Chapter -I
INTRODUCTION

1.1 What the Study is About

India is blessed with vast inland natural water resources. But Indian Economy faces the problem of proper utilisation of these huge water resources spread over its vast stretches of land. A proper policy for the utilisation of these resources would become a governing direction of economic growth. The role of fisheries in the country's economic development is amply evident. It generates employment for a large coastal and other population, raises nutritional standards, increases food supply earns foreign exchange and maintains ecological balance. The present study bears the relevance of resource management and effective utilisation of water resources in the field of pisciculture.

But fisheries were somewhat neglected till the 4th. Five year plan. Realising its importance during the 5th five year plan the Government of India introduced beneficiary-oriented programmes in the form of a pilot project entitled 'Fish Farmers Development Agency' (FFDA) to provide self employment and financial, technical and extension support to fish farming in rural areas. In 1974-75 this programme was further extended under World Bank-assisted, Inland Fisheries Project to 43 potential districts of W.B., Bihar, U.P. and M.P. The number of FFDA increased to cover 108 districts during the 6th five year plan and 200 districts during the 7th five year plan.

The main objectives of the programme of FFDA are as follows:

A. General objectives:

i) Utilisation of available natural resource
ii) Improvement of nutrition.
iii) Contribution to allied industries.
iv) Opportunities for investments.
v) Improvement of national economy through import-substitution and export-promotion.
vi) Improved handling and processing.
vii) Safeguarding the welfare of fishermen.
viii) Diversification of products and markets.
B. Operational objectives:

i) Identification of fish farmers suitable and willing to develop fish farming in ponds,

ii) Arranging training in organized manner.

iii) Ensuring extension services to fish farmers.

iv) Assistance to farmers in obtaining lease of public sector water bodies for undertaking pisciculture.

v) Arrangements for fishing and marketing.

vi) Assistance to farmers in obtaining credit required for pisciculture in accordance with guidelines provided by the FFDA.

1.2 Importance of the Study

Social scientists have always identified the rural areas for investigation. In the case of India too a large number of studies have been carried out in rural situations including panchayats and co-operative societies. Though many research works have been done in the biological and marine sciences the economic investigations of pisciculture have not yet been done so far. In this respect the present study has a clear economic importance for the upliftment of the rural economy at the grass root level.

The state of West Bengal plays an important role for the implementation of the programme. Though the two districts Burdwan and Birbhum of W.B. are primarily agricultural districts there is huge scope for pisciculture. A few studies have been undertaken by several experts, notably, D. Prasad (1968), R. Charan (1981), A.V. Natarajan (1985), K. M. B. Rahim (1992,93), A Chakravorty (1996), I Guha and R. Neogy (1996), P.K. Ghosh (1998) and others on the economic evaluation of pisciculture. Though these are useful guides to researchers, yet there is ample scope for further works relating to pisciculture in the rural areas of W.B. Besides, there is the necessity of developing studies concerning the impact of these programmes on the rural economy. The present study is a modest attempt in remedying this inadequacy.

To initiate corrective measures and successful evaluation of the programme this study has been undertaken to make a comparative study of the functioning of FFDA in the two districts of Burdwan and Birbhum with the following objectives in mind.
1. To estimate the change of productivity of fish farming as an impact of the FFDA programme.

2. To estimate the impact of fish farming on change in fish farmers’ incomes.

3. To find the contribution of FFDA programme in the economic upliftment of the rural economy of these two districts.

4. To estimate the relative loading or weightage of factors of production on fish output.

5. To explain why the fish farmers do not accept the modern techniques of fish farming.

6. To identify the financial and other problems of fish farmers and to provide solutions of such problems.

7. To suggest remedial measures to cover the loopholes in the process of implementation of the programme of FFDA.

8. To estimate the impact of education, caste factor and training on fish farming.

1.3 Methodology of the Study

1.3.1 Selection of Study Area

The present study was confined to survey the rural areas of Burdwan and Birbhum districts of West Bengal in respect of implementation of the programme of Fish Farmers Development Agency (FFDA). In the selection of districts following considerations weighed most.

(i) Both the districts are covered with water areas constituting half of the total inland water resources.

(ii) There is a heavy concentration of tanks and ponds in both the districts.

(iii) Both the districts are considered as having one homogeneous agro-climatic zone in view of the broad similarities of soils, climate and other features. Since they are also neighbouring districts a suitable comparison can easily be made.

(iv) In both the districts, the FFDA programmes are being implemented in full fledged form by the Government authority.
(v) Data from both the districts can be obtained because of personal knowledge of the researcher about the two districts.

1.3.2 Selection of Sample

Keeping in view the time factor, limited fund and limited ability it was not possible to collect data from all the recorded fish farmers of the two districts. At first 5 blocks from each district have been purposefully selected. These blocks are as follows:

<table>
<thead>
<tr>
<th>Burdwan district</th>
<th>Birbhum district</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) Mongalkote</td>
<td>(i) Bolpur-Sriniketan</td>
</tr>
<tr>
<td>(ii) Bhatar</td>
<td>(ii) Khoirasole</td>
</tr>
<tr>
<td>(iii) Galsi-II</td>
<td>(iii) Mohammad Bazar</td>
</tr>
<tr>
<td>(iv) Ausgram-I (Guskara)</td>
<td>(iv) Labpur</td>
</tr>
<tr>
<td>(v) Ausgram-II (Amrargah)</td>
<td>(v) Mayureswar-II (Kotasur)</td>
</tr>
</tbody>
</table>

Then 10 recorded fish farmers from each block have been selected purposefully. Thus 50 fish farmers from each district have been selected for interview. For comparative analysis of data each farmer was taken as the unit. For this study data have been collected on different aspects of the programme such as farmers’ income, water area, finance, total production, product price, cost of production, profit, duration of training period etc. The data have been collected by personal interview method through a questionnaire. Thus the collected data are entirely primary in nature.

1.3.3 Collection of Data

The data were collected during the period of 3 years i.e. from August 1999 to August 2002. A questionnaire was prepared for the collection of desired information from the selected fish farmers of the two districts. The major part of the information was collected by personal interview with fish farmers and the remaining information was collected from the official records of the concerned Blocks. The official records were collected with the help of the Fishery Extension Officer (FEO) of the respective Block where the farmers have registered their names. The FEOs not only supplied official records but also gave some valuable suggestions. Practically, it was impossible to collect data from the fish farmers had the FEOs not extended their help.
Sometimes they opened their offices even on holidays. It was helpful to collect information from the fish farmers while attending the mass gathering meeting; conducted by the FEOs for training, supply of inputs and minikits etc. In some cases the FEOs retained the schedules in their offices and after some days they returned the filled up schedules. Thus for collection of data the FEOs of 10 selected Blocks and the Assistant Director of Fisheries (ADF) of the two districts were directly involved.

Relevant data were also collected from other sources as given below:

(i) Two Meen-Bhavan offices, one at Suri (Birbhum) and other at Burdwan Town.
(ii) Some selected articles of Monthly Magazines like *Fishing Chimes*, *Yojana*, *Kurukshetra* etc.
(iii) *Statistical Abstract*, published by Bureau of Applied Economics and Statistics, Govt. of W.B.
(iv) Key-Statistics of the two districts.
(v) Information and culture office of the Govt. of W.B.
(vi) Different Information and Reports from
   (a) Joint Director of Fisheries, W.B., 60A Colootola Street, Kolkata-73
   (b) The Director of Fisheries, W.B., 8B Lindsay Street, Kolkata-87.
(vii) Different Annual Reports, Journals and Articles related to Fisheries [Agro-Economic Research Centre, Visva-Bharati]
(viii) Central Inland Capture Fisheries Research Institute, (CICFRI), Barrackpore, W.B. etc.

1.3.4 Data Analysis

The data were subjected to statistical analysis. Simple statistical tools i.e. mean, standard deviation, correlation etc. were used for analysing the data. The income earned by the fish farmers before and after the benefits of this scheme, the impact of FFDA on the productivity of water area, difficulties faced by the fish farmers for getting different financial and other assistance from the Government, training facilities etc. were estimated by the tabular analysis. Along with economic factors some non-economic factors like caste, level of education, number of family members etc. have also played an important role in fishery development in both these districts. These factors were also taken into account for detailed analysis. In some
cases to verify the statistical significance of variables and attributes ‘t’ and ‘χ²’- tests have also been used.

1.3.5 Period of study

The study relates to the period 1985-1995. But due to non-availability of data, in a number of cases it was also extended up to 2002. The period of collection of data from the sample fish farmers was from August 1999 to August 2002.

1.3.6 Hypotheses

The following hypotheses have been proposed for the study:

(i) This programme has increased the productivity of water area per bigha.
(ii) There has been faster development of fish farming in Burdwan district than in Birbhum district.
(iii) The programme of FFDA has increased per family and per capita incomes of the fish farmers.

Originally no hypothesis was taken for testing, since the study was of the exploratory in nature. The main objective of the study is to explore different aspects of the programme and point out the different obstacles standing in the way of the implementation of the programme. The study is intended to find out the impact of FFDA in respect of the productivity of water area and income generation of fish farmers. The study also considers problems faced by the fish farmers and suggests remedial measures to overcome these hindrances.

1.4 Limitations of the study

The following are the limitations of the study:

(i) Regarding the change in the level of income before and after the assistance of FFDA, the statements of the fish farmers have been taken into consideration on good faith.
(ii) Due to limited time, ability and resource constraints, data have been collected from a small number of fish farmers of the two districts and results are assumed to be the representative for the district as a whole.
(iii) Due to difficulties in getting responses from the sample fish farmers sometimes we had to rely on the different FEOs' opinions and also on different official records on good faith.

(iv) The observations made on the basis of collected data are obviously particularistic in nature in so far as these data relate to micro-study like the present one (i.e. only 100 fish farmers from the two districts were taken into consideration). Micro-studies do not attempt to build general theories but the utility of this type of study is that a large number micro-studies may, in course of time, be helpful in constructing meaningful generalizations. Moreover, it is an explorative study which seeks to explore the conditions of fish farmers before and after the assistance of FFDA programme. A much larger study may be undertaken to vindicate the results obtained from this explorative study.