

**Completion report on CARITAS-AwF project**

**Empowerment of Women through family based  
Integrated Aquaculture**

**Project Period:** April 2006 to March 2007

**Donor:** Aquaculture without Frontiers

**Implemented By:**

**Caritas Fisheries Program**

1/C, 1/A, Pallabi, Section - 12, Mirpur

Dhaka - 1221

email: [cfp@bangla.net](mailto:cfp@bangla.net)

**June 2007**

**Central Office:**

**Caritas Bangladesh**

2, Outer Circular Road

Shantibagh, Dhaka - 1217

email: [cbgeneral@caritasbd.org](mailto:cbgeneral@caritasbd.org)

web: [www.caritasbd.org](http://www.caritasbd.org)

## **Acknowledgements**

Caritas would like to acknowledge its sincere thanks and gratitude to Dr. M. C. Nandeesh, the Member of the AwF Board of Directors for his concern for the poor rural women, as well as his financial contribution to this project from the honorarium he received for the evaluation of the CBFM project as an AwF representative. Caritas also would like to thank Michael New (OBE), the Chairman of AwF (UK) for his cooperation, logical support and guidance to run the project activities.

## **INTRODUCTION**

Caritas Bangladesh has been working in the fisheries sector for the past two decades in the field of promoting pond based aquaculture. Caritas provides technical support along with financial needs to the beneficiaries. In 1994, a project for open water fisheries management (community based) was introduced for the development of the fishers community. In addition, wetland resource management and the management of environmental degradation in coastal areas through community participation in the southwest zone of Bangladesh was also implemented. In 2005, Dr. M C Nandeesh, a renowned scientist from India and an Aquaculture without Frontiers Volunteer was invited to evaluate a project on “Community Based Fisheries Management (CBFM)”. During the process of evaluation he also observed some of the pond fisheries projects of Caritas Bangladesh and suggested the initiation of women focused aquaculture activities. He also donated the honorarium that he received for evaluating the CBFM project to initiate a small study on the suggested project. Recognising the potential of his idea, Caritas agreed to implement the project.

Bangladesh is an overpopulated , developing country. The people have only small and limited resources for their livelihood. The rural people in particular are disadvantaged and are in a poor socioeconomic condition. Particularly women are deprived and have less opportunities to develop themselves due to cultural and socio-economic conditions. Hence this project aimed at changing the social norms by encouraging the participation of women directly in fish farming activities and thereby improving their socio-economic conditions through family based integrated aquaculture. The project aimed to create awareness of the potential of integrated aquaculture to improve their income, family nutrition and to provide employment opportunities to the whole family, particularly women and children. The beneficiaries were the rural poor women, but having ponds and organized under the Development Extension Education Services (DEEDS) of Caritas Bangladesh. The programme aimed at the effective utility of the available homestead resources and created opportunity for the protection, preservation and responsible management of all available resources. To cover part of the expenses of fish culture, interest free credit support was provided as per the needs, based on the area of the pond as well as the resources available to cover fish culture expenses. .

## **PROJECT WORKING AREA**

Village : 7 (Bholabo, Paiska, Caritaluk, Kuliadi, Kalni, Deboi, Hirnal)  
Union : 2 (Beldi and Bholabo)

Upazila : 1 (Rupganj)  
District : 1 (Narayanganj)

### PROJECT AIM

- Empowerment of women through family based integrated aquaculture and improvement of their livelihood.

### PROJECT OBJECTIVES

- To utilize the unused and under used water and land resources
- To develop aquaculture technology and increase consumption of fish
- To improve economic condition of poor people through fish farming
- Capacity building of women in aquaculture practices

### MATERIALS AND METHODS

A survey was conducted with 35 members; finally, 14 beneficiaries were selected based on the level of poverty, but with a condition that family must own the pond or should have a pond taken on lease basis. Out of the 14 beneficiaries, 13 were women. After the completion of the selection, foundation training on integrated fish culture and management was conducted. During the training, discussion was held on the package programme and the responsibilities of the project holder as well as the role of Caritas. All of the selected beneficiaries received the training including the spouse or the nominated member of the family. A monthly follow up training was also arranged in the implementing area. A Work Assistant was assigned to assist the beneficiaries to run the project smoothly as well as monitoring the project activities.

The beneficiaries were provided with a record book for keeping records of the data of their project activities. The record keeping included pond preparation, fingerling stocking, feeding and harvesting. Finally, the cost benefit analysis was prepared based on this data. Maintained by farmers, but cross verified by the project assistant, these records formed an important source of information.

