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INTERNATIONAL FUND FOR AGRICULTURAL DEVELOPMENT
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REPORT AND RECOMMENDATION OF THE PRESIDENT

TO THE EXECUTIVE BOARD ON A PROPOSED LOAN TO

THE PEOPLE'S REPUBLIC OF BANGLADESH

FOR

THE AQUACULTURE DEVELOPMENT PROJECT



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CURRENCY EQUIVALENTS

Currency Unit	=	Bangladesh Taka (BDT)
USD 1.00	=	BDT 44
BDT 1.00	=	USD 0.0227

WEIGHTS AND MEASURES

1 kilogram (kg)	=	2.204 pounds (lb)
1 000 kg	=	1 metric tonne (t)
1 kilometre (km)	=	0.62 miles (mi)
1 metre (m)	=	1.09 yards (yd)
1 square metre (m ²)	=	10.76 square feet (ft ²)
1 acre (ac)	=	0.405 ha
1 hectare (ha)	=	2.47 acres

ABBREVIATIONS AND ACRONYMS

AsDB	Asian Development Bank
AWP/B	Annual Workplan and Budget
BRAC	NGO Bangladesh Rural Advancement Committee
CDG	Community Development Group
DANIDA	Danish International Development Assistance
DCC	District Coordination Committees
DOF	Department of Fisheries
FAO	Food and Agriculture Organization of the United Nations
FFW	Food-for-Work
ICLARM	International Centre for Living Aquatic Resource Management
IDA	International Development Association
IEE	Initial Environmental Evaluation
IGA	Income-Generating Activities
IMSC	Inter-ministerial Steering Committee
LCSs	Labour Contracting Societies
LFG	Lake Fishing Group
LGED	Local Government Engineering Department
MOFL	Ministry of Fisheries and Livestock
MOL	Ministry of Land
NCB	National Commercial Bank
NFMP	New Fisheries Management Policy
NGO	Non-Governmental Organization
ODA	Overseas Development Administration
OLP I	First Oxbow Lakes Project
OLSFP	IFAD Oxbow Lakes Small-Scale Fishermen Project
PAGs	Pond Aquaculture Groups
PCC	Project Coordination Committee
PCD	Project Coordinating Director
PIU	Project Implementation Unit
PKSF	Palli Karma Sahayak Foundation



SAFE	Special Account in Foreign Exchange
SIC	Scheme Implementation Committee
TA	Technical Assistance
TCC	Thana Coordination Committee
TEO	Training and Extension Officer
TFO	Thana Fisheries Officer
TNO	Thana Nirbahi Officer
UNDP	United Nations Development Programme
UNOPS	United Nations Office for Project Services
VIF	Village Improvement Fund
WFP	World Food Programme

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

Fiscal Year

1 July - 30 June



PEOPLE'S REPUBLIC OF BANGLADESH
AQUACULTURE DEVELOPMENT PROJECT

LOAN SUMMARY

INITIATING INSTITUTION:	IFAD
BORROWER:	People's Republic of Bangladesh
EXECUTING AGENCY:	Ministry of Fisheries and Livestock (MOFL)
TOTAL PROJECT COST:	USD 23.77 million
AMOUNT OF IFAD LOAN:	SDR 15 million (equivalent to approximately USD 19.99 million)
TERMS OF IFAD LOAN:	40 years, including a grace period of ten years, with a service charge of three fourths of one per cent (0.75%) per annum
COFINANCIERS:	World Food Programme (WFP)
AMOUNT OF COFINANCING:	USD 1.20 million
TERMS OF COFINANCING:	Grant
CONTRIBUTION OF BORROWER:	USD 2.08 million
CONTRIBUTION OF BENEFICIARIES:	USD 0.50 million
APPRAISING INSTITUTION:	IFAD
COOPERATING INSTITUTION:	United Nations Office for Project Services (UNOPS)



PROJECT BRIEF

- The target group.** The project will target at least 120 000 households (about 600 000 people), mainly fisher families, landless and near-landless, marginal farmers, as well as women-headed households and destitute women, the income level of most of whom is below the poverty line.
- Reasons for poverty** in the project area — as revealed during the participatory workshops — include lack of capital, unavailability of credit, low output prices, low wages and limited employment opportunities. About half of the household income is typically derived from earnings from sharecropping, labour and fishing. Except for those already reached by non-governmental organization (NGO) sensitization programmes, communities (particularly fishing communities) are not organized to assert their rights or contest claims to the use of common resources nor have they the means to negotiate their use or to obtain higher prices for their produce.
- There are about 1.8 million households in the project area, of which 1.2 million (76%) could be classified as IFAD's target group, whose per capita daily intake is below 2 112 calories. Of these, about 426 000 people (27%) are the poorest of the poor, having a per capita daily intake below 1 800 calories.
- Project activities to benefit the target group.** The project is expected to assist the target group to improve their standard of living and the conditions of village life of self-selected communities of fisherfolk and women's groups in the project area; increase output for sale (and access for consumption) of fish; and enhance the sustainability, prosperity and resilience of the target group. To effectively reach the target group, the project will also assist in the establishment of beneficiary groups, training of the beneficiaries, etc., for which suitable NGOs will be selected and mobilized.
- The interventions proposed will focus on approximately 750 ha of baor/beel area and 750 ha of ponds. The project will benefit the population of all 450 villages to be involved in the project, equivalent to 24 220 households (including 9 000 fishermen and fish farmers). In addition, about 10 000 women will benefit from income-generating activities, infrastructure construction and other indirect fishery activities.
- Beneficiary participation.** The project has been formulated taking into account the positive experience of the IFAD-supported projects and by involving the beneficiaries through the holding of design workshops during the formulation stage to ensure that their views are fully considered. The project will select suitable NGOs to be contracted to sensitize rural people, form beneficiary groups and train them to become viable vehicles for effective service delivery to benefit its members. Beneficiary participation will be promoted to identify their needs, prioritize them and take responsibility for their operation. Beneficiaries will also be involved in the identification of potential ponds and waterbodies, and participate fully in the planning and construction of the ponds.



**REPORT AND RECOMMENDATION OF THE PRESIDENT OF IFAD
TO THE EXECUTIVE BOARD ON A PROPOSED LOAN TO
THE PEOPLE'S REPUBLIC OF BANGLADESH
FOR
THE AQUACULTURE DEVELOPMENT PROJECT**

I submit the following Report and Recommendation on a proposed loan to the People's Republic of Bangladesh for SDR 15 million (equivalent to approximately USD 19.99 million) on highly concessional terms to help finance the Aquaculture Development Project. The loan will have a term of 40 years, including a grace period of ten years, with a service charge of three fourths of one per cent (0.75%) per annum. It will be administered by the United Nations Office for Project Services (UNOPS) as IFAD's cooperating institution.

PART I - THE ECONOMY, SECTORAL CONTEXT AND IFAD STRATEGY¹

A. The Economy and Fishery Sector

The Economy

1. Bangladesh lies in the delta of the Brahmaputra-Jamuna, Ganges-Padma and Meghna rivers. Its area totals 147 960 km². Its rich soils and humid climate result in highly fertile and versatile agricultural land. About a third of the land area is flooded for some six months annually by nutrient-rich water, providing an ideal habitat for fish production and renewed supplementary fertility for dry season use. The core inland water area covers 43 377 km² of which 65% is seasonal floodplains; 24% rivers and estuaries, and about 6% (or 266 540 ha) ponds, baors (oxbow lakes) and beels (small lakes or marshes of standing water) — closed waterbodies readily suited to freshwater fish culture. Total population is estimated at about 123 million (1996). Rates of un- and under-employment are high. Many peasant families are landless and depend on labour and sharecropping.

2. Economic growth accelerated in 1990 to 6.6% but slowed down to stabilize at about 4.2–4.5% during 1992–96. Over the last decade, Bangladesh has moved towards a more open, market and private-sector economy. Since the beginning of the 1990s, the Government has intensified its comprehensive economic reform programme to establish a liberalized, market-based and private-sector-led system of economic growth and development. The agricultural sector still dominates the economy, employing 60% of the labour force, contributing 32% of gross domestic product (GDP) and 12% of exports, and providing the raw material for the textile industry which accounts for some 75% of total exports. Within the agricultural sector, crops provide about 79% and livestock, forestry and fisheries about 7% each of the agricultural GDP. GDP per capita is still very low at USD 240 in 1995. Poverty continues to be widespread with more than 50% of the population estimated to be living below the poverty line.

The Inland Fishery Sub-Sector

3. Fish is traditionally the principal source (80%) of animal protein in Bangladesh. However, per capita consumption of fish has declined from about 12 to 7 kg between 1964–69 and 1990, with a heavy negative impact on the protein intake of the rural population.

¹ See Appendix I for additional information.



4. The fishery sub-sector broadly comprises: (i) marine fisheries - industrial trawling and artisanal fishing; and (ii) inland fisheries - consisting of capture fisheries in 4 million ha of open water and culture fisheries in about 290 000 ha of open and closed waterbodies. The latter include large waterbodies such as baors and beels, of an average 50 ha and ponds with an average of 0.1 ha. Inland fishing is more important than marine fishing as it represents some 77% of total catches (53% capture and 24% culture). About two thirds of the fish are wild indigenous species and the rest species of carp. As a result of government encouragement of open water stocking and of improved fish culture management of ponds, beels and baors, inland fisheries output increased by 36% since 1989 while marine production grew only 6% during that period. The subsector contributes about 3% to GDP and over 10% to total export earnings. It provides full- and part-time employment for respectively 1.2 million and 1.4 million people in production, and marketing/processing activities.

5. Extensive polderization for flood control and drainage, siltation, closure/change of course of adjoining rivers and canals, and intensification of diversified agricultural crop production which took no account of the fishery and environment aspects, have resulted in a disconnection of the waterbodies and low flowlands and a reduction in the free flow of water supply which formerly sustained and renewed wild fish stocks. Beels and floodplains have gradually come under aquacultural practices, but fish culture is still relatively primitive, of low technology and limited output and profitability, especially compared to the estimated potential and performance of countries in similar conditions. Due to population pressure and depleting fish resources many traditional fishermen have migrated to urban areas or were forced into landlessness and agricultural labour.

6. Hatchery and fingerling production are carried out mainly by the private sector, and present capacity is adequate to meet current and foreseeable demand. In 1993–94 the private sector produced some 70 000 kg of hatchlings. Shortcomings of present supply are the deteriorating quality of imported exotic carp stocks and inbreeding problems. The replenishment of exotic and local carp with fresh stock should be routine, and fingerling quality should be improved and maintained.

7. Marketing, processing and export are predominately private-sector-operated, and fairly competitive and efficient. There is a vast over-capacity in fish processing, only 65 of the 118 factories (total capacity 156 000 t) being operational, and almost exclusively for shrimp processing. In 1994–95, over 40 000 t of fish and fish products, mainly frozen shrimps valued at USD 310 million were exported.

B. Lessons Learned from Previous IFAD Experience

8. Proposed project design incorporates the lessons learned from the IFAD-supported Oxbow Lakes Small-Scale Fishermen Project (OLSFP), the Country Portfolio Evaluation and experience of other donors, especially with respect to implementation, and specifically: (i) delay and difficulty to establish access and use rights of the waterbodies for a sufficiently long term and at a fair lease fee to ensure their financial viability and attractiveness to the target group; (ii) organizational and social conflict related to the formation and operation of the fishermen groups to ensure efficiency and prevent the emergence of new project “elite”; (iii) limited capacity of the Department of Fisheries (DOF) to undertake civil works and the transfer of these works to the Local Government Engineering Department (LGED) to ensure timely construction and standard quality; (iv) credit availability to beneficiaries, without collateral, is vital to successful implementation either directly or indirectly through intermediaries such as the Palli Karma Sahayak Foundation (PKSF); (v) the number of components and implementing agencies should be limited; (vi) adequate institutional support to ensure efficient and expeditious implementation is needed.

