CHAPTER-I

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Irrigation plays a vital role in agricultural development of an economy. Adequate and assured irrigation helps in optimum use of improved and high yielding seeds, chemical fertilisers and other associated inputs, leading to higher productivity in agriculture. This strategic input is instrumental in shifting the input combination from one pattern to another and serves as an intermediary for shifting the production function in one phase to another with higher productivity\(^1\). But this vital input is not available to seventy percent of the net cropped area in India\(^2\). The unirrigated lands are to depend exclusively upon rainfall, which is not only undependable and erratic but also inadequate even for the main crops, in most of the years.

The position of Orissa, so far as irrigation is concerned, is still worse. The potential command area of all sources of irrigation in Orissa, can cover hardly


20 percent of the net cropped area and the rest have to depend solely on irregular and erratic rainfall which is, in most of the years, below normal. Some of the districts receive precipitation much below the average rainfall of the State resulting in severe drought condition.

Non-availability of irrigation water, erratic and irregular rainfall, have helped in perpetuation of the traditional agriculture with very low productivity and low income. Mainly due to this, among the Indian States, Orissa has got the highest percentage of its population below the poverty line.


5. Bardhan has shown that Orissa has got the highest percentage of its population below the poverty line, See Pranab Bardhan: 'Variation in Agricultural Wages- A Note', Economic and Political Weekly Vol. III, No. 21, May, 1973.
The small and marginal farmers and the agricultural labourers remained unequal partners in the prosperity that agriculture witnessed in the late sixties due to 'Green Revolution'. The development of agriculture which had aimed at increasing the production substantially through sizeable capital investments, was highly dependent on the economic capacity of the farmers and the degree of their responsiveness to the call of modern agriculture. The problem was engaging the attention of the Government of India. After careful consideration, it innovated institutions like Small Farmers Development Agency (SFDA) and Marginal and Agricultural Labourers Development Agency (MFAL), to focus its attention on the presently non-viable but potentially viable farmers, to raise the standard of subsistence farming to commercial farming with support of easy credit from the institutional agencies and subsidies from the Projects. The Government of India allotted three SFDA projects to Orissa, Ganjam being one of them.

Ganjam, one of the southern districts of Orissa, lying between 18°46' and 20°18' North latitudes and between 83°43' and 85°11' Eastern longitudes, receives the lowest rainfall in the State. The behaviour of the rainfall is highly irregular and in many years below the average rainfall of the State. The average rainfall for the five months in which the rainfall is concentrated is 40.31 with a standard deviation of 10.85. There is also wide discrepancy in the
AVERAGE RAINFALL IN GANJAM DISTRICT.
(From June to October)
inter-month requirement and availability of water for the main crop, paddy for its normal raising. As the area that can be covered through surface irrigation is limited, there is quest for ground water.

In Ganjam 73.53 percent of the total workers directly depend on agriculture, 41.42 percent being cultivators and the rest agricultural labourers. But 86.94 percent of the cultivators operate land below five acres and area cultivated by them constitute only 51.90 percent of the total cultivated area. The holdings are highly fragmented and scattered and on an average, area per fragment is only 0.58 acre leading to difficulties in economic use of modern inputs. There is no scope within agriculture to recover a part of the loss incurred in frequent droughts in Kharif as Rabi irrigation is available only to 4 percent of the net area shown in Rabi and dry lands mainly depend on the vagaries of nature and grow a few low valued pulses having a very low yield and most of the times result in a negative return. Consequently, the net return from traditional agriculture is very low. The small and marginal farmers have to try off farm activity during the agriculturally lean season.

6. See Graphs 1.2 through 1.6.
8. See Appendix Table No. 1.1
9. Bureau of Statistics and Economics: Benchmark Survey SPDA, Ganjam, 1972. Though the average is 0.58 acre, some the fragments are much smaller than this, which prevents the use of modern inputs like tractors and modern equipments of irrigation like private tube wells, pump sets etc.
10. Irrigation Data, op. cit., p. 4.
RAINFALL IN INCHES FOR THE MONTH OF JULY IN GANJAM DIST.

RAINFALL IN INCHES FOR THE MONTH OF JUNE IN GANJAM DIST.