The average pond size was 20 decimal (one decimal = 40m<sup>2</sup>) with a range of 6 to 78 decimal. The total area covered was 282 decimal. A package of carp culture technology (Indian & Chinese carp) was provided to the beneficiaries, where stocking density was 40 fingerlings per decimal. Finally, a workshop was conducted after the completion of the project.

Net production, mortality rate, specific growth rate and food conversion ratio were obtained from the following formula.

Net production = Final wt. at harvesting – Initial wt. at stocking

Mortality rate (%) =  $\frac{\text{No. of fish at stocking} - \text{No. of fish at harvesting}}{\text{No. of fish at stocking}} \times 100$

## No. of fish at stocking

Actual cost of fish seed, fertilizers and feed were used in the calculation, while the valuation of fish consumed was calculated based on the local market price.

Net profit (Tk.) = Total sale (Tk.) – Total investment (Tk.).

A total of BDT 60,000 (US\$ 882) was provided in interest free loans to the 14 beneficiaries to cover fish culture expenses ranging from BDT 2,000 to 10,000 per individual.

## RESULTS

The project was started in April 2006 and completed in March 2007. After the completion of the one year production cycle, the income derived from fish culture was calculated. The total number of fingerlings stocked and the total number of fish harvested were counted. Based on the recorded observations, total weight of the fish harvested was calculated. Production analysis of fish culture was done at the end of the final harvesting.

An average of 11.95 kg of fish was produced per decimal (which works out to about 2987 kg/ha/year. This is an impressive production, compared to the level of inputs used. The mortality rate was 9.85%.

**Table 1: Details of Stocking and Harvesting**

Sl. #	Name	Water Area (decimal)	Stocking		Harvest		Production Per Dec	Mortality Rate (%)
			No.	Wt (kg)	No.	Wt (kg)		
1	Shahnaj Begum	8	320	11.16	272	110.90	13.86	15.00
2	Gulrahen Begum	8	320	10.44	306	91.60	11.45	4.38
3	Rousonara	10	400	11.80	385	159.00	15.90	3.75
4	Khaleda	9	318	14.92	286	103.00	11.44	10.06
5	Bilatun	78	2,340	120.99	2,129	885.00	11.35	9.02
6	Minara	38	1,520	46.17	1,408	371.20	9.77	7.37
7	Hasnara Begum	19	614	30.49	553	295.75	15.57	9.93
8	Ratua-2	27	1,080	60.84	1,026	350.00	12.96	5.00
9	Ayesa Begum	35	1,350	51.45	1,201	520.00	14.86	11.04
10	Masuda Begum	11	334	17.16	304	87.00	7.91	8.98
11	Hamida Begum	13	520	15.34	320	92.00	7.08	38.46
12	Afia Begum	6	240	7.08	207	42.60	7.10	13.75
13	Amirun Begum	9	320	9.44	303	132.05	14.67	5.31
14	Mahshin Miah	11	410	12.98	395	129.00	11.73	3.66
	<b>Total</b>	<b>282</b>	<b>10,086</b>	<b>420.27</b>	<b>9,095</b>	<b>3,369.10</b>	<b>11.95</b>	<b>9.83</b>

The average expenditure and income per decimal area were BDT 282 and 860, respectively and thus the average net profit for a one decimal area was BDT 578. Fish was the major source of income, though two families also undertook vegetable cultivation and earned some income.

**Table 2: Details of Income and Expenditure**

Sl. #	Name	Water Area (decimal)	Total Expenses	Income				
				Fish	Vegetables	Total	Net Profit	Per decimal
1	Shahnaj Begum	8	3,653	6,920	-	6,920	3,267	865
2	Gulrahen Begum	8	3,131	7,020	700	7,720	4,589	965
3	Rousonara	10	3,100	12,500	-	12,500	9,400	1,250
4	Khaleda	9	4,547	8,350	2,400	10,750	6,203	1,194
5	Bilatun	78	12,296	51,060	-	51,060	38,764	655
6	Minara	38	10,087	28,890	-	28,890	18,803	760
7	Hasnara Begum	19	6,884	26,340	-	26,340	19,456	1,386
8	Ratua-2	27	10,496	31,020	-	31,020	20,524	1,149
9	Ayesa Begum	35	7,954	32,100	-	32,100	24,146	917
10	Masuda Begum	11	5,153	8,320	-	8,320	3,167	756
11	Hamida Begum	13	3,570	4,040	-	4,040	470	311
12	Afia Begum	6	2,046	3,120	-	3,120	1,074	520
13	Amirun Begum	9	3,330	9,437	-	9,437	6,107	1,049
14	Mahshin Miah	11	3,255	10,300	-	10,300	7,045	936
	<b>Total</b>	<b>282</b>	<b>79,502</b>	<b>239,417</b>	<b>3,100</b>	<b>242,517</b>	<b>163,015</b>	<b>860</b>