9. Despite these difficulties, OLSFP has provided valuable experience with regard to the methods of mobilizing fishermen and women beneficiaries for extension, and tailoring methods and



themes to suit their specific needs. The NGO Bangladesh Rural Advancement Committee (BRAC) has played a crucial role in sensitizing the target group and their empowerment. The project has also been able to pioneer the methods of waterbody transfer and the development of communal resource management systems which now appear to be reasonably effective and replicable in the new project.

C. IFAD's Strategy for Collaboration with Bangladesh

Bangladesh's Policy for Poverty Eradication

10. In accordance with the 1995-2010 Participatory Plan for Bangladesh, poverty alleviation and employment generation continue to be central objectives of development and public investment. The New Fisheries Management Policy (NFMP), introduced in 1986, aims to: (i) optimize the use of fisheries resources by introducing a system to grant licences to the genuine fishermen; and (ii) engage the fishing community directly in resource exploitation and management. Shortcomings of the NFMP (leasing period, credit availability to fishermen and constraints in transport and marketing of their catch) have been addressed later during implementation of OLSFP by establishing long-term lease agreements, the recent Government withdrawal of the leasing system of open water fisheries in rivers and canals (but not yet closed water) and the involvement of suitable NGOs prepared to support the fishermen's groups in dealing with the authorities. Further, it is expected that the fisheries element of the five-year plan under preparation will incorporate key recommendations, including: cessation of annual and short-term leasing and replacement with leases of at least 7–10 years; urgent action to improve wild carp breeding and fish supply standards; government initiatives to hire or purchase ponds from private owners for lease to genuine fishermen groups; and measures to assure the promotion and dispersion of available aquaculture technology to fish farmers.

The Fishery Development Activities of other Major Donors

11. There are 26 fisheries-related development projects currently under execution by the Ministry of Fisheries and Livestock (MOFL), DOF, LGED and other government departments. In addition to IFAD, main funding agencies include the International Development Association (IDA), the Asian Development Bank (AsDB), the Danish International Development Assistance (DANIDA), the World Food Programme (WFP), the United Nations Development Programme (UNDP), the Overseas Development Administration (ODA) and the Government of The Netherlands. IDA financed various activities and is preparing a fisheries project, expected to be conceived as a national project to address major sector policy issues. The Food and Agriculture Organization of the United Nations (FAO) assisted in studies on fishery development and provided technical assistance (TA) for fisheries-related research. AsDB financed two projects for fish and shrimp aquaculture, the development of public hatcheries, extension and credit. A World Bank project including a fishery development component and mitigation of infrastructure development of fisheries has been cofinanced by IFAD. ODA financed in-country and overseas training for aquaculture and fisheries personnel, and TA, and is also involved in developing a major public hatchery and in technology transfer. DANIDA initially provided TA and then supported activities for the transfer of aquaculture technology to pond fisheries, in organizing fishermen in villages with the help of an NGO and providing essential services. WFP has contributed some 83 000 t of wheat for the development of the fishery sector, mainly for re-excavation or embankment repair of government-owned waterbodies and to NGOs to develop private water resources (fish ponds) for group fish culture.

IFAD's Strategy in Bangladesh

12. Since 1978, IFAD has approved 17 loans for Bangladesh, for a total USD 183.6 million, net of loan cancellations. Ten loans are now closed and two others are expected to close in June 1998. IFAD strategy has focused on two disadvantaged groups of rural poor: (i) the landless, near-landless



and women, covering most of the small-scale fishing population; and (ii) marginal and small farmers, a group which includes a large number of aquaculture households. IFAD has been promoting a beneficiary-driven development approach, through the provision of credit, community development — utilizing the expertise of NGOs — accompanied by institution-building to raise the technical skills of government staff to support beneficiaries.

Project Rationale

13. The rural communities of the eight districts have low family incomes and limited food availability even in normal years. Although about half of household income is typically derived from sharecropping and labour, fishing is an essential activity, the main source of protein. Except for families reached by other projects and NGO activities, most rural families have few alternatives to generate income or food supply. In addition, rural poor, particularly fishing communities, are not sensitized or organized to assert their rights or contest claims to the use of common resources.

14. Living conditions in the project area are rudimentary due to lack of government funding in basic village infrastructure such as water supply, sanitation, etc. Although rural people have developed sound farming, livestock and fishing systems and finely tuned them to the natural conditions, they remain risk-averse and vulnerable to change. Simple and proven interventions, as low-cost as possible, will be promoted to reduce their risk. Research and experience of such techniques exist in Bangladesh and in the region and could be readily applied under the project.

15. There are many large waterbodies and ponds available in the project area to ensure the proper selection and targeting to meet the project's eligibility criteria and to promote the participation of beneficiaries in their selection and implementation. Most of these waterbodies and ponds are used below their potential capacity. To increase their productivity, they will need physical renovation and infrastructure improvement together with the whole range of fish husbandry and management skills of individual fishermen and groups. Waterbodies and ponds tend to become the centre of a wide range of farm, fishing and related and peripheral economic activity, including trading and small industry. Basic infrastructure, such as roads and market centres and better accessibility to these areas, is crucial for sustainable growth. The scope for increased output of fish is matched by a buoyant market demand, and the project area is one of the centres of supply.

PART II - THE PROJECT

A. Project Area and Target Group

16. Selection of the project area was based on: established pond culture activities and existing private sector involvement in production and marketing of fingerlings and fish; availability of still underutilized waterbodies of suitable soil and water quality, and in areas not prone to serious flooding; relatively high demand for fish; and a high proportion of extremely poor households, particularly among the landless and traditional fishing communities.

17. The project area comprises the eight districts of Jessore, Magura, Jhenaidah, Chuadanga, Meherpur, Kushtia, Rajbari and Faridpur, located in the centre/west region, some 160 km southwest of Dhaka. The total area is 12 264 km² and includes most of the larger closed waterbodies (baors and beels) of the country, as well as a high concentration of small fish ponds (some 120 000 and covering 11 000 ha). The area is topographically flat and its lower parts are seasonally flooded to shallow depth. Soil types are very productive and highly favourable for fish culture.



18. The project area comprises some of the country's poorest districts, 49% of households living below the absolute poverty line. Fish is traditionally the principal source (80%) of protein. Villagers throughout the area generally catch fish for home consumption from nearby waterbodies and floodplains. There is a segment of the population whose main occupation is fishing, either as owners or sharecroppers of waterbodies, or labourers or specialized contract harvesters of fish, or fish and fingerling traders. Crop cultivation partially, and fish culture entirely, depend on access to water resources, and seasonal scarcity of water can affect both.

19. Ponds (about 1% of total area), average 0.1 ha in size, ranging from 0.05 ha in Chuadanga, Meherpur and Kushtia to 0.12 ha in Rajbari and Faridpur. The number of ponds is highest in Jessore and Magura (13–14/km²) and lowest in Rajbari and Faridpur (7/km²). It is estimated that about 65% of ponds are under culture but this is increasing as a result of the availability of fingerlings. Productivity is low and there is scope for improvement. A sample survey showed that 72% and 28% of the ponds were owned singly or jointly depending on their size. Multiple ownership by better-off families is common. It was also found that a market is being developed for the lease of large ponds to individuals or groups, mainly on a sharecropping basis with lease periods typically from seven to ten years.

20. Larger closed waterbodies include 115 baors, 356 beels and 326 dead rivers and canal stretches, covering 5 500 ha, 50 320 ha and 42 960 ha respectively. Some waterbodies have been improved by past and on-going projects — the first Oxbow Lakes Project (OLP I), OLSFP, BRAC. Most large closed waterbodies are now cultured but at low productivity. With proper rehabilitation (water structures), longer lease periods and better accessibility, productivity could increase.

21. Although most towns are linked by main and regional roads, their linkage down to thana (sub-district) and village level is poor or non-existent, limiting their accessibility especially during the rainy season. Marketing and processing of agricultural produce and fish are handled by the private sector. Sale or disposal is through the existing marketing system which allows for many intermediaries or middlemen between producer and consumer. In general the market is open, competitive and reasonably fair and efficient, but fishermen have no negotiating power to obtain higher prices for their produce.

22. The Ministry of Land (MOL) is responsible for the administration of government land and waterbodies and for the leasing of the waterbodies over 20 acres for fisheries activities. Under NFMP these waterbodies were to be gradually handed over to MOFL for effective utilization. Their transfer to community groups for a fair lease price and appropriate period has now been accepted by the Government to ensure their viable exploitation and meet government objectives of poverty alleviation. Technical and extension services provided are weak except in areas under project development. Difficult access to credit has induced poor fishermen to intensify production. Following the success of NGOs intermediating credit under IFAD-supported projects, PKSF, National Commercial Banks (NCBs) and the Project Implementation Unit (PIU) will on-lend to NGOs to support productive activities of the target group.

23. The project area has a population of 10.3 million or 1.8 million households, of which 27% are landless and near-landless and 49% marginal and small farmers. The IFAD core target group will be constituted of households living below the absolute poverty line. Women are a separate group, the most disadvantaged, vulnerable and insecure, and women-headed households (about 5%) are the most deprived group even among women.

24. Most of the rural population will benefit directly and indirectly from project activities. On the basis of landholding sizes, the IFAD target group account for about 76% of total households, with core targeting to those engaged directly in fishing and aquaculture estimated at about 50% of the poor



households (landless, women, marginal farmers) located near to project waterbodies. A sample survey found that 63% and 37% were full- and part-time fishermen respectively.

B. Objectives and Scope

25. The main project objectives are to: (i) boost fisheries/aquaculture production and incomes of people living in poverty; (ii) establish/strengthen community organizations to ensure viable and sustainable access of the target group to the productive resources; (iii) improve women's status by specifically targeting pond aquaculture and income-generating activities (IGA); (iv) improve the resource base through the rehabilitation of suitable large waterbodies and fish ponds; and (v) improve access, hence product marketing, to/from rural communities through the improvement of rural roads and growth centres, and create productive physical infrastructure involving local bodies.

26. Following the implementation experience of OLSFP, the project will base all its activities on community participation to ensure their empowerment and accessibility to waterbodies. Their transfer to the poor should be made in such a way so to ensure sustainability and viability. Linkage between these groups and line agencies, the private sector and NGOs will be strengthened to improve transfer of technology and to open supply and market opportunities. Women's participation will be promoted to benefit from project activities. To ensure efficient use of resources and increase productivity credit will have high priority though the involvement of suitable credit channels and NGOs.

C. Components

27. The project will be implemented over a period of seven years and will have the following components: (i) community mobilization and development; (ii) aquaculture development; (iii) community infrastructure; and (iv) project implementation unit (PIU).