Dotted line represents the water requirement for paddy.
Bold line represents actual rainfall.
RAINFALL IN INCHES FOR THE MONTH OF AUGUST
IN GANJAM DIST.
FIG. 1.5

RAINFALL IN INCHES FOR THE MONTH OF SEPT. IN GANJAM DIST.
RAINFALL IN INCHES FOR THE MONTH OCTOBER IN GANJAM DIST.
However, since the availability of off season employment is only for a few days and highly uncertain, income from this source is also very low and the per capita income of the small and marginal farmers, is below the poverty line income level.

In order to alleviate the sufferings of the small farmers and improve their economic condition, the SFDA, Ganjam took up a number of programmes. Dugwell (open irrigation well) Scheme being one of the most important schemes under the Minor Irrigation Programme. This project has the distinction of having the first position in India so far as the dugwell scheme is concerned. Large scale digging of the wells started since 1972-73. The Berhampur Cooperative Central Bank and the Aska Co-operative Central Bank, with their well spread out network of affiliated rural Cooperative Societies took the lead, followed by the commercial and Land Development Banks, in financing the small and marginal farmers for their dugwells.

The SFDA, Ganjam subsidised 25 percent and 33 1/3 percent of the loans for dugwells, advanced to the small and marginal farmers respectively, from the funds provided by the Government of India. The Government of Orissa, in order to make the scheme more attractive to the small and

12. See Appendix Table 1.2 for progress of the Dugwell Scheme.
marginal farmers also provided 25 percent further subsidy on the loan amount for wells of both the small and marginal farmers.  

Concerted efforts were made during the Fourth Plan period to increase the area under irrigation. As a result the net area irrigated increased by 68.88 percent from 1972-73 to 1973-74, the rate of increase in case of private sources being 640 percent. Most of this increase in private source was from the dugwell source.

**IMPORTANCE OF THE STUDY:**

1. Many studies have been conducted on surface water irrigation projects and energised ground water irrigation project both in India and in Orissa. In a recent study in Orissa it has been estimated that there can be substantial

13. This scheme is therefore a 'mixed investment' scheme in the same that a part of investment is financed by the Government as subsidy, the rest being financed by the small farmer himself either from loan or from loan and own source.

14. See Appendix Table 1.4

15. A few important works on major irrigation projects in India are:

   N.V. SOVANI and N. RATH: The Economics of a Multipurpose River Dam (Poona 1960);

   K.N. RAJ: Some Economic Aspects of the Bhakra Mangal Project (Delhi 1960);

   K.R. CHOPRA: Dualism and Investment Patterns, Delhi 1972;


   For a bibliography of energised ground water projects see:

gains by providing irrigation water to farmers of Orissa. But there has been no study in Orissa on economics of well irrigation and the studies conducted on well irrigation in India are only a few in number. The distinguished feature of this form of well irrigation is that it is highly labour intensive. Not only wage constitutes a very high proportion of the total investment cost but also the entire operational cost is accounted for by labour. A study on the economics of this labour intensive scheme, therefore, is likely to provide some interesting facts regarding the efficiency of the project.

2. The beneficiaries of the Project are small farmers operating land below five acres and having income below the prescribed minimum poverty level in a poor State of the Indian Union. It was assumed that, 'Assured supply of irrigation water during the dry season (November to June) will enable the farmer to raise one or two additional crops of cereals and vegetables and thereby increase the agricultural production to improve upon the poverty striken conditions ...' The project, therefore, is likely to have significant inter and intra regional income redistribution effects that would not have been possible


through fiscal transfers because of the inherent difficulties. The study is likely to throw some light on the quantum of income distribution to be effected through the project.

3. In underdeveloped agriculture, agricultural labourers remain either unutilised or under-utilised for a long period. Provision for irrigation is likely to increase the employment of agricultural labourers and self-employed family workers. But the question arises: "Is employment a benefit or a cost? On the one hand we seem to be taking for granted that employment creation is a good thing and a cause for rejoicing, while on the other, whenever we come to discuss the prospect of increased employment we rush into doing little sums involving the real cost of labour..."19. Saving (investment) being sub-optimal, there is a premium on it vis-à-vis consumption. A substantial portion of the population being below the poverty line, there is a premium on the consumption of particular classes vis-à-vis the general consumption. A study on the social benefit-cost aspects of the project is likely to bring out some important facts into the limelight, from the point of view of net gains to society.