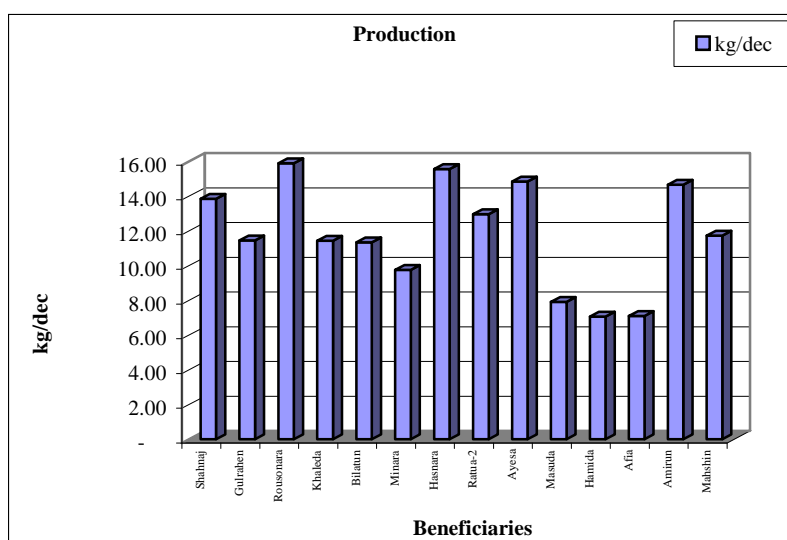
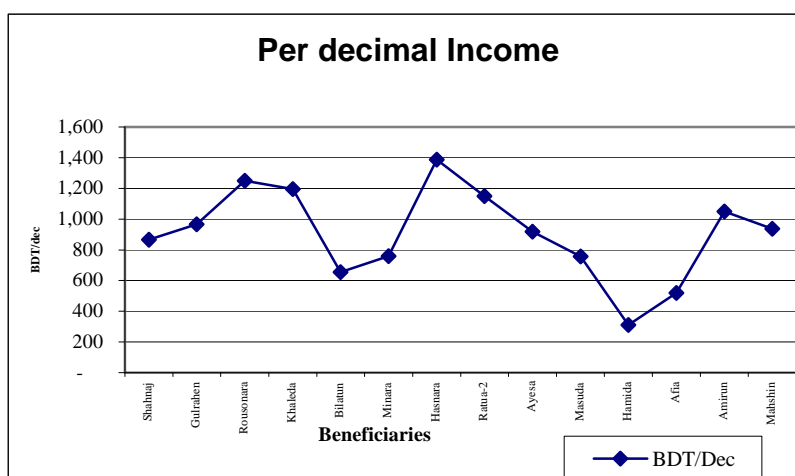


Fig 1: Fish production/decimal obtained by different beneficiaries



## **Fig 2: Income obtained by beneficiaries per decimal**

### **BENEFITS OF THE PROJECT**

- This intervention differed from others in view of the financial support being provided interest free.
- The small-scale fish culture was accepted socially as the source of income and the women could contribute to their family from the income of the project.
- The women members, who had been confined to household activities, were able to manage the new activity by taking care of the regular fertilization and feeding of fish .
- Unlike in the past, where women were not allowed to participate in outside activities, now they were able to participate in workshops and other social events related to projects.
- Women acquired the new skill of growing fish with only limited support from men (in cases where heavy physical labour was involved).
- Family health improved by consuming fish regularly from their own ponds.

### **LIMITATIONS**

The project has some limitations, particularly for women. The women can still not easily take part in the project, due to the socio-cultural system. Women cannot involve in activities that involve physical labour and also they cannot easily go out to market for the purchase of inputs such as lime, fertilizer, feed etc. They also have to depend on the male member of the family for marketing support of products, i.e. the sale of fish, vegetables etc. Absorption of technical details is also a limitation for women due to poor literacy level.