Community Mobilization and Development

28. This component will aim to: (i) strengthen the capacity of the resource-poor communities of fisherfolk and other poor and help them establish sustainable rights to exploit waterbodies for fishing; (ii) help them negotiate an equitable benefit-sharing arrangement in fish culture operations; and (iii) ensure their participation in the implementation of project activities including selection of waterbodies, ponds, social infrastructure. NGOs will be contracted for the mobilization of beneficiary groups in the large waterbodies. Small local-level NGOs appear suitable to support pond operations. A total 1 250 beneficiary groups will be established, including 120 lake fishing groups (LFGs), 380 pond aquaculture groups (PAGs), 710 community development groups (CDGs) and 44 labour contracting societies (LCSs) in some 450 project villages. Local NGO staff will be trained and annual participatory workshops organized to ensure that beneficiaries' concerns and priorities are reflected in project planning. To improve living conditions and promote cohesiveness, the project will establish a village improvement fund (VIF) of about USD 2.2 million to finance renovation/extension of schools, health care centres, drinking water supply, earth roads and road structures for village access. Priority will be given to schemes having greater impact on women and children. Finally, to meet the credit requirements to support the aquaculture intensification programme and IGA a credit line of USD 2.7 million will be provided to PKSF, NCBs and the PIU to be on-lent to cooperating NGOs to provide sub-loans to beneficiaries.

Aquaculture Development

29. **Aquaculture productive infrastructure.** The project will finance the rehabilitation of about 750 ha of fish ponds, of which 50% small ponds mainly owned and operated by marginal and small farmers and 50% larger ponds owned by larger landowners under single or multiple ownership which



will be leased to landless/women's groups for production. It is estimated that about 25% will need major rehabilitation while the remaining 75% (some 560 ha) will need around 50 cm deepening and remodelling of the embankment. The ponds works will be executed under LGED supervision, with WFP financing and NGO cooperation for the group working arrangements. The project, in collaboration with beneficiaries, will select government-owned large waterbodies which are accessible and suitable for leasing. The project will support MOL providing survey equipment to map and delineate them with permanent markers. The project will rehabilitate a total 15 baors, beels or dead rivers covering about 750 ha. It is estimated that six of the waterbodies will require major works and nine minor improvements. All schemes will be subject to full feasibility study and environmental assessment. Proposed works will include: (i) construction/improvement of landings and buildings complex; (ii) dewatering of waterbody; (iii) re-excavation to increase the effective production area; (iv) construction of embankment to prevent out-migration of fish and enhance water holding and control capability; (v) construction of water retention structures to increase the year-long production area; (vi) bamboo/permanent screens for the inlets and outlets of the waterbodies; and (vii) upgrading of about 60 km of existing rural road type-1 of earth construction to all-weather conditions and building the necessary structures. The project will support LGED to enable smooth implementation of the proposed civil works.

30. **Aquaculture support services.** The project will support DOF to establish efficient fishermen/fish farmer training, an extension service and adaptive research. To improve the service provided to fishermen and ensure transfer of appropriate technology and production systems, the project will provide training to DOF staff and re-orientate their communication with the beneficiaries, hold participatory workshops to take into account the views of the target group, and undertake the demonstration of appropriate technologies. To identify adaptive research requirements a needs analysis will be undertaken. Beneficiaries-identified research topics will be contracted out to research organizations, the International Centre for Living Aquatic Resource Management (ICLARM) or other body to conduct them over one or two years under farmers' conditions and in cooperation with the aquaculture animator/Thana Fisheries Officer (TFO)/NGO. The results will be assessed in a participatory workshop and released as appropriate for dissemination. The project will also support the provision of high quality broodstock to the DOF.

Community Infrastructure

31. The inadequacy of rural infrastructure has been identified as a brake on economic development in the project area, both with respect to fisheries improvement and to related trade. The project will finance the improvement of basic rural infrastructure such as growth centres, union parishad buildings and similar facilities to combat the isolation and deprivation of communities and lead to social and economic growth in the rural areas. These facilities will be selected by beneficiaries who will contribute to their cost and take over their operation and maintenance. Strict criteria based on rigorous standards of viability and economic returns will be used by LGED to select the schemes. For this purpose, the project will finance: (i) improvement of about 50 km of existing earth approach roads to growth centres by building the necessary structures, including bridges and culverts and upgrading the roads to all-weather condition; (ii) development and improvement of 10 selected growth centres to provide proper marketing facilities including the construction of market sheds, water supply, sanitation and sewerage; (iii) construction of three landing stages to improve input supply and marketing of fish to areas without year-round road access; (iv) construction of 10 union parishad buildings to facilitate community development and strengthen local institutional capacity; and (v) training for LCSs and Scheme Implementation Committees (SICs).

**Project Implementation Unit (PIU)**

32. The project will finance the managerial support required by the project activities which includes the establishment of a PIU at Faridpur. The PIU will be staffed with a Project Coordinating Director (PCD) supported by appropriate staff and TA. For this purpose, project financing will include: (i) rehabilitation/construction of the project offices in Faridpur; (ii) provision of equipment and transport facilities; (iii) funds to undertake a baseline survey, a mid-term review and project completion studies; and (iv) incremental operating costs.

D. Costs and Financing

33. **Project costs.** The total project costs over the seven-year period are estimated at USD 23.77 million, at July 1997 prices and including prices and physical contingencies. Of this, foreign exchange costs represent about 9%. Physical contingencies have been included at 10% for civil works and at 5% for operating costs except for staff salaries. Price contingencies are estimated according to World Bank projections. A cost summary is presented in Table 1.

34. **Project financing.** Table 2 shows the project financing plan. IFAD will finance USD 19.99 million (84%), WFP USD 1.20 million (5%), the Government USD 2.08 million (9%), and the beneficiaries USD 0.50 million (2%). WFP contribution will cover the wheat element (70%) of the Food-for-Work (FFW) programme for earth works. Incremental operating cost, excluding salaries, will be financed by IFAD on a decreasing scale from 90% in year 1 to 0% in year 7.

TABLE 1: SUMMARY OF PROJECT COSTS^a
(USD '000)

Components	Local	Foreign	Total	% of Foreign Exchange	% of Base Costs
A. Community mobilization and development	4 703.5	6.2	4 709.7	-	25
B. Community infrastructure	3 910.4	948.5	4 858.9	20	26
C. Aquaculture development					
1. Aquaculture infrastructure	5 795.4	434.7	6 230.1	7	33
2. Aquaculture services	1 272.9	191.2	1 464.1	13	8
Subtotal Aquaculture development	7 068.3	625.9	7 694.2	8	41
D. Project implementation unit	1 343.5	175.6	1 519.1	12	8
Total base costs	17 025.6	1 756.2	18 781.8	9	100
Physical contingencies	796.0	125.5	921.5	14	5
Price contingencies	3 879.0	186.6	4 065.6	5	22
Total project costs	21 700.6	2 068.3	23 768.9	9	127

^a Discrepancies in totals are due to rounding.

TABLE 2: FINANCING PLAN^a
(USD '000)

Components	IFAD		WFP		Government		Beneficiaries		Total		Foreign Exchange	Local (Excl. Taxes)	Duties and Taxes
	Amt.	%	Amt.	%	Amt.	%	Amt.	%	Amt.	%			
A. Community mobilisation and development	5 345	91.4	-	-	9	0.2	497	8.5	5 851	24.6	7	5 841	3
B. Community infrastructure	5 498	88.4	-	-	722	11.6	-	-	6 219	26.2	1 126	4 754	339
C. Aquaculture development													
1. Aquaculture infrastructure	6 288	77.4	1 204	14.8	631	7.8	-	-	8 123	34.2	519	7 315	290
2. Aquaculture services	1 499	84.7	-	-	271	15.3	-	-	1 769	7.4	220	1 452	97
Subtotal Aquaculture development	7 787	78.7	1 204	12.2	901	9.1	-	-	9 893	41.6	739	8 767	387
D. Project implementation unit	1 358	75.2	-	-	448	24.8	-	-	1 806	7.6	197	1 95	114
Total disbursement	19 988	84.1	1 204	5.1	2 080	8.8	497	2.1	23 769	100.0	2 068	20 858	843

^a Discrepancies in totals are due to rounding.



E. Procurement, Disbursement, Accounts and Audit

35. **Procurement** of goods and services will be in accordance with IFAD Procurement Guidelines. Most items, including vehicles and equipment, are available locally at competitive prices. LGED will contract the construction of civil works to local contractors following local procedures acceptable to IFAD. Excavation, embankments and deweeding will be carried out through force account under the WFP/Food-for-Work (FFW) programme by LCSs and/or by beneficiary groups.

36. **Disbursement, accounts and audit.** The loan will be disbursed for eligible expenditure incurred during the seven-year project period. A special account in foreign exchange (SAFE) will be set up in a bank acceptable to IFAD to facilitate the regular flow of funds. Upon loan effectiveness, IFAD will make an initial deposit of USD 2.0 million corresponding to about six months' requirements. In addition, for the smooth execution of the project, LGED, NCBs, PKSF and the PIU will each establish a special account in BDT. The initial deposit into and replenishment of these two accounts in BDT will be made from the SAFE in accordance with IFAD loan disbursement procedures. All withdrawal applications will be sent through the PIU and a copy retained there. Project accounts will be audited by the Government Auditor. Certified audit reports will be transmitted to IFAD not later than six months after the end of the government's fiscal year. The Auditor's report will include a statement as to the adequacy of the accounting system and internal controls of the different executing agencies, and as to whether IFAD funds have been used for their intended purpose, together with a confirmation that the statement of expenditure (SOE) correctly reflects the expenditures incurred. The closing date of the loan is 30 June 2005.

F. Organization and Management

37. The project will be implemented by district and thana staff with technical support from the line agencies concerned. The MOFL will have overall responsibility for project implementation and its DOF will be lead agency with responsibility for project coordination. A PIU will be established for this task and be headed by a PCD, who will be of a professional level and with qualifications acceptable to IFAD. He will coordinate the activities of all agencies involved in project implementation, including the DOF district fisheries officers, LGED, PKSF, NCBs, PIU, NGOs and private concerns. A monitoring and evaluation cell will be attached to the PIU and be responsible for monitoring all project activities. The PIU will enter into agreement with line agencies and NGOs for the implementation of their respective activities.

38. At central level an **Inter-ministerial Steering Committee (IMSC)** will be established: with the Secretary, MOFL as chairman, DG/DOF as member secretary, the PCD, and representatives from LGED, External Resources Division, MOL, Local Government Division, Planning Commission, Implementation Monitoring and Evaluation Division of the Ministry of Planning, and each credit institution. NGOs and private sector agencies and individuals with relevant expertise to be invited. IMSC will meet twice a year, once in June to review the previous year's progress and approve the next year's annual workplan and budget (AWP/B), and once in December/January to review mid-year progress and deal with any problems which may occur during implementation. Extraordinary sessions of the IMSC will be held to solve any serious issue affecting project implementation. At project area level, a **Project Coordination Committee (PCC)** will be established. Chaired by the PCD, it will comprise the project community services director as secretary, the district heads of DOF and LGED and representatives of the NGOs involved in the community mobilization and development. The PCC will be a working committee and meet bi-monthly at least at the project outset, to discuss project progress, rectify shortcomings, ensure a uniform implementation approach and prepare draft annual workplans for presentation to IMSC.



39. At district level, there will be a **District Coordination Committee (DCC)** in every project district chaired by the Deputy Commissioner and comprising the District Fisheries Officer (DFO) as member-secretary, a representative of PIU, representatives of local government bodies, representatives of all agencies involved in the project, cooperating NGOs and beneficiary groups. DCCs will meet at least four times a year. Its responsibilities will include the preparation of the district AWP/B to be submitted to the PCC, approval and review of quarterly AWP/B and overall coordination of project activities in the respective districts. At thana level there will be a Thana Coordination Committee (TCC) with functions similar to DCC. The TCC will be headed by the Thana Nirbahi Officer (TNO), the TFO acting as member-secretary.