OBJECTIVES OF THE STUDY:

The study has the following objectives;

1. To find out the commercial profitability of the mixed investment and labour intensive small scale irrigation scheme;

2. to study the factors that affect the commercial profitability of the Scheme;

3. to study the impact of the Scheme with respect to the employment of the target groups, and intra and inter-regional income distribution;

4. to find out the social benefit of the Scheme by following a suitable methodology for the valuation of inputs and outputs and

5. to explore the possibilities of increasing the future benefits of the Scheme.

HYPOTHESES:

The following hypotheses have been taken in the study;

1. The Commercial profitability of the dugwell scheme is high and there are significant inter size group differences in the commercial profitability of the dugwell scheme.

2. The social benefits of the scheme are much higher than the private benefits.

3. The dugwell scheme has significant inter and intra regional redistribution effects.

4. This mixed investment scheme has significant employment generation effects.
METHODOLOGY:

The direct impact of any particular ongoing programme can be judged mainly by two ways: (a) comparing the relevant pre and post project aspects of the beneficiaries of the programme and finding out the difference; and (b) comparing the relevant post project aspects of the beneficiaries of the programme with similar aspects of the non-beneficiaries and observing the difference.

The former presupposes a benchmark survey of the relevant aspects of the beneficiaries immediately before the programme is taken up and a study covering those aspects after the programme has been in operation for a few years, whereas the latter method implicitly assumes that the post project conditions of relevant characteristics of the non-beneficiaries can be taken as the relevant pre-project conditions of such characteristics of the beneficiaries.

In the present case, a benchmark survey was conducted by the Bureau of Statistics and Economics, Orissa. However, it did not cover all the important aspects that we thought relevant for our study. Further, the individual household schedules were not readily available thereby rendering it impossible to contact the selected respondents to compare the pre and post project situations.

Therefore, an alternative was to select the beneficiaries from the selected sample villages having operational holdings below 5 acres, with the assumption that the lands of the beneficiaries and the non-beneficiaries are homogeneous with respect to the type, (eg. high, medium or low) fertility, and experience the same type of climate and rainfall. The advantage of this method is that it takes care of the interaction aspect due to other development programmes associated with the programme under reference.

SELECTION PROCEDURE:

From a list of villages covered by the dugwell scheme, financed by the Central Cooperative Banks during 1973 under different blocks of the Ganjam district, 12 villages were selected by random sampling with probability proportional to the number of wells. From each sample village, 10 well owners were selected by simple random sampling from the list of well owners operating land below 5 acres. In one sample village there were only 9 wells. As one of the well owners could not be contacted because of his long absence from the village, in all 118 well owners were selected.

21. Schemes like assistance for Agricultural inputs under SFDA and other extension programmes have their impacts on both the beneficiaries and the non-beneficiaries of dugwell programme. An assessment of the programme with reference to the benchmark survey would have failed to take into account the contribution of other related but nonetheless important inputs, thereby overestimating the contribution of the dugwell programme.
From each selected village, cultivators operating land below 5 acres, without the facility of well irrigation, were listed and 5 were selected by simple random sampling. So, in all, 60 non-beneficiaries were selected from 12 sample villages.

**DATA:**

Data were collected by interview method from the beneficiaries and non-beneficiaries in respective schedules designed for the purpose. The data on the cost of construction of wells relate to the year 1973. These data were quite reliable as in most of the cases the accounts were maintained by the cultivators.

The data on inputs and outputs were obtained for two agricultural years i.e., 1973-74 and 1974-75, the former a normal rainfall year and the latter a drought year, in four rounds. Visits were made after each season i.e. Kharif and Rabi (including summer), to each of the selected villages to collect data on inputs and outputs. The data for Rabi seasons were only in respect of the well irrigated farms of the beneficiaries and the unirrigated farms of the non-beneficiaries. So far as the Kharif 1974-75 was concerned, the data related to the area