### **RECOMMENDATIONS**

In the completion workshop, the beneficiaries and other stakeholders made the following recommendations:

- Projects should provide at least a two-year support to the beneficiaries to make them technically and financially self-reliant.
- There was a need for training on poultry, livestock, fish diseases and resource management.
- Loan were required for additional income generating activities
- A full time technical Field Worker should be provided.
- Project activities should be expanded to cover more people.

### **CONCLUSIONS**

The project outputs showed an encouraging trend. The beneficiaries also showed their great interest to continue this type of activities. Learning of this short-term project, Caritas would like to continue the support to its beneficiaries to make them strong enough to manage the

fish culture system independently. In addition, there is scope to replicate this initiative with similar efforts in other areas to benefit the people.

## Case Studies:

### Hasnara Begum

**Hasnara Begum** never thought she would earn and contribute to her family by doing some activity like this by herself. She deposited savings regularly and borrowed a loan from Caritas. But when she borrowed her normal loan from Caritas, like other members, she handed over the money to her husband for utilizing in the activities planned by him. During implementation of this project she took out a loan but decided to carry out the activity by herself with the support provided by CARITAS. While her husband provided help in purchasing fingerlings and other inputs like fertilizer and feed, she managed to carry out the routine activity of fertilizing the pond and feeding the fish.

Her family consists of 5 members: a husband, two sons and one daughter. Her husband does small business in the local market and one son and daughter are going to school.

She earned a total of BDT 26,340 (US\$ 387) from this fish culture project, while she spent BDT 6,884 (US\$ 101), thus the net profit she gained was BDT 19,456 (US\$ 286). This is a lot of money for her and she was happy that she could get such a large income by involving herself in this activity. Her two children go to school regularly and she was easily able to cover school expenses from her income. The family also consumed fish from the pond and that helped them to get better nutrition and keep up good health. She expressed her gratitude to Caritas for such kind of contribution, which helped her to make herself confident in managing the project by herself.

### Ratna Begum

**Ratna Begum** is a housewife and she could make a remarkable profit from the fish culture project. When the opportunity came through this project to initiate fish culture, her husband took lease of a pond of 27 decimal close to their house from the community (a pond of graveyard of the community) for BDT 3,000/ year in 2005 for 3 years. She earned a net profit of BDT 20,524, where she spent BDT 10,496 as input cost. Her family is a joint family and consists of 9 members: husband, one daughter, mother-in-law, 4 brother-in-laws and one sister-in-law. Her daughter is 1 year old. Her husband is involved in agriculture through sharecropping and provided help to her in guarding her pond.

From this income she contributed to her family and her contributions were used to buy clothes and food, as well as school and medical expenses, She expressed her thanks to Caritas for showing her the way of earning income by taking up fish culture, which has helped the family in many ways.

Note: Bangladeshi Taka Calculated as **1 US \$ = 68 BDT**



**The package for fish culture:****1. Pond preparation**

Lime 1 kg/dec, Cow dung 6 kg/dec, Urea 300g/dec, TSP 150g/dec, MP 50 g/dec

**2. Stocking density**

Sl. No	<i>Species</i>		Length (Inches)	Stocking density per decimal
	Common name	Scientific Name		
1	Catla	<i>Catla catla</i>	6 - 8	03
2	Silver Carp	<i>Hypophthalmichthys molitrix</i>	6 - 8	12
3	Rohu	<i>Labeo rohita</i>	6 - 8	03
4	Grass Carp	<i>Ctenopharyngodon idella</i>	6 - 8	03
5	Rajpunti	<i>Barbados gonionotus</i>	3 - 5	12
6	Mrigel	<i>Cirrhinus mrigala</i>	6 - 8	03
7	Carpio	<i>Cyprinus carpio</i>	4 - 6	04
	<b>Total</b>			<b>40</b>

**3. Post stocking management:**

- a. Feed: Mustard Oil Cake (MOC) and Rice bran = 1:2, 3 - 5% of body weight daily, applied twice in a day
- b. Cow dung 5 kg/dec fortnightly
- c. Health observation (sampling) once in a month

**4. Harvest and restocking:**

The fish would be harvested partially, when they are marketable size, i.e. 500-1,000 g per piece. The same species and number would be re-stocked after partial harvesting.

**5. Final Harvest & production Analysis:**

Final harvest took place in the end of the project period and the number counted and weighed for analysis.