G. Economic Justification

40. The project's community development will benefit some 24 220 households including 9 000 fishermen and fish farmers. Pond fish farming and IGA will strongly involve women and road maintenance will benefit them through the establishment of LCSs (about 3 750, 6 500 and 200 women will benefit respectively from the above activities). Access roads for large waterbodies and other community infrastructure development such as growth centres, link roads, etc., will benefit not only group members but all inhabitants of the 450 project villages with an estimated one third of the population (about 43 300) benefiting directly from this investment.

41. The main quantifiable benefits arising from the project derive from increased carp fish production in 1 500 ha of improved large waterbodies and ponds and the provision of fisheries support services. Many unquantified economic and social benefits will result from project investments. Increased community participation in development on a self-help basis will be promoted. Village Improvement Fund (VIF) will support the beneficiaries' effort to improve living conditions (drinking water supply schemes, sanitation, school and health services). IGA are expected to produce sustainable, positive benefits for the target beneficiaries, in particular women. Roads and market facilities will result in more efficient transport and marketing systems thus reducing input costs and increasing output prices.

42. The project seeks to increase the income of poor fishermen and rural poor. Various aquaculture enterprise budgets and models have been prepared to test the financial viability of the proposals for ponds and large waterbodies and their attractiveness for the fishermen and fish farmers. It appeared clearly that gross margins per hectare are expected to increase by 190%–700% and the incremental return per incremental labour day for both the large waterbodies and ponds range from BDT 70 to 366, well above the prevailing daily wage in agriculture estimated at about BDT 45. Analysis of the labour profile in the enterprise models indicates strongly increased labour requirements ranging from 300% for large waterbodies to more than 700% for fish ponds. Considering the high un- and under-employment in the project area the intensification of fish production provides an excellent opportunity to create financially attractive employment which contributes substantially to the family income.

43. **Impact on women.** Rural women is an important target group although they are not the main players in the fishery sector. The project will establish and strengthen community organizations, including women's groups and improve their status by including them in the project mainstream activity of pond aquaculture and by providing support for IGA. Women's participation and involvement will be promoted and strengthened. In particular, they will: (i) have a strong direct participation in pond aquaculture, estimated at about 30-50% in pond aquaculture groups (PAGs). Experience in WFP-supported pond rehabilitation has shown a considerable eagerness of women to group for this purpose and lease a pond on a long-term basis; (ii) have an even greater involvement in community development groups (CDGs) estimated at some 30-50% as demonstrated by the take-up of



IGA under similar schemes where more than 80% of the loans are provided to women; (iii) provide already the majority input to the LCSs for maintenance of roads and other infrastructure; (iv) be the main target of IGA; and (v) as far as possible schemes with higher impact on women and children, such as water supply and health care, will have priority financing under VIF.

44. **Beneficiary participation.** In addition to the experience of OLSFP and similar projects, the beneficiaries have been widely involved in project design and approach. A socio-economic/fisheries study was undertaken at the earliest stage of project formulation to identify and define possible target groups. A participatory workshop to discuss the proposed project proposals was also organized during appraisal with the active participation of potential beneficiaries and involvement of Government officers and NGO representatives concerned. Beneficiaries' participation is the cornerstone in project implementation starting from the identification of their needs, their prioritization and participation in and contribution to the implementation. To ensure their effective participation: (i) participatory rural appraisal will be undertaken for the selected villages; (ii) an annual participatory workshop for NGO, staff from implementing agencies and beneficiaries will be held in each district; (iii) adequate training in participatory development techniques will be provided to staff concerned; (iv) participatory workshops will be held to identify and discuss research topics and to assess the results before these are released for dissemination; and (v) annual beneficiaries evaluation will assess the impact of the project and propose changes for the next AWP/B.

Economic Analysis

45. The Economic Rate of Return (ERR), over a period of 20 years, is estimated at 12% based on the following assumptions: (i) output and input are valued at market prices after adjustment for taxes; (ii) conversion factors are used to adjust cost of vehicles, operating costs, road maintenance and other domestic services, (iii) opportunity cost of labour estimated at BDT 25/day for unskilled and 80% of its financial value for skilled labour. Sensitivity analysis has been undertaken to assess project viability. It has appeared that benefits are sensitive to changes in fish prices. A 10% increase or decrease will increase ERR to 15% or reduce it to 8.2%. ERR is, however, somewhat less sensitive to fish production operating costs. An increase of 10% in costs will lower the ERR to 9.7% and a decrease of 10% in pond operating costs will increase the ERR to 14%. If all road costs are excluded from the analysis, the rate of return is 13.3%.

H. Risks

46. The major risk is that DOF field staff will be unable or unwilling to implement the participatory approach of the project. They will need to confront the following issues: social conflicts with traditional leaseholders and elite, small local NGO to form PAGs, identification and construction of beels and baors; empowerment of the poor, lease of lakes and transfer of water rights to them; and high turnover of project staff. To minimize these risks, project design incorporates various lessons and approaches to deal with social conflicts by involving strong and well established national NGOs, and provide adequate training and incentives to involve small local NGOs at the village grass-roots level. Assurance has been sought from the Government to transfer the waterbodies to the beneficiaries in good time, agree a fair lease price and give them a long lease period to ensure the viability and sustainability of beneficiaries' commitment. Project senior staff will not be transferred for at least three years.

I. Environmental Impact

47. The general environmental status of the project area is similar to that of much of the low-lying flood plains. There are no major hazards of ecological nature, despite a high human population



density, considerable industrial activity, particularly in the more urbanized areas, and primitive systems of sanitation and waste disposal. The Initial Environmental Evaluation (IEE) Report has identified potential impacts of project-related development works of large waterbodies ranging from social (displacement of population) to bio-physical (decrease in natural open water). To ensure a friendly-environmental implementation and minimize any negative impact, the following will be systematically undertaken: (i) initial screening of proposed waterbodies followed by a full IEE of all pre-selected schemes; (ii) mitigation and compensation measures including displacement minimization and compensation for displaced fishermen, mitigation of social conflicts through a conflict management study and implementation, and mitigation of bio-diversity impacts through a bio-diversity study and implementation at village level; (iii) broadening monitoring to cover a wide range of parameters including *baors*, ecological health and social viability indicators and coordinating between infrastructure and biological monitoring.

PART III - LEGAL INSTRUMENTS AND AUTHORITY

48. A loan agreement between the People's Republic of Bangladesh and IFAD constitutes the legal instrument for extending the proposed loan to the borrower. A summary of the important supplementary assurances included in the negotiated loan agreement is attached as an annex..

49. The People's Republic of Bangladesh is empowered under its laws to borrow from IFAD.

50. I am satisfied that the proposed loan will comply with the Agreement Establishing IFAD.

PART IV - RECOMMENDATION

51. I recommend that the Executive Board approve the proposed loan in terms of the following resolution:

RESOLVED: that the Fund shall make a loan to the People's Republic of Bangladesh in various currencies in an amount equivalent to fifteen million Special Drawing Rights (SDR 15 000 000) to mature on and prior to 1 March 2038 and to bear a service charge of three fourths of one per cent (0.75%) per annum, and to be upon such terms and conditions as shall be substantially in accordance with the terms and conditions presented to the Executive Board in this Report and Recommendation of the President.

Fawzi H. Al-Sultan
President





**SUMMARY OF IMPORTANT SUPPLEMENTARY ASSURANCES
INCLUDED IN THE NEGOTIATED LOAN AGREEMENT**

(Loan Negotiations concluded on 17 April 1998)

1. The Government of Bangladesh (the Government) will make available to the PKSF and/or National Commercial Banks (NCBs) and/or selected NGOs (referred to collectively, as “the Credit Institutions”) the amount allocated to the Incremental Credit Category for the credit line sub-component, together with other funds required for carrying out the credit line sub-component of the project.

2. For the purpose of financing the credit activities under the credit line sub-component of the project, the Government will:

- (a) where the Credit Institution is the PKSF or an NCB, cause such Credit Institution to further on-lend the funds received by it from the proceeds of the loan to NGOs, which NGOs will in turn on-lend the funds to project beneficiaries; and
- (b) where the Credit Institution is an NGO, cause the NGO to on-lend the funds received by it from the proceeds of the loan to project beneficiaries.

3. The Government will cause LGED and PIU to open and thereafter maintain in the same commercial bank, satisfactory to IFAD, two separate project accounts held in local currency. The LGED and PIU will be fully authorized to operate their respective account.

4. The Government will cause each Credit Institution to establish and maintain a revolving fund for the project, in a bank account dedicated to the revolving fund, for keeping therein the principal and interest, net of operating and other expenses, received on the credits made to project beneficiaries from the proceeds of the loan provided for the Incremental Credit Category for the credit line sub-component of the project. Amounts available in the individual revolving funds will be used by the respective Credit Institution for the expansion of credit facilities to the beneficiaries for a period of fifteen (15) years from the date of effectiveness of the loan agreement.

5. During the execution of the project, the Government and IFAD will periodically review the interest rates to be applied to the credits to be made out of the proceeds of the loan. The Government will take appropriate measures in order to harmonize the interest rates on credits with IFAD’s policy on relending rates. In the implementation of the foregoing, the Government will ensure that Credit Institutions will minimize their costs in executing the credit line sub-component of the project as it affects their margin of the interest spread.

6. The Government’s right to make withdrawals from the loan may be suspended, should the following additional event occur:

The Credit By-laws of any Credit Institution, or any provision thereof, shall have been suspended or terminated in whole or in part, or waived, or amended so as to, in the reasonable opinion of the Fund, affect materially and adversely the carrying out of the credit line sub-component of the project or the operation of the facilities completed under the project.



7. The following are specified as additional conditions to loan effectiveness:
 - (a) the Government shall have established an Interministerial Steering Committee whose composition, functions and responsibilities are satisfactory to IFAD;
 - (b) the Government shall have established a PIU and nominated a PCD to head the PIU, which PCD shall have qualifications acceptable to IFAD; and
 - (c) the Government shall have approved the Project Proforma (PPs) for the project, one each for the LGED and DOF, and shall have submitted the PPs to IFAD for its review.
8. No withdrawals from the loan account shall be made in respect of funding for the credit line to individual Credit Institutions under the Incremental Credit Category for the credit line sub-component of the project until such time as the Government shall have concluded with the relevant Credit Institution a credit agreement, satisfactory to IFAD, for that Credit Institution to carry out the credit line sub-component of the project.
9. The Government will ensure that the PCD will be the sole signatory to the Special Account.
10. The Government agrees that funding under the project shall be channelled from the Special Account and project accounts to the line agencies of the Government involved in project implementation on a quarterly basis in accordance with the AWP/B and the contractual arrangements. The Government further agrees that the PCD will scrutinize the activities undertaken by the line departments prior to release of funds from the Special Account and relevant project accounts.
11. The Government will ensure that line departments of the Government involved in project implementation will give priority to project activities.
12. The Government will ensure that the PCD nominated to the post will be a senior officer within the Government of the rank of at least deputy director, and that the PCD will not be reassigned by the Government unless absolutely necessary. The Government further ensures that in the event that it becomes necessary to replace the PCD, his/her replacement will have qualifications satisfactory to IFAD.
13. The Government will ensure that semi-annual reports will be prepared and submitted by the PIU within 45 days after the end of each reporting period to the Government, IFAD and the Cooperating Institution.
14. The Government will ensure that it will hand over large water bodies to be improved under the project from the MOL to DOF within six weeks of submission of requests to do so by the PCD.
15. The Government agrees that it will not impose an automatic increase in lease amounts for large water bodies but rather calculate the increase in lease amounts based on periodic review of costs and profitability.
16. The Government will ensure that in making funds available for on-lending under the credit line sub-component of the project, priority will be given to formal credit channels.



