equations (7 and 8) produced below examine this relationship.

$$LA = 4017.14 + \underset{(4.49)}{1.01^{*}}\ NI$$

$$\text{Elasticity} = (0.9195)$$

$$\bar{R}^2 = 0.627 \quad \ldots \quad \ldots \quad (7)$$

$$\text{Log } LA = 1.95 + \underset{(5.25)}{0.82^{*}}\ \log NI$$

$$\bar{R}^2 = 0.697 \quad \ldots \quad \ldots \quad (8)$$

Therefore, the conclusion that can be drawn is that we may visualise the same relationship for the urban sector, as it is found at the aggregate and at the rural levels.

DIS-AGGREGATIVE PICTURE - GROSS AND NET INCOME EFFECT (INITIAL AND TERMINAL YEAR)

INCOME EFFECT (DIS-AGGREGATIVE LEVEL)

4.17 Gross Income - Effect
All Activities (Rural and Urban)

Year 1978 :

$$LA = \underset{(0.67)}{1727.48} + \underset{(7.63)}{0.44^*}\ GI$$

Elasticity = (0.8693)

$$\bar{R}^2 = 0.760 \quad \ldots \quad \ldots \quad (9)$$

Year 1981 :

$$LA = \underset{(1.06)}{773.24} + \underset{(28.68)}{0.62^*}\ GI$$

Elasticity = (0.9095)

$$\bar{R}^2 = 0.979 \quad \ldots \quad \ldots \quad (10)$$

The above equations (9 and 10) reveal that the elasticity for GI has marginally improved over the period. The overall fitting of the equation has also improved in 1981 over 1978. The rise in the income elasticity of the loan amount implies the gradual increase in the gross income over a period of time out of the assets created by the loan has been relatively less probably due to the fall in the net investible resources available for productive investment. This conclusion also re-affirms the observations that the cost elements borne by the beneficiaries should be taken into consideration by the financing institutions in deciding the loan amount to be disbursed under this scheme.

4.18 Net Income Effect - All Activities (Rural and Urban)

Year 1978 :

$$LA = \underset{(0.57)}{1334.45} + \underset{(8.54)}{0.91^{*}}\ NI$$

Elasticity = (0.8990)

$$\bar{R}^2 = 0.99 \quad \ldots \quad \ldots \quad (11)$$

Year 1981 :

$$LA = \underset{(2.23)}{2718.08} + \underset{(16.48)}{0.85^{*}}\ NI$$

Elasticity = (0.6819)

$$\bar{R}^2 = 0.937 \quad \ldots \quad \ldots \quad (12)$$

The results obtained from the estimated equations (11 and 12) given above reveal that the net income over the period of year remains to be significant explanatory variable of the loan amount. However, it is to be pointed out that the net income elasticity of the loan amount has declined over the period of time. Therefore, in order to improve the present rate of net income, the financing institutions should increase the loan amount disbursed under the scheme.

EMPLOYMENT EFFECT

Employment Generation

4.19 Although one of the conditions laid down under the scheme has been that the beneficiaries should not employ outsiders on a regular basis, our field survey reveals that some beneficiaries were required to employ outsiders to support their activities, both in the urban as well as in the rural sectors. Data provided in Table 4-9 indicate that the extent of employment generation in the urban sector (Table 4-10) was to the level of 95.5 man-days whereas in the rural sector (Table 4-11) it was for 247 man days. These together indicate that the extent of total employment generated was to the tune of 342.5 man days at the aggregate level. It may be further pointed out that out of 342.5, 181 persons were unemployed previously got gainfully employed under the scheme. Analysis of data furtner indicates that the persons employed from outside in the total employment generated represented about 19 per cent. In can be further observed from Table 4-9 that the extent of employment generated for the family members has been a little higher at 28 per cent of the total employment generated. The larger percentage of almost 53 per cent were the real gainers due to lending

TABLE 4-9

EXTENT OF EMPLOYMENT GENERATED

Heads	Urban Sector	Rural Sector	Aggregate	Percentage to total
	Man days generated	Man days generated	Man days generated	
1. Full-Time (Outsiders)	44	10	54	15.77
2. Part-Time (Outsiders)	7.4	3	10.5	3.06
3. Full-Time (Family Members)	3	7	70	20.44
4. Part-Time (Family Members)	11	16	27	7.88
5. Self-Employed	30	151	181	52.85
Total	95.5	247	342.5	100.00

under the DRI scheme since they could now pursue productive economic activity independently. The employment effect has

TABLE 4-10

GENERATION OF EMPLOYMENT IN URBAN SECTOR - ACTIVITY-WISE

Heads	(I) Tailoring	(II) Vending Cloth	(III) Vending Glass-wares	(IV) Vending Fruits & Vege-tables	(V) Miscella-neous Group	(VI) All Activities
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. Full-Time (Outsiders)	4 (32)	35 (280)	Nil (Nil)	Nil (Nil)	5 (40)	44 (35[illegible])
2. Part-Time (Outsiders)	Nil (Nil)	12 (48)	Nil (Nil)	Nil (Nil)	3 (12)	15 (60)
3. Full-Time (Family Members)	Nil (Nil)	3 (24)	Nil (Nil)	Nil (Nil)	Nil (Nil)	3 (24)
4. Part-Time (Family Members)	5 (20)	13 (52)	Nil (Nil)	2 (16)	Nil (Nil)	20 (88)
5. Self-Employed	3 (24)	18 (144)	1 (8)	Nil (Nil)	8 (64)	30 (240)
6. Total Sample	18	128	5	6	33	190
7. Beneficiaries indicated about Employment	12	81	1	2	16	112
8. Total Number of Hours Generated	(76)	(548)	(8)	(16)	(116)	(764)
9. Total Man Days Generated	9.50	68.50	1	2	14.5	95.5

Footnotes: (i) For Full-time work 8 hours per day and for Part-time 4 hours a day and Self-employed 8 hours a day has been assumed.

(ii) Figures in brackets indicated total hours generated.

TABLE 4-11

GENERATION OF EMPLOYMENT IN RURAL SECTOR - ACTIVITY-WISE

Heads	(I) Agri-cul-ture	(II) Hand-loom Wea-ving	(III) Fi-shery	(IV) Dairy	(V) Sheep Rea-ring	(VI) Bas-ket Wea-ving	(VII) Lea-ther Work	(VIII) Ven-ding Cut-lery	(IX) Pan Bidi Shop	(X) Retail Trade	(XI) Pum-sets (far-ming)	(XII) Cycle Rick-shaw Pull-ing	(XIII) Camel Cart Pull-ing	(XIV) Bull-ocks (Far-ming	(XV) All Activi-ties
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
1. Full-Time (Outsiders)	Nil (Nil)	2 (16)	Nil (Nil)	3 (24)	Nil (Nil)	Nil (Nil)	Nil (Nil)	Nil (Nil)	Nil (Nil)	1 (8)	Nil (Nil)	Nil (Nil)	4 (32)	Nil (Nil)	10 (80)
2. Part-Time (Outsiders)	Nil (Nil)	Nil (Nil)	Nil (Nil)	2 (8)	Nil (Nil)	Nil (Nil)	Nil (Nil)	Nil (Nil)	Nil (Nil)	1 (4)	Nil (Nil)	Nil (Nil)	1 (4)	2 (8)	6 (24)
3. Full-Time (Family Members)	4 (32)	12 (96)	Nil (Nil)	14 (112)	11 (88)	4 (32)	2 (16)	1 (8)	1 (8)	3 (24)	4 (32)	Nil (Nil)	5 (40)	6 (48)	67 (536)
4. Part-Time (Family Members)	12 (48)	6 (24)	Nil (Nil)	5 (20)	Nil (Nil)	Nil (Nil)	2 (8)	Nil (Nil)	1 (4)	1 (4)	4 (16)	1 (4)	Nil (Nil)	Nil (Nil)	32 (128)
5. Self-Employed	Nil (Nil)	15 (120)	35 (280)	12 (96)	3 (24)	10 (80)	5 (40)	9 (72)	5 (40)	15 (120)	Nil (Nil)	22 (176)	20 (160)	Nil (Nil)	151 (1208)
6. Total Sample	41	45	50	62	25	15	22	12	15	33	27	31	45	40	463
7. Beneficiaries Indicated about Employment	16	35	35	36	3	14	9	10	7	21	8	23	30	8	255
8. Total Number of Hours Generated	(80)	(256)	(280)	(260)	(112)	(112)	(64)	(80)	(52)	(160)	(48)	(180)	(236)	(56)	(1976)
9. Total Man Days Generated	10	32	35	32.5	14	14	8	10	6.5	20	6	22.5	29.5	7	247

Footnote: (i) For full-time work 8 hours per day and for part-time work 4 hours a day and for self-employed 8 hours a day has been assumed.
(ii) Figures in brackets indicate hours generated.

been positive in case of the family members who were otherwise unproductively utilised in the households, could now contribute effectively towards the occupations/ activities financed under the scheme.

SOCIAL CHANGE

4.20 Social Impact

The overall impact of the lending under the DRI scheme has also been reflected in the living conditions of the beneficiaries. Data presented in Table 4-12 reveal that in the urban sector, 150 out of 190 beneficiaries indicated change in their social conditions. Similarly, data provided in Table 4-13 further reveal that in the rural sector, 319 out of 463 beneficiaries indicated social change in their living standards. It may be stated that the social change has most prominently occured in respect of better clothing to the family members (19.40 per cent), followed by change in food habits(for better)(16.42 per cent). The third most important basic condition of living is the purchase of utensils for household purposes (14.72 per cent) and the improvement in the housing conditions which has been indicated by 51 out of 469 beneficiaries who responded to our enquiry of a social change as result of income-effect. They represented 10.88 per cent of tne total beneficiaries. The choice for education has been rightly

TABLE 4-12

SOCIAL CHANGE OF URBAN AND RURAL BENEFICIARIES

Social Change	Urban Sector	Rural Sector	Aggregate	Percentage to the total
1. Change of food habits (better food)	28	49	77	16.42
2. Schooling of children and themselves	33	34	67	14.28
3. Better clothing for the family	46	45	91	19.40
4. Purchase/use of Uestensily	9	60	69	14.72
5. Improvement in Housing condition	10	41	51	10.88
6. Repayment of earlier debts	11	39	50	10.66
7. Marriages of sons & daughters	-	26	26	5.54
8. Improvement in social status	13	25	38	8.10
Total	150 (31.98)	319 (68.02)	469 (100.00)	100.00

reflected (14.28 per cent), since education can bring out socio-economic awarness. All these indicators of social change revealed in this study would go a long way to make the positive impact of the lending under the DRI scheme (Table 4-13 and 4-14).

TABLE 4-13

SOCIAL CHANGE OF RURAL BENEFICIARIES

Items of Change	Agri-culture	Hand-loom Weav-ing	Fi-shery	Dairy	Sheep Rea-ring	Bas-ket Wea-ving	Lea-ther Work	Vend-ing for Cut-lery	Pan Bidi Shop	Re-tail Trade	Pump-sets (far-ming)	Cycle Rick-shaw Pull-ing	Camel Cart Pull-ing	Bull-ock (Far-ming)	All Occu-pation
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Change of food habits (Better food)	3	4	9	11	Nil	3	2	Nil	Nil	2	1	Nil	10	4	49 (15.36)
Schooling of children and themselves	3	2	9	9	Nil	Nil	1	Nil	3	Nil	Nil	1	1	5	34 (10.65)
Better clothing for the family	4	7	3	13	1	3	4	5	3	1	Nil	Nil	1	Nil	45 (15.36)
Purchase of the utensils	5	8	9	2	1	3	2	5	Nil	7	1	9	7	1	60 (18.80)
Improvements in housing condition	7	5	Nil	5	Nil	Nil	Nil	Nil	Nil	9	2	2	7	4	41 (12.85)
Repayment of earlier debts	2	3	3	2	3	Nil	Nil	Nil	Nil	2	5	7	3	9	39 (12.22)
Marriages of Son and Daughters	2	4	Nil	2	1	Nil	Nil	Nil	Nil	3	7	2	5	Nil	26 (8.15)
Improvements in social status	5	2	7	8	1	Nil	Nil	Nil	Nil	Nil	Nil	Nil	1	1	25 (7.83)
Total	31 41 76	35 45 78	40 50 80	52 62 84	7 15 47	9 15 60	9 22 41	10 12 83	6 15 40	24 33 73	16 27 59	21 31 70	35 45 78	24 40 60	319 453 69

Footnote: (i) Figures in brackets indicate percentages to the total sample.
(ii) Figures underlined is the sample selected for the study.

TABLE 4-14

SOCIAL CHANGE OF URBAN BENEFICIARIES - ACTIVITY-WISE

Items of Change	(I) Tailoring	(II) Vending Cloth	(III) Vending Glass-wares	(IV) Vending Fruits & Vege-tables	(V) Miscellaneous Group	(VI) All Activities
1. Change of food habits (Better food)	5	17	Nil	2	4	28 (18.66)
2. Schooling to Children and themselves	4	22	1	2	4	33 (22.00)
3. Better Clothing to family members	3	40	Nil	2	1	46 (30.66)
4. Purchase of Utensils	1	8	Nil	Nil	Nil	9 (6.00)
5. Improvement in housing conditions	Nil	7	Nil	Nil	3	10 (6.66)
6. Improvements in Social Status	Nil	10	Nil	Nil	3	13 (8.66)
7. Marriages of daughters & Sons	Nil	Nil	Nil	Nil	Nil	Nil (Nil)
8. Repayment of earlier debts	1	5	Nil	Nil	5	11 (7.33)
9. Total	14 18 (77.77)	109 128 (85.15)	1 5 (20)	6 6 (100)	20 33 (60.60)	150 190 (78.94)

Footnote: Figures in brackets indicate percentages to the total sample.
Figures underlined indicate the sample under each activity.

Main Findings And Policy Implications

I. Net Income Effect

1. Individual Beneficiary Level

The analysis of gross income as well as net income at the individual beneficiary level indicates that the majority of beneficiaries had positive income effect. The examination of net income effect at the individual beneficiary level reveals that the average net income derived per beneficiary has been at Rs 1250. For the urban activities, the net income estimated at Rs 954 per beneficiary whereas in the rural activities, the net income derived has been Rs 1372 per beneficiary which was higher by 30 per cent over the urban activities. Further analysis indicates that only about 8 per cent of the total sample had net negative income effect which was on account of personal/occupational difficulties faced by them.

Thus, our hypothesis that the net income effect at the individual beneficiary level is positive has been sustained.

2. Activity Level

The analysis of gross as well as net income in each activity indicates that there was a positive income effect in all the activities. In the rural sector, the net income derived per beneficiary varied from Rs 186 under retail trade to Rs 2346 per

per beneficiary under pumpsets (farming). In the urban sector, the net income derived per beneficiary varied from Rs 680 for vending cloth to Rs 2750 for vending glass wares. Only 37 beneficiaries engaged in rural activities and 11 beneficiaries in urban activities, had a net negative income which represents only 8 and 6 per cent respectively of the total samples covered in each of the activities. This is just a small proportion of the total sample selected under each activity.

Thus, our hypothesis that the net income effect for each activity is positive, has been sustained.

3. Aggregative level

The data reveals that the net incremental income at the aggregative level at Rs 5,34,419 indicates 190 per cent increase over the pre-DRI loan income level. At the aggregate level for an average loan of Rs 1343 per beneficiary the average net income derived has been Rs 1250 per beneficiary which indicates that the generation capacity of net income is just over 93 per cent for the average loan. This is quite substantial considering the low scale of capital base as well as the low level of economic activities pursued by the beneficiaries.

Thus, our hypothesis that the net income effect at the aggregate level for all activities is positive, has been sustained.

II. Employment Effect

1. Activity level

Data reveal that at the individual occupational level there was a net positive generation of employment either for the beneficiary family members or for others. The man-days of work generated for the rural activities varied from 7 days to 35 days. For the urban activities, the man-days generated varied from 1 to 68.50, depending upon the hours generated in each activity.

Thus, our hypothesis that the employment effect at the individual occupational level is positive, has been sustained.

2. Aggregative level

The analysis reveals that the total man-days generated for the rural activities has been 247 and for the urban activities 95.5 which together amounts to 342.5 man-days at the aggregate level. Further analysis indicates that out of 342.5 man-days generated 52.85 man-days were generated by the beneficiaries who were previously unemployed themselves and this is a positive contribution of the lending under DRI scheme.

Thus, our hypothesis that the employment effect at the aggregative level of all occupations is positive, has been sustained.

Social Change Effect

1. Individual beneficiary level

About 32 per cent of the total beneficiaries (150 out of 190) engaged in the urban activities and 68 per cent of the total beneficiaries (319 out of 463) engaged in the rural activity, indicated a social change in response to our indicators framed, namely, change of food habits, schooling to children and themselves, better clothing, purchases of utensils, improvement in housing conditions, repayment of earlier debts, marriages of sons and daughters, and finally improvement in social status. In view of partial response received to these indicators by some of the beneficiaries, we are unable to assess completely the social change that has occured during the post DRI scheme period. However, from the response received from some beneficiaries and the observations of the field survey, a positive social change effect appears to be there.

Thus, our hypothesis that social change effect on individual beneficiarylevel is positive has been partially sustained. This is because all the selected beneficiaries did not respond to our enquiry of social change during the survey. This can be interpreted that at every individual beneficiarylevel positive social change effect does not appear to be there.

2. Aggregative level

Analysis of data on social change that has been witnessed, both in the rural as well as in the urban sectors covered by the study indicates that 17 per cent of the total sample responded that there was a change of food habits for the better; 14 per cent of the total sample responded indicated that they sent their children to school and they themselves also attended the night schools; 19 per cent of the total sample responded that they had better clothing than before; 14 per cent of the total sample responded indicating that they carried out improvement to their housing conditions to make it a better shelter; 10 per cent paid out earlier debts out of net income generated; 5 per cent could perform marriages of their sons and daughters and some 8 per cent reported that during the post DRI loan period as a result of increase in their level of income position there was improvement in their social status in the community.

Thus, our hypothesis that social change effect on the beneficiaries of all the occupations at the aggregative level is positive, has been sustained.