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22. The wells were dug either by the owners by employing persons under their own supervision or given to labour parties, adept in well construction on contract basis for different diameters and depths, the rates varying from one village to the other.
served by the beneficiaries' wells and the unirrigated lands of the non-beneficiaries. As in one of the sample villages, all the beneficiaries and non-beneficiaries got irrigation facilities for their entire land in Kharif, the lands served by supplementary irrigation from the wells of the beneficiaries were taken. This was done with a view to find out the impact of well irrigation as a supplementary source to the inadequate irrigation provided by the flow irrigation in Kharif and to reflect the net benefit due to well irrigation. Since the rainfall in 1973-74 was sufficient for the Kharif crop and well water was not used for raising crops, analysis of data on inputs and outputs was done only for the three seasons viz. Rabi 1973-74, Kharif 1974-75 and Rabi 1974-75. Such data were obtained from the beneficiaries only with respect to crops irrigated from well water. In respect of non-beneficiaries the data were collected for crops grown purely under rainfed conditions, except in one village where all the lands of the beneficiaries and non-beneficiaries were fully irrigated by flow irrigation, during Kharif.

Data on the amount of loans taken and the subsidies received, type and quantities of fertilisers taken from the Co-operatives, were collected from the selected respondents and verified at the primary cooperative society level. The agricultural outputs are evaluated at the average of the wholesale prices prevailing in the nearest wholesale market during the harvest period in 1973-74.
For the purpose of calculation of costs of cultivation, we have mainly adopted the methodology used for the Farm Management Studies. The different concepts of the costs are given below:

Cost A includes (i) value of hired human labour, (ii) value of hired bullock labour or own bullock labour, (iii) value of seed (both farm produced and purchased), (iv) value of pesticides, (v) value of farm yard manures (owned and purchased) and fertilisers, (vi) depreciation (implements and farm buildings) and (vii) interest on working capital. Cost B = Cost A + rental value of owned land + interest on owned fixed capital (excluding land). Cost C = Cost B + Imputed value of family labour

In the cost of cultivation we have not taken into account the cost of investment on wells.

The costs of hired labour have been evaluated at wages prevalent in different seasons for the agricultural year 1972-73. The cost of family labour has been evaluated at the wage rate for the hired labour. In most of the Farm Management Studies, the cost of maintenance along with the depreciation of the value of bullocks is taken for calculation of the total cost and then this is apportioned as between different crops according to the number of pair bullock-days.

23. Government of India, Directorate of Economics and Statistics, Ministry of Food and Agriculture was conducting Farm Management Studies in different selected districts in India.
spent in each crop. Though it is easier to collect data on maintenance of bullocks in cost accounting method (followed in Farm Management Studies) it is difficult to correctly ascertain the maintenance cost by interview method since it is difficult to value the items of consumption of the bullocks at different points of time without any record maintained by the farmers. Therefore, the own bullock labour cost has been evaluated at the hired bullock labour cost of Rs.7.00 per day. While assessing the value of seeds, the prices of different seeds prevalent in the village at the time of sowing are taken into account. The value of fertilisers and pesticides is taken according to their market values. The farm yard manures are evaluated at prices prevalent in villages and where the farm yard manure was applied only for the main crop, its value was taken only for the main crop, though the residual fertility due to its application for the main crop might have helped the subsequent crop to give good yield.

Implement charges have been calculated according to the following procedure. The annual depreciation and the

24. The hired bullock labour cost per day in Ganjam on an average was Rs.10.00, which included the cost of the plough operator. Since the wage rate per day for the plough operator was Rs.3.00 we have taken Rs.7.00 as the pure cost of a pair of bullock labour day. The maintenance cost per working day per pair of bullocks on small farms has been calculated to be Rs.3.00(See Government of India,Directorate of Economics and Statistics, Ministry of Agriculture: Studies in Economics of Farm Management in Cuttack District, Orissa, Report for the year 1967-68 p.66). From local enquiry it was found that the prices of both the draught animals as well as the feed have gone up slightly more than two times since 1968. Therefore, the assumption of Rs.7.00 as bullock labour cost per pair day may not be unreasonable.
interest charges constitute the implement charges. Then this was apportioned in proportion to the bullock labour input in each crop in case of bullock drawn implements and in proportion to the human labour input in each crop in respect of other implements. Wherever the implements like sprayers were hired, the actual hired value was added.

Rents have been calculated on the basis of the actual rents paid in different sample villages. The rental value of own land was evaluated on the assumption of 6 percent interest on the value of land for the year. Different types of land were valued at prices prevailing in the villages. This value was apportioned in proportion to the value of the crop in question to the total value of all crops.

In most of the Farm Management Studies, interests on working capital were not included in the costs. The Standing Technical Committee on Input Index suggested that this item should be included in the cost. Therefore, in this study, a six percent interest has been charged on the working capital expenses for a season. The interest on fixed capital has been charged at 10 percent as per the rates charged by the primary Co-operative during 1973-74.

25. In most Farm Management Studies, this is calculated in proportion to the total cropped area of self cultivated owned land. This procedure has a built in inherent bias against the low valued crops. In fact, value of crops seems to be more appropriate than the acreage under the crop for this purpose. The Directorate of Economics and Statistics, Ministry of Agriculture, Government of India in their D.O. letter No.2-2/75-FB-ES dated 29.5.76 has endorsed the above view.
Following income concepts are used in this study:

a) Farm Business Income (FBI) = Value of output - Cost A
b) Family Labour Income (FLI) = Value of output - Cost B
c) Net Income or Net profit = Value of output - Cost C

The additional benefit of well irrigation has been calculated by multiplying the area under irrigation with the difference between the per acre net benefit in respect of the beneficiaries and the non-beneficiaries.

For commercial benefit-cost analysis, the streams of benefits and costs are needed. As the life of the project lies in future, the reliability of the project analysis depends upon the validity of the assumptions made regarding the benefits and costs streams. For our analysis, as mentioned earlier, data are collected in respect of two years-1973-74 a normal year and 1974-75 a drought year. Since the average of the two years data is not likely to represent the true annual benefits and costs, an alternative approach is to attach probabilities to the additional benefits and costs of the respective years. If the probability of the occurrence of a drought year is P, then the probability of the occurrence of a non-drought year is (1-P). When the values of additional outputs are B₁ and B₂ and additional

26. Excessive rainfall is not likely to bring down the benefits from the well irrigation in Rabi but deficient rainfall is likely to lead to substantial loss. For this reason, we are mainly concerned about the probability of a drought year. In Appendix A we have made an attempt to derive the probability of drought which we have used in this study.
costs of cultivation are $C_1$ and $C_2$ for the respective years, the Annual Additional Benefit, $B_t$, and Additional Annual Cost of cultivation $C_{At}$ are represented by the following equations:

$$B_t = (1-P)B_1 + PB_2$$

$$C_{At} = (1-P)C_1 + PC_2$$

To $C_{At}$ is added the cost of wells including the maintenance, the cost of tenda and the interest paid on investible borrowed funds to make it equal to Additional Annual Cost, $C_t$. The benefit and cost streams for commercial profitability analysis are presented in Chapter IV.

**SELECTION CRITERIA:**

For the purpose of project selection, we have used the following three criteria:

1. **Net Present Value:** The net present value $\phi$ is the present value of net benefits i.e., the annual net benefits discounted at a particular rate of discount. When the net present value (NPV) is positive, the project gets selected. This is represented by:

$$\sum_{t=0}^{T} \frac{B_t - C_t}{(1+r)^t} > 0$$

where, $B_t$ is gross benefit in year $t$, and $C_t$ is the cost in year $t$ and $r$ is the rate of discount, equal to the market interest rate.
2) **Benefit Cost Ratio:** The Benefit Cost Ratio (B/C) represents the ratio of gross benefits to total costs discounted at a particular rate of discount. When this ratio is more than unity, the project gets selected.

This is represented by:

\[
\sum_{t=0}^{T} \frac{B_t}{(1+r)^t} > 1
\]

3. **Internal Rate of Return (IRR):** It is that rate of discount \( R \), at which the net present value becomes equal to zero. The project will be accepted if the \( R \) is greater than \( r \), the market rate of interest. The IRR is represented by

\[
\sum_{t=0}^{T} \frac{B_t - C_t}{(1 + R)^t} = 0
\]

In chapter IV, we will analyse the commercial benefits and costs and try to find out the feasibility of the project from the points of view of the criteria given above.
APPENDIX TABLES

I.1 - I.6
APPENDIX TABLE: I.1

PERCENTAGE OF HOUSEHOLDS ACCORDING TO SIZE GROUP OF HOLDINGS IN GANJAM

<table>
<thead>
<tr>
<th>Size Group</th>
<th>Percentage of Households of the Holding Size</th>
<th>Percentage of Area Cultivated to the Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upto 2.49</td>
<td>65.33 %</td>
<td>86.94 %</td>
</tr>
<tr>
<td>2.50 to 4.99</td>
<td>21.61 %</td>
<td>26.26 %</td>
</tr>
<tr>
<td>Above 4.99</td>
<td>13.06 %</td>
<td>48.10 %</td>
</tr>
</tbody>
</table>

Computed from Bench Mark Survey, SFDA, Ganjam, 1972 p. 69

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APPENDIX TABLE: I.2

PROGRESS OF THE DUGWELL SCHEME IN GANJAM DISTRICT

<table>
<thead>
<tr>
<th>Year</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1971-72</td>
<td>1979</td>
</tr>
<tr>
<td>1972-73</td>
<td>4584</td>
</tr>
<tr>
<td>1973-74</td>
<td>6296</td>
</tr>
<tr>
<td>1974-75</td>
<td>6916</td>
</tr>
</tbody>
</table>

Source: Data obtained from the Department of Agriculture and Cooperation, Government of Orissa.
### APPENDIX TABLE I.3

**EXPENDITURE INCURRED BY SFDA ON DUGWELLS**

<table>
<thead>
<tr>
<th>Year</th>
<th>Expenditure (In Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1971-72</td>
<td>253486.50</td>
</tr>
<tr>
<td>1972-73</td>
<td>1304266.00</td>
</tr>
<tr>
<td>1973-74</td>
<td>2414459.85</td>
</tr>
<tr>
<td>1974-75</td>
<td>769715.82</td>
</tr>
<tr>
<td>1975-76 (upto 31.10.75)</td>
<td>203053.10</td>
</tr>
</tbody>
</table>

Source: Data obtained from the Small Farmers Development Agency, Ganjam.

### APPENDIX TABLE I.4

**SOURCEWISE IRRIGATION IN GANJAM DISTRICT (000 HECTARE)**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Major &amp; Medium</td>
<td>61.09</td>
<td>65.55</td>
<td>62.50</td>
<td>66.37</td>
<td>77.33</td>
<td>83.22</td>
</tr>
<tr>
<td>Minor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Flow</td>
<td>71.44</td>
<td>77.07</td>
<td>75.49</td>
<td>76.23</td>
<td>103.66</td>
<td>108.65</td>
</tr>
<tr>
<td>(b) Lift</td>
<td>2.21</td>
<td>4.41</td>
<td>3.10</td>
<td>6.19</td>
<td>3.26</td>
<td>5.21</td>
</tr>
<tr>
<td>Private</td>
<td>9.46</td>
<td>11.41</td>
<td>9.46</td>
<td>11.44</td>
<td>70.01</td>
<td>74.21 (+64.06%)</td>
</tr>
<tr>
<td>Total:</td>
<td>144.80</td>
<td>158.47</td>
<td>150.55</td>
<td>160.23</td>
<td>254.26</td>
<td>271.29 (68.33%)</td>
</tr>
</tbody>
</table>

Source: Data obtained from the Directorate of Agriculture and Food Production, Orissa.

Note: (Figs. in brackets indicate percentages over the previous year).
### APPENDIX TABLE 1.5

**FRAGMENTATION OF HOLDINGS (IN ACRE)**

<table>
<thead>
<tr>
<th>Category</th>
<th>Area per fragment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small Earners</td>
<td>0.58</td>
</tr>
<tr>
<td>Big Farmers</td>
<td>0.94</td>
</tr>
</tbody>
</table>

Computed from Benchmark Survey, SFDA, Ganjam, 1972, p. 69

### APPENDIX TABLE 1.6

**LOANS ADVANCED TO SMALL AND MARGINAL FARMERS IN ORISSA**

<table>
<thead>
<tr>
<th>Years</th>
<th>Co-operatives</th>
<th>Commercial Banks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Short term</td>
<td>Medium term</td>
</tr>
<tr>
<td>1971-72</td>
<td>9.47</td>
<td>36.45</td>
</tr>
<tr>
<td>1972-73</td>
<td>106.98</td>
<td>85.05</td>
</tr>
<tr>
<td>1973-74</td>
<td>125.04</td>
<td>38.69</td>
</tr>
<tr>
<td>1974-75</td>
<td>171.35</td>
<td>109.58</td>
</tr>
</tbody>
</table>

Source: Data obtained from the Department of Agriculture and Co-operation, Government of Orissa.