COUNTRY DATA - BANGLADESH

Land area (km² thousand) 1994 1/	130	GNP per capita (USD) 1995 2/	240
Population (million) 1995 1/	120	Average annual real rate of growth of GNP per capita, 1985-95 2/	2.1
Population density (population per km²) 1995 1/	920	Average annual rate of inflation, 1985-95 2/	6.4
Local currency	Taka (BDT)	Exchange rate: USD 1 =	BDT 44
Social Indicators		Economic Indicators	
Population (average annual rate of growth) 1980-95 1/	2.2	GDP (USD million) 1994 1/	29 110
Crude birth rate (per thousand people) 1995 1/	28	Average annual rate of growth of GDP 1/	
Crude death rate (per thousand people) 1995 1/	10	1980-90	4.3
Infant mortality rate (per thousand live births) 1995 1/	79	1990-95	4.1
Life expectancy at birth (years) 1994 3/	56.4	Sectoral distribution of GDP, 1995 1/	
Number of rural poor (million) 1/	46.7	% agriculture	31
Poor as % of total rural population 1/	47.6	% industry	18
Total labour force (million) 1995 1/	60	% manufacturing	10
Female labour force as % of total, 1995 1/	42	% services	52
Education		Consumption, 1995 1/	
Primary school enrolment (% of age group total) 1993 1/	111	Government consumption (as % of GDP)	14
Adult literacy rate (% of total population) 1994 3/	37.3	Private consumption (as % of GDP)	78
Nutrition		Gross domestic savings (as % of GDP)	8
Daily calorie supply per capita, 1992 3/	2 019	Balance of Payments (USD million)	
Index of daily calorie supply per capita (industrial countries=100) 1992 3/	65	Merchandise exports, 1995 1/	3 173
Prevalence of child malnutrition (% of children under 5) 1989-95 1/	84	Merchandise imports, 1995 1/	6 496
Health		Balance of trade	-3 323
People per physician, 1993 1/	12 884	Current account balances (USD million)	
People per nurse, 1993 1/	11 549	before official transfers, 1995 1/	-2 455
Access to safe water (% of population) 1990-96 3/	97	after official transfers, 1995 1/	-1 029
Access to health service (% of population) 1990-95 3/	45	Foreign direct investment, 1995 1/	2
Access to sanitation (% of population) 1990-96 3/	48	Net workers' remittances, 1995 1/	1 198
Agriculture and Food		Income terms of trade (1987=100) 1995 1/	184
Cereal imports (thousands of metric tonnes) 1994 1/	952	Government Finance	
Food imports as percentage of total merchandise imports 1993 1/	15	Overall budget surplus/deficit (as % of GDP) 1994 1/	n.a.
Fertilizer consumption (hundred grams of plant nutrient per arable ha) 1994/95 1/	1 081	Total expenditure (% of GDP) 1994 1/	n.a.
Food production index (1989-91=100) 1995 1/	99	Total external debt (USD million) 1995 1/	16 370
Food aid in cereals (thousands of metric tonnes) 1994-95 1/	888	Total external debt (as % of GNP) 1995 1/	31.5
Land Use		Total debt service (% of exports of goods and services) 1995 1/	13.3
Agricultural land as % of total land area, 1994 1/	79	Nominal lending rate of banks, 1995 1/	14.0
Forest and woodland area (km ² thousand) 1990 1/	8	Nominal deposit rate of banks, 1995 1/	6.0
Forest and woodland area as % of total land area, 1990 1/	6		
Irrigated land as % of arable land, 1994 1/	33.9		

n.a. not available.

Figures in italics indicate data that are for years or periods other than those specified.

1/ World Bank, *World Development Report*, 1997

2/ World Bank, *Atlas*, 1997

3/ UNDP, *Human Development Report*, 1997

Appendix A

PREVIOUS IFAD LOANS IN BANGLADESH

Project Title	Initiating Institution	Cooperating Institution	Lending Terms	Board Approval	Loan Effectiveness	Current Closing Date	Loan/Grant Acronym	Currency	Approved Loan/Grant Amount	Disbursement (as % of approved amount)
Pabna Irrigation and Rural Development	AsDB	AsDB	HC	11 Dec 78	28 May 79	31 Dec 92	L - I - 9 - BAN	USD	30 000 000	100%
Fertilizer Sector Programme	IFAD	World Bank: IDA	HC	19 Dec 79	12 Feb 80	30 Jun 85	L - I - 31 - BA	SDR	19 450 000	91.6%
Small Farmer Agricultural Credit	IFAD	AsDB	HC	16 Sep 80	13 Jan 81	31 Dec 85	G - I - 52 - BA	SDR	180 000	
Small Farmer Agricultural Credit	IFAD	AsDB	HC	16 Sep 80	13 Jan 81	31 Dec 85	L - I - 41 - BA	SDR	17 200 000	100%
Southwest Rural Development	IFAD	World Bank: IDA	HC	08 Sep 81	18 May 82	31 Dec 90	L - I - 73 - BA	SDR	20 450 000	61.8%
North West Rural Development	AsDB	AsDB	hc	09 Dec 82	12 Oct 83	31 Dec 91	L - I - 110 - BA	SDR	13 700 000	21.9%
Small Scale Flood Control, Drainage and Irrigation	IFAD	World Bank: IDA	hc	13 Dec 83	27 Jun 84	30 Jun 93	L - I - 137 - BA	SDR	10 400 000	60.5%
Grameen Bank	IFAD	UNOPS	hc	12 Dec 84	24 Sep 85	31 Dec 90	L - I - 161 - BA	SDR	23 600 000	100%
Marginal and Small Farm Systems Development Crop Intensification	IFAD	UNOPS	hc	02 Dec 86	28 Aug 87	30 Jun 96	L - I - 194 - BA	SDR	8 950 000	52.9%
Oxbow Lakes Small-Scale Fishermen	IFAD	UNOPS	hc	01 Dec 88	20 Oct 89	31 Dec 97	L - I - 237 - BA	SDR	5 600 000	62.1%
Grameen Bank Phase III	IFAD	UNOPS	hc	25 Apr 89	08 Mar 90	30 Jun 95	L - I - 239 - BA	SDR	6 200 000	100%
Smallholder Livestock Development	IFAD	UNOPS	hc	04 Apr 91	14 Dec 91	30 Jun 98	L - I - 280 - BA	SDR	7 650 000	68.8%
Special Assistance for Cyclone Affected Rural Households	IFAD	UNOPS	hc	04 Sep 91	24 Jan 92	30 Jun 98	L - I - 287 - BA	SDR	11 550 000	63.5%
Netrakona Integrated Agricultural Production and Water Management	IFAD	UNOPS	hc	02 Dec 93	08 Jul 94	30 Jun 01	L - I - 343 - BD	SDR	6 400 000	63.0%
Employment-Generation for the Rural Poor	IFAD	UNOPS	hc	12 Apr 95	24 Oct 95	30 Jun 01	G - I - 4 - BD	USD	30 000	90.0%
Employment-Generation for the Rural Poor	IFAD	UNOPS	hc	12 Apr 95	24 Oct 95	30 Jun 01	L - I - 378 - BD	SDR	9 950 000	14.4%
Small-scale Water Resources Development Sector	AsDB	AsDB	hc	06 Dec 95	10 Jun 96	31 Dec 02	G - I - 6 - BD	USD	50 000	98.0%
Small-scale Water Resources Development Sector	AsDB	AsDB	hc	06 Dec 95	10 Jun 96	31 Dec 02	L - I - 391 - BD	SDR	7 000 000	13.6%
Agricultural Diversification and Intensification	IFAD	IFAD	hc	29 Apr 97	04 Dec 97	31 Dec 04	G - I - 29 - BD	USD	50 000	64.1%
Agricultural Diversification and Intensification	IFAD	IFAD	hc	29 Apr 97	04 Dec 97	31 Dec 04	L - I - 443 - BD	SDR	13 650 000	
Third Rural Infrastructure Development	AsDB	AsDB	hc	04 Dec 97		30 Jun 05	G - I - 42 - BD	USD	50 000	
Third Rural Infrastructure Development	AsDB	AsDB	hc	04 Dec 97		30 Jun 05	L - I - 457 - BD	SDR	8 500 000	



Appendix A

LOGICAL FRAMEWORK

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p>GOAL: To improve the standard of living - and conditions of village life - of self-selected communities of fishermen and women groups in eight districts; increase output for sale - and access for consumption - of fish; and enhance the sustainability, prosperity and resilience of the way of life of the target group.</p>	<p>Outputs and sales of fish. Household (HH) income, food self - sufficiency and nutritional status.</p>	<p>Initial baseline survey, records of production and sales and periodic surveys of incomes and HH consumption</p>	<p>Political stability, with effective decentralization. Macro-economic conditions continue to improve. Market liberalization effective.</p>
<p>OBJECTIVES and STRATEGY: Increase the production and sales of fish in a selected number of larger water bodies such as beels, boars and dead rivers through rehabilitation and upgrading, improved stocking and management, consolidation of rights of use, and better organization of fishermen groups. Promote pond aquaculture by poorer sections of the population, in particular women, through rehabilitation of ponds, improved knowledge of breeding techniques, improved stocking and husbandry and better marketing facilities. Undertake improvement of the essential supporting physical infrastructure and village social facilities and amenities. Provide local communities with the organization, training and finance to enable them to plan, execute and manage development activities. Promote a participatory, demand-driven community-based strategy of assisting productive and social sub-projects and programmes, contract social mobilization, technical assistance and extension by NGOs and line agencies, training and institutional development.</p>	<p>Number of HHs reached. Output/sales per HH. Number of NGOs staff operational. Number of communities mobilized. Number of community development initiatives supported and executed.</p> <p>Number of units of infrastructural works and village facilities and amenities completed.</p>	<p>Routine records and surveys as above. Reports of participating NGOs. Reports of LGED and DOF. Annual/bi-annual M&E and other project reports. Mid-term review findings.</p>	<p>Community participation as expected. Full support from the national, district and thana level authorities. Autonomous project management and good coordination and distribution of responsibilities among the different participating agencies. Effective cooperation of the line agencies and NGOs concerned. Stability of non-project income factors, at least until meaningful benefits flow.</p>
<p>OUTPUTS : 1 200 groups organized to manage ponds and larger water bodies and to develop community initiatives such as savings and credit schemes, income generating activities, improved village facilities and amenities and general community development projects. 44 Labour Contracting Societies of landless people, mostly women, organized to</p>	<p>As above, plus: number of groups set up for management of aquaculture. Number of communities engaged in development activities with project</p>	<p>Surveys, records and reports/reports as above, plus: Village, Union Council and District annual plans, budgets and periodic (bi-annual) reports Ad hoc/periodic sub-project and</p>	<p>Active involvement and commitment of the local communities and fishermen through a demand-driven approach. Stability of local law and order. Transfer (long term) of user rights to project beneficiaries on reasonable terms and conditions.</p>





Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p>carry out maintenance of project improved roads.</p> <p>About 15 larger waterbodies of a total of 750 ha rehabilitated, stocked and managed by the groups of fishermen of neighbouring communities resulting in annual production increases from 200/300 kg/ha to 700 kg/ha.</p> <p>About 7 500 ponds totalling 750 ha renovated, better stocked and fed and marketing improved resulting in production increases from 600/800 kg/ha to 3 600 kg/ha.</p> <p>The income and living standards of 9 000 fishing HHs increased by BDT 3 000 to 4 460 for ponds and BDT 9 710 to 10 580 for large water body operators.</p> <p>3 750+ women involved in aquaculture (50% of 7500).</p> <p>50 km of bituminous roads and 60 km of rural roads renovated and improved.</p> <p>Up to 10 growth centres and/or 450 villages provided with essential buildings, facilities and amenities.</p> <p>Effective service provision through Government, NGO and private sector assistance and extension channels and by community self-reliance.</p>	<p>support.</p> <p>Number of ponds and large waterbodies rehabilitated and improved</p> <p>Fish production increases.</p> <p>HH income from sales of fish.</p> <p>HH home consumption of fish.</p> <p>Number of women's groups involved in aquaculture and associated or related income generating activities.</p> <p>Condition of the local road network and of village-level infrastructure.</p>	<p>scheme reports</p> <p>Completion/Evaluation Reports.</p>	<p>Positive reception of the proposed technologies.</p> <p>Existing fishermen groups can be restructured to fully represent the project target group.</p> <p>Improved negotiation power of project beneficiaries to obtain favourable crop sharing agreements.</p> <p>Respect of contract conditions by contractors.</p> <p>Maintenance of roads and other community infrastructure works covered by Government budget.</p> <p>No severe drought, flood, pest occurrence.</p> <p>Effective steering committee direction.</p> <p>Project management/staffing as expected - and performance satisfactory.</p>
<p>INPUTS :</p> <p>(Mainly provided by Contract Services from NGOs and line departments):</p> <p>Community animation and training on community development.</p> <p>Studies for design, feasibility and grant aid for village facilities and amenities.</p> <p>Feasibility studies for large water bodies including environmental assessment;</p> <p>Support for the establishment of fishermen groups and women's groups.</p> <p>Support for the creation of savings and credit schemes and establishment of a credit line for aquaculture inputs and income generated activities.</p> <p>Physical rehabilitation of ponds and larger water bodies through labour intensive works and sub-contracts with private contractors.</p> <p>Technical training and advice on aquaculture and related enterprises.</p> <p>Facilitation/support for the supply of inputs and marketing of fish.</p>	<p>Numbers and targets achieved for materials, vehicles, equipment and staff to be selected, procured on time, supplied, and used/operational.</p> <p>Studies and training completed.</p> <p>Funds released, committed and reimbursed.</p>	<p>As above, plus: project cost and management accounts.</p>	<p>Continuing enthusiasm of beneficiaries.</p> <p>Continuing dedication and conscientious working of management and staff.</p> <p>Effective project management unit, participating agencies and contractor engagement.</p> <p>Non-interference, no distortion from external sources, whether local or national.</p>

Appendix A

Appendix A

COSTS AND FINANCING

Expenditure Accounts by Components - Totals Including Contingencies (USD '000)

	Community Mobilization and Development	Community Infrastructure	Aquaculture Development		Project Implementation Unit	Total
			Aquaculture Infrastructure	Aquaculture Services		
I. Investment Costs						
A. Civil Works						
1. Earthworks	-	-	1 720.5	-	-	1 720.5
2. Other works	-	5 762.8	4 610.7	-	79.5	10 453.0
Subtotal Civil Works	-	5 762.8	6 331.2	-	79.5	12 173.5
B. Village development fund	2 239.8	-	-	-	-	2 239.8
C. Credit line	2 726.0	-	-	-	-	2 726.0
D. Vehicles	-	-	117.1	220.4	116.4	454.0
E. Equipment and materials	6.7	-	52.3	14.0	111.5	184.5
F. Training, study tours and demonstrations	178.2	7.5	5.9	601.3	-	792.8
G. Technical assistance and contract staff	336.5	-	1 041.5	370.4	672.4	2 420.9
H. Contract services	351.8	-	-	-	-	351.8
I. Research and studies	-	-	-	167.2	246.3	413.5
J. Incremental salaries and allowances	-	-	94.3	53.1	33.2	180.6
Total Investment Costs	5 839.1	5 770.3	7 642.2	1 426.4	1 259.3	21 937.4
II. Recurrent Costs						
A. Incremental salaries and allowances	-	-	15.5	-	293.5	309.0
B. Civil works O&M	-	449.2	337.5	-	-	786.7
C. Other operating costs	11.8	-	127.8	343.0	253.2	735.8
Total Recurrent Costs	11.8	449.2	480.8	343.0	546.8	1 831.5
Total PROJECT COSTS	5 850.8	6 219.5	8 123.1	1 769.4	1 806.1	23 768.9
Taxes	2.6	339.3	289.8	97.1	113.9	842.7
Foreign exchange	6.9	1 125.7	518.5	220.3	196.9	2 068.3

5



Disbursement Accounts by Financiers
(USD '000)

	Government		IFAD		WFP		Beneficiaries		Total		For. Exch.	Local (Excl. Taxes)	Duties & Taxes
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%			
1. Earthworks	0	-	516	30.0	1 204	70.0	-	-	1 720	7.2	-	1 720	-
2. Other civil works	567	5.4	9 886	94.6	-	-	-	-	10 453	44.0	1 556	8 330	567
3. Credit	0	-	2 453	90.0	-	-	273	10.0	2 726	11.5	-	2 726	-
4. Village development fund	0	-	2 016	90.0	-	-	224	10.0	2 240	9.4	-	2 240	-
5. Vehicles and equipment	161	25.2	478	74.8	-	-	-	-	638	2.7	236	241	161
6. Training, research, studies and contracts	0	-	1 558	100.0	-	-	-	-	1,558	6.6	71	1 488	-
7. Technical assistance	-	-	2 601	100.0	-	-	-	-	2 601	10.9	-	2 601	-
8. Recurrent costs	1 352	73.8	479	26.2	-	-	-	-	1 832	7.7	206	1 511	115
Total	2 080	8.8	19 988	84.1	1 204	5.1	497	2.1	23 769	100.0	2 068	20 858	843





Appendix A

PROJECT ORGANIZATION AND MANAGEMENT

A. Project Management

1. A PIU, to operate under the auspices of DOF, will be set up in Faridpur. It will be headed by a Project Coordinating Director (PCD), who will report to the DG of DOF. The PCD, preferably of deputy director level, will be nominated by MOFL and have qualifications acceptable to IFAD. Assurance has been obtained during negotiations that the PCD will be sole signatory to the special account in foreign exchange while for one of the two project taka accounts he will sign jointly with the project accountant.

2. The PCD will manage/coordinate project activities through the following key personnel: (i) the project director (PD), appointed by LGED and responsible for implementation of all infrastructure activities (community, aquaculture and other infrastructure; (ii) representatives of credit institutions involved in the project; and (iii) the eight district fisheries officers (DFOs) from the project districts appointed as regional project implementation officers (PIOs); he will assist in the selection of consultancy organizations and NGOs through an invitation, tender and evaluation process. He will also be responsible for overall coordination among various implementing agencies and for the implementation of community development component.

3. The PIU will comprise technical assistance (TA) personnel, contract staff and accounts and administrative staff. The TA personnel will include a part-time international project management advisor, national consultants for community mobilization and development, engineering design and supervision, and short-term specialists for M&E, legal matters, women-in-development (WID) activities and other subjects to be identified during project implementation. Project recruited contract staff will comprise: (i) one aquaculture specialist (AS) to assist the PCD in directing and coordinating fisheries and fish-farming activities; (ii) one training and extension officer (TEO) to develop training programmes and coordinate all training and extension activities; (iii) one aquaculture animator (AqA) per district to support the DFO, organize aquaculture activities and provide technical support to the thana fisheries officers (TFO); (iv) one assistant engineer per district to organize and supervise project infrastructure works; (v) a senior accountant with responsibility for routine accounting and submission of withdrawal applications; and (vi) administrative and secretarial support staff.

4. A monitoring and evaluation (M&E) cell will be attached to the PIU and be responsible for monitoring all project activities. It will include a consultant M&E specialist to be recruited for periodic inputs over the whole project period and one man and one woman monitoring officers.

District Management

5. The District Fisheries Officers (DFOs), will be designated as PIOs and responsible for coordinating all project activities at district level. They will manage in particular all aspects of aquaculture support to the beneficiary groups and in this task they will be supported by the AqAs who will deal with and coordinate all technical aspects of training and technology generation and transfer in their respective area of operation. Infrastructure activities under all components will be managed by the LGED district engineers be supported by contract assistant engineers. The PIOs will: (i) prepare draft AWP/Bs on the basis of workplan proposals of the cooperating NGOs, LGED and the TFOs; (ii) coordinate the NGO/DOF/LGED work programmes; (iii) act as secretary of the DCC;



(iv) supervise DOF staff involved in the execution of the aquaculture services component; (v) procure materials and consumables and pay for O&M of vehicles and equipment; (vi) carry out financial management and accounting and submit timely quarterly budgets and monthly reimbursement requests to the PIU; (vii) supervise the staff training programmes; (viii) supervise the district monitoring; and (ix) submit routine reports.

Thana Level Activities

6. Beneficiaries who will join groups will receive technical/financial/advisory services from the following field workers: (i) NGO group organizers; (ii) TFOs supported by the AQAs; (ii) LGED thana engineers supported by district assistant engineers; and (iii) DAE block supervisors. Responsibilities of the TFOs will include: (i) providing training, advise and demonstrations to the beneficiary groups; (ii) acting as secretary to the TCC; (iii) preparing an annual workplan to be submitted in good time to the DFO; and (iv) developing close working relationship with the participating NGOs and with the DAE staff to promote specialist advice to the groups according to their established needs.

Project Programming and Review

7. DOF and LGED will prepare project programmes (PPs) for their respective components; and receipt of approval of these documents by the planning commission will be a condition of effectiveness. Project AWP/Bs will be prepared based on the PPs, but, where necessary, amended in consultation with the PCD, line departments and IFAD, to reflect changes in costs and project progress.

8. Initial steps of project programming will be prepared jointly by the PIU and the line departments. As most project activities will depend on progress of community organizations, the cooperating NGOs will initiate the preparation of the AWP/B exercise by preparing an overview of the coming year's activities requested by participating beneficiary groups. This will include requirements in terms of village infrastructure investments, fisheries and aquaculture activities, training and IGA, etc. Based on inputs jointly prepared by NGOs and thana level staff of line departments, each line agency will prepare its proposals for AWP/Bs to be discussed and agreed in a DCC meeting.

9. The individual district based proposals will be consolidated by the PCD into a draft AWP/B which will be finalized by the PCC and submitted to the IMSC. The approved document will be sent to IFAD for review and approval and assurance in this respect will be obtained during negotiations.

10. Within each AWP/B, NGOs and line departments will prepare quarterly work plans which will be finalized by the PCD after discussion within the DCCs. The NGOs and line departments will receive funds on a quarterly basis, based on the agreed work plan and following an assessment of the technical and financial performance during the previous period. No payment will be made until the activities planned for the previous period have been completed.

11. Before starting the process of establishing AWP/Bs, annual review workshops will be carried out in all districts not later than April of each year. The workshops, in which all parties involved in project implementation and representatives of beneficiaries will participate, will review progress of implementation and impact on beneficiaries, analyse the constraints encountered and make the necessary adjustment for the following year.



B. Community Mobilization and Development

NGO Involvement and Selection

12. The community mobilization and development component will be entirely executed by NGOs contracted to the project. The PIU will be responsible for selecting and contracting the NGOs and for monitoring their output and performance. A large national-level NGO will be contracted for large water-bodies development. The proposal to contract a large and experienced national NGO is justified in view of prevalent social and institutional complexities associated with many of the large water-bodies in the area which will require an organization possessing an inherent strength to deal with them.

13. Other NGO-supported activities to be covered under separate contracts will include: (i) conducting information and sensitization campaigns prior to the selection of villages; and (ii) establishing, training and supporting PAGs and CDGs by one or two small to medium sized local NGOs per district.

14. Selection of NGOs will be based on the following. The NGO should: (i) be registered with the NGOs' Affairs Bureau and the Social Welfare Department and have experience in the formation of self-help beneficiary groups; (ii) be capable, committed and focused on aquaculture/community development and proven by the implementation of an aquaculture/income generation programme for the last three years; (iii) have proven capacity to deliver aquaculture/income generation services to the target groups and be able to mobilize qualified staff including experienced field workers; (iv) have proven experience in mobilizing and working with rural women's groups; (v) know the local situation and communities, constraints and potential, and have experience in cooperating with the local authorities; (vi) have access to and acceptance by the target groups and be able to communicate freely with them; (vii) have proven commitment to mobilizing local resources for development; and (viii) be accepted or in the process of being accepted by the selected credit intermediaries.

15. Implementation of the community mobilization and development component will be as follows. The PIU will prepare a description of the services required from the NGOs and the financial support to be provided. It will publicize this to all district and some national NGOs and call for expression of interest. After a preliminary ranking, detailed tenders from the most promising NGOs will be requested. The tenders will provide the background to the NGOs, the group formation techniques to be adopted, the experience with savings and credit schemes and other relevant information. Selection of the best tenders will be made and the PIU will prepare, negotiate and sign contracts. Contracts for the initial mobilization and sensitization campaign which will lead to the selection of participating villages will be of short duration, say three months, while contracts for group establishment and support will be long-term arrangements for two years with the possibility of renewal provided that output and performance are considered satisfactory. Payment will include an advance for mobilization and subsequently funds will be reimbursed against agreed quarterly workplans and progress made. Activities undertaken will be scrutinized by the PIU prior to release of further funds.

Mobilization and Beneficiary Participation

16. **Beneficiaries and targeting.** Within the overall IFAD target group - the landless, the functionally landless, the marginal and small farmers - beneficiaries will be organized by selected NGOs into LFGs, PAGs and CDGs.



17. Within the fishermen/aquaculture groups there are two distinct categories: (i) **large water-bodies**: the core of the beneficiaries will be groups of existing fishermen who will take long term lease of baors/beels and who all belong to the landless or functionally landless category. They are, at present, employed by better-off leaseholders, typically on a part-time basis. The groups will be supplemented by landless people from the fishermen villages to reach a ratio of about 0.5 ha/fisherman (100 fishermen/water-body of average size 50 ha); and (ii) **ponds**: beneficiaries within this category will come from two distinct groups: (a) the landless, functionally landless and women who do not own ponds and depend, therefore, on lease arrangements to have access to ponds, and (b) small and marginal farmers who own a small fish pond and are interested in intensifying fish production. Within a village, both categories will be organized in the same groups.

18. Other proposed groups (CDGs) will include all different categories of the target group. Particular attention and preference for financing IGA will be given to the involvement of women.

19. **Selection of participating villages.** At the outset of project implementation, several local NGOs in each district will be contracted for three months to organize a community-wide information and sensitization campaign in about 1 000 villages pre-selected by the PIU on the basis of the availability of large waterbodies and/or of a substantial number of fishponds suitable for development, in order to raise the level of awareness and interest of the potential client groups. The work will lead to short listing of villages which will warrant further investigation through detailed needs assessment and resource surveys (NARS).

20. **Needs assessment and resource surveys.** At this second stage of selection of villages and waterbodies, a complete assessment of available resources and potentials will be made. Participatory rural appraisal techniques will be used, harnessing inputs from the line agencies and individuals as necessary. The surveys will cover: the natural resource base; technology; trained manpower; socio-economic conditions; social indicators and availability of social services, beneficiary attitude and enthusiasm; local power structure, and market and processing systems. They will identify local problems and needs, and solutions through community effort and external support. The large, national NGO will conduct the NARS in the villages around these water bodies and the smaller NGOs for villages within the ponds areas.

21. **Group formation.** Findings of these surveys will provide the NGOs with several sets of baseline data on relevant parameters for plan development and signify the potential for viable group formation. In a series of meetings extending over three to four months, the NGO will make contact with the village or community representatives - and, if appropriate, their elected representatives - to discuss the benefits and obligation of group formation, both for the specific productive purposes of aquacultural development and for wider social and income-generating pursuits.

22. On agreement of the scope and type of groups required, the NGO will initiate their formation, election of officers and start its normal training, counselling and group development process. Performance of the group members in following the group savings rules will determine the eligibility for loan sanction from the group savings/credit fund which will comprise both members' accumulated savings and any revolving fund made available to the contracted NGOs. The NGOs will establish viable linkages with relevant services, in particular the TFOs and LGED engineers.

23. **Need-based participatory planning.** Groups will participate in further exercises, again under NGO auspices and with DOF and LGED support. The survey findings from NARS will be utilized for the planning of a long-term production plan for each of the waterbodies, which could be broken down into short-term production plans including the AWP. The planning and discussion



process will also highlight the priority needs for social and village infrastructure development which will later be formalized into proposals for VIF assistance.

24. **Aquaculture groups.** The NGOs, at the behest of interested beneficiary groups, will identify the unused or under-used suitable ponds and large waterbodies of various sizes which could be developed and used by the PAGs and the LFGs and will assist the groups to arrange for long-term leases from pond owners and MOL/DOF. The NGOs will organize the participation of LGED and DOF to prepare plans and cost estimates for re-excavation, fish culture and pertinent infrastructure development. NGOs will produce the activity plan for PIU on the necessary feasibility studies for the larger waterbodies. The PIU will assist in the process of plan and scheme design by drawing up proformas for sub-project assessment which will simplify and expedite the preparation.

25. **Village improvement fund.**² Initial ideas for sub-projects involving infrastructure to improve the facilities and amenities of villages or services to enhance health, education and welfare will come from the community development process. Based on these proposals, a scheme implementation committee (SIC) will be established to manage the scheme selection, design and costs estimates, procurement of materials, scheme execution and follow-up operation and maintenance and organize the village contribution to the costs at 10% of the scheme. The SIC will comprise representatives of various development groups active in the village, elected representatives such as UP chairman and UP council members, a representative of LGED and the contracted NGO. An elected representative will chair the SIC and the social organizer of the NGO will act as secretary. All proposals will be submitted through the necessary formal local government system to ensure compliance with minimum financial, cost recovery, technical, equity and environmental criteria. Final appraisal and approval will rest with the PIU. Once approved, LGED will issue a work order in favour of the respective SIC and 20% of total costs will be released to the SIC with the design and work schedule. The construction work will then be executed by the community and supervised by LGED. After completion the scheme will be handed over to the SIC for operation and maintenance. The project will provide necessary technical support in terms of training to the SIC in properly running the schemes.

C. Line Agencies Operations

26. DOF will provide technical training, extension and other services to the beneficiary groups as described in the project documents. LGED will design and supervise the implementation of aquaculture infrastructure, community infrastructure and most of the interventions financed through the VIF. MOL will be involved in leasing large waterbodies and demarcating their boundaries. The participation of line agencies will be coordinated by the PCD and specified/agreed in the quarterly work plans to be prepared by the PIU in close cooperation with the line departments. Funds for the line departments will be disbursed quarterly on the basis of the agreed quarterly work plans and progress made.

27. **Aquaculture development.** The institutions responsible for planning and implementation will be: (a) the DOF for: (i) training of staff and beneficiary target groups including women's groups and the participants in the demonstration programme; (ii) participating in the need assessment, (iii) technical guidance and supervision of media campaigns; (iv) organizing workshops; and (v) arranging for services to the beneficiaries by other departments such as DAE; (b) the PIU for contracting: (i) research institutions, universities, NGOs and consultancy organizations for participatory research; (ii) private video film producers; and (iii) arranging project level workshops

² As most of the schemes are expected to be infrastructure interventions, the procedures described below concentrate on this type of project.



and seminars; (c) the NGOs for: (i) pond aquaculture and beel/baor aquaculture beneficiaries' groups mobilization; and (ii) drawing group level extension plans and their implementation and monitoring.

28. Beneficiary training and extension activities will be executed by the PIU through the PIO in each district. On the basis of a needs assessment the TFOs together with the NGO will prepare a seasonal programme to meet the requirements of the groups. Detailed training programmes will be established by the PIU training and extension officer in close cooperation with the fisheries training centre in Faridpur, and will be executed by the TFOs for pond farmers and fishermen and the AqAs for hatchling and fingerling producers. Emphasis will be given to the training of hatchery operators and fingerling producers to enable them to pass relevant technical advice to their respective customers. Technical training of TFOs and NGO staff will be provided by the AqAs. Technologies proven to be effective will be demonstrated at group level.

29. As well as training and extension requirements of the beneficiaries, the needs analysis will identify adaptive research requirements in situations where available technology is not appropriate. These research topics will be listed by the AqAs and sent to the PIU. The aquaculture specialist will select those topics amenable to adaptive research and the PIU will award contracts for the conduct of such research to a research organization/consultancy, etc. ICLARM which is much involved in Bangladesh in participatory adaptive research is particularly well placed to execute these research activities, provided they fall in the area of its competence. The research will be conducted over a one to two year period under farmer conditions and in cooperation with the AqA/TFO/NGO. The results will be assessed in a participatory workshop and released as appropriate for dissemination.

30. **Infrastructure works.** Aquaculture and community infrastructure works will be in accordance with standard operation procedures developed by LGED, in close cooperation with WFP which will finance the infrastructure related earthworks. Scheme identification and selection will involve beneficiaries, NGOs, DOF and LGED. For all pre-selected schemes except fish ponds a feasibility study will be undertaken to assess technical feasibility, financial viability and environmental impact. If found economically feasible and environmentally acceptable, LGED supported by the technical assistant engineers will prepare detailed designs, standard contract documents will be formulated, including arrangements for the use of Labour Contracted Societies (LCSs) which will be contracted for maintenance work, if appropriate. Construction will be carried out by the beneficiaries (in the case of fish ponds) or through contractors and supervision of all works will be undertaken by LGED thana staff supported by the contracted LGED assistant engineers at district level. Schemes implemented under WFP/WFP arrangements will be administered by PIOs which will be responsible for paying the workers, but LGED will ensure that the works are constructed according to design.

31. Community infrastructure and the rehabilitation works on large waterbodies will be executed over a five-year period with the initial year for detailed planning, selecting waterbodies and locations for growth centres, parishad (council) buildings and landing stations and procurement followed by four years of construction. Special fund flow arrangements are proposed to ensure a smooth implementation of the construction programme without major cash flow problems.

32. **Maintenance of civil works** will be as follows: (i) all roads and road-related structures are to be maintained by LGED through its regular maintenance programme according to the "Guidelines for Implementation of Rural Infrastructure Maintenance Programme" issued in 1995. Routine road maintenance is generally sub-contracted to LCS constituted by LGED/NGOs of destitute women and landless at a ratio of two persons/km.; (ii) parishad buildings will be maintained by the local bodies concerned; (iii) all growth centre buildings and facilities and the landing stations will be leased out



and maintained by the lease holder; and (iv) fish ponds and large water bodies will be maintained by the users.

33. **Ministry of Lands (MOL).** MOL will contribute to the project with two interventions: (i) by handing over the large waterbodies to DOF which will then enter into long-term lease agreements of ten years with LFG. Assurance will be obtained during negotiations that the waterbodies be handed over to DOF not later than six weeks after submission of the request to MOL by the PCD; and (ii) through demarcation of large waterbodies to reach a clear-cut separation between the respective waterbody and adjacent agricultural land and to avoid conflicts between fishing groups and farmers. MOL will be assisted in this task by LGED staff and supported by the project through the provision of transport and survey equipment.

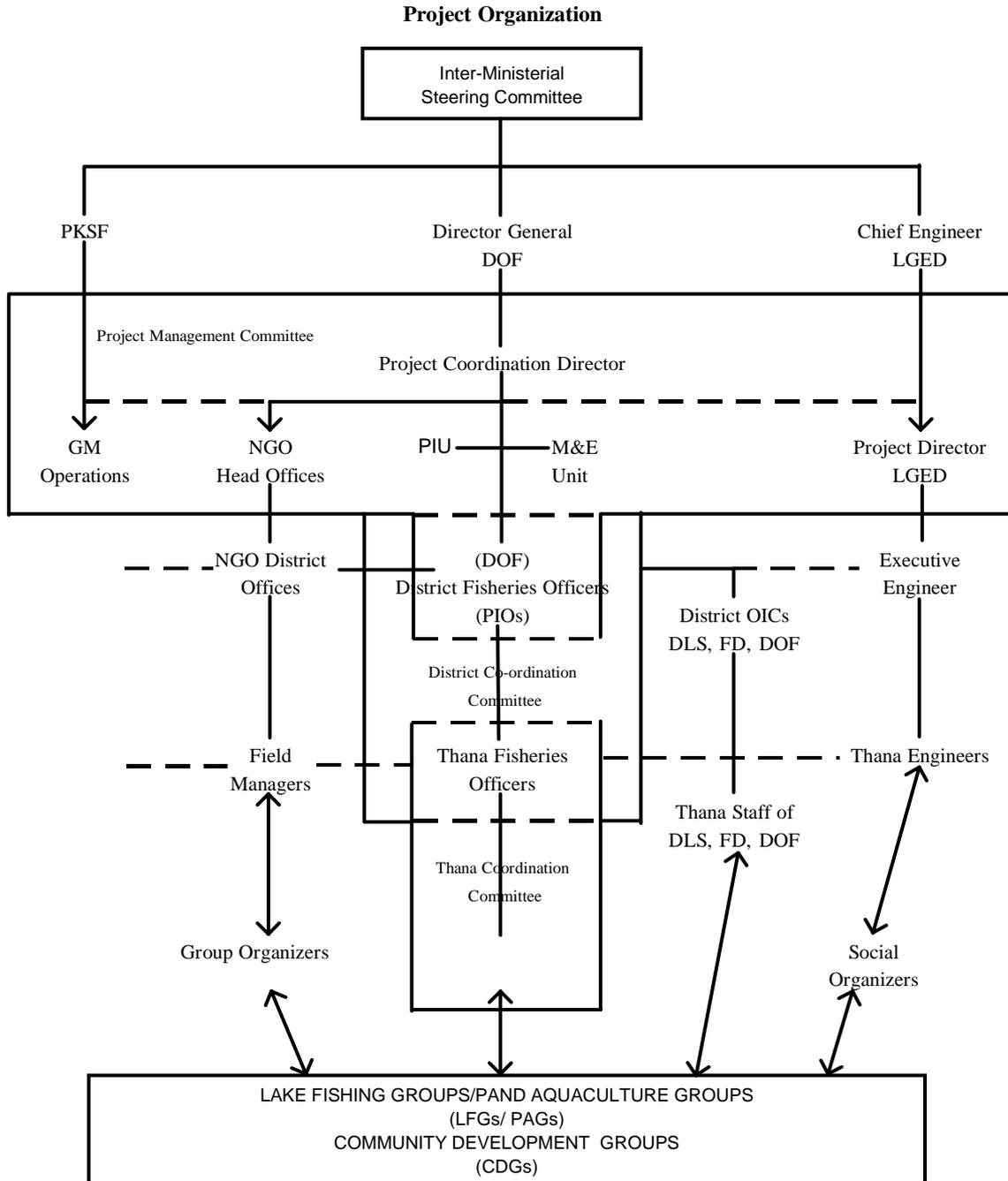
D. Rural Credit

34. The rural credit component will be managed by the PIU and executed by (i) PKSf, (ii) NCBs, and/or (iii) the PIU. The Government will enter into a subsidiary loan agreement with PKSf and the selected NCBs to re-lend the proceeds of the IFAD loan to selected NGOs to provide micro-credits to project beneficiaries on an individual or group basis for the purpose of intensifying aquaculture productions (production loans) and establishing IGA. The financing arrangements for the credit line will be as follows. The Government will bear the foreign exchange risk and relend IFAD loan funds to PKSf or NCBs in local currency at current rates and conditions. Disbursement of funds to PKSf and NCBs will be as reimbursement of expenditures incurred. For this purpose, PKSf, NCBs and the PIU will open a project account in local currency. PKSf, NCBs and selected NGOs will also establish a revolving account to which all recoveries and interest, net of operating costs, will be deposited. This will be used to expand the lending to the target group for a period of 15 years.

35. Proceeds of the subsidiary loan will be used to make sub-loans to selected NGOs contracted under the project to provide services to the different target groups as defined in this report and will enter into sub-loan agreements with the selected NGOs. The service charge payable on the principle amount of the sub-loan will be 4%/year with a repayment period of up to three years including a grace period of six months and a repayment in quarterly instalments over the remaining period.

36. Selected NGOs will be appointed according to the respective established procedures of PKSf and NCBs. Selection criteria for contracting NGOs under the project will be in harmony with those used by PKSf and NCBs, and they should be acceptable to IFAD. NGOs participating in the credit scheme will meet eligibility criteria including: (i) the sub-loans will only be used for on-lending to the project beneficiary groups; (ii) the selected NGO has a demonstrated record of running a successful micro-credit programme or demonstrates the potential to do so after TA and capacity-building; (iii) funds will be deposited in a separate interest-bearing account from which loans will be extended; (iv) minimum loan recovery rate will be 95%; (v) the selected NGO has adequate manpower for intensive supervision, and has an efficient management committee; and (vi) the service charge received from the beneficiaries should fully cover loan administration, supervision and operation.

37. Micro-credits will be granted to beneficiaries who fulfil the following eligibility criteria: (i) be a member of a project-related beneficiary group; (ii) actively participates in saving activities of the group; and (iii) has participated in training covering savings and credit procedures and technical matters concerning the proposed investment. The interest rate (service charge) will be market-oriented and the selected NGOs will have full autonomy to set their loan maturity periods (usually 52 weeks but longer periods for medium term loans to LFGs for the purchase of boats and nets) and on-lending rates. The effective interest rates are expected to range between 25 and 30%.





Appendix A

ECONOMIC AND FINANCIAL ANALYSIS

A. Project Beneficiaries

1. The project's community development will benefit about 24 220 households including 9 000 fishermen and fish farmers. In addition, access roads for large waterbodies and other community infrastructure development such as growth centres, link roads etc. will benefit not only group members; but all inhabitants at the 450 project villages with an estimated one third of the villages' population (about 43 300) benefiting directly from this investment. Activities with a strong involvement of women include pond fish farming, IGA and road maintenance through LCSs including an anticipated number of beneficiaries of respectively about 3 750, 6 500 and 200.

B. Project Benefits

2. The main quantifiable benefits arising from the project are derived from the increased carp fish production in 750 ha each of improved large waterbodies and ponds and the provision of fisheries support services. There are also many unquantified economic and social benefits resulting from project investments. In the case of activities under the village improvement fund, these benefits are expected to be in the form of improved living conditions (drinking water supply schemes, sanitation, school and health services, etc.). An intangible but important overall social benefit from the project is expected to be the increased community participation in development on a self-help basis. In addition, IGA are expected to produce sustainable, positive benefits for the target beneficiaries, in particular women.

3. Studies carried out by the World Bank and AsDB have provided consistent evidence that improvement of roads to paved standards: (i) generates significant growth in vehicle traffic and an increase in the total movement of people and goods; (ii) stimulates the operation of bus services; (iii) reduces transport charges rapidly and significantly with a consequent improvement in competitiveness of the marketing system; (iv) improves farmgate prices for outputs and reduces input prices, (v) time saving a result of the transfer of pedestrian trips to more efficient motorised and non-motorised methods; (vi) the ERR was above 20%, when both transportation and agricultural benefits were included.

4. Further studies have analysed the impact of improving growth centre market facilities in conjunction with road upgrading as proposed in this project. Improvements have resulted in an increase of market users and volume and value of traded goods, a reduction in spoilage, an increase in the number of visitors to such centres and an increase in the lease values of stalls. This latter outcome has important implications for local government finances and the sustainability of the facilities.

C. Financial Returns

5. Representative aquaculture enterprise budgets been prepared to assess the financial attractiveness for the fishermen and fish farmers of project investments and improved farming practices. Different enterprise models have developed to test the financial viability of the different proposals for ponds and large waterbodies. It appeared clearly that gross margins per hectare are expected to increase by 190% to 700% and the incremental return per incremental labour day for both the large waterbodies and ponds are range from BDT 70 to 366, well above the prevailing daily wage rate in agriculture estimated at about BDT 45.



6. Analysis of the enterprise models labour profile indicates strongly increased labour requirements ranging from 300% in the case of the large waterbodies to more than 700% for the fish ponds. Considering the high un- and under-employment in the project area and the lack of alternative employment, intensification of fish production provides an excellent opportunity to create financially attractive employment which contributes substantially to the family income.

D. Financial Implications for the Government

7. Recurrent budget costs which will extend for the life of the project are modest and largely limited to road maintenance and the continued employment of the additional eight AqAs recruited under the project, all amounting to about BDT 10 million (about USD 250 000). Maintenance costs for ponds, baors and beels to be improved under the project will be met by the beneficiaries. Maintenance costs of growth centres and landing stages will be financed by the leaseholders. Union Parishad buildings will be maintained by union parishads, from taxes.

E. Economic Rate of Return

8. **Assumptions.** An economic rate of return for the aquaculture development part of the project has been calculated on the basis of the following: (i) the net benefit stream has been analysed over a period of 20 years; (ii) conversion factors³ of 0.64 for vehicles, 0.75 for vehicle operating costs, 0.6 for road maintenance and 0.86 for other domestic tradables and services were used; (iii) economic prices of outputs are valued at market prices after adjustment for taxes; (iv) financial costs have been adjusted to economic costs by excluding taxes, duties and price contingencies; (v) the opportunity cost of labour is estimated at BDT 25/day for unskilled labour, reflecting its under-utilization in the area and at 80% of its financial value for skilled labour; and (vi) ongoing recurrent costs and replacement investment costs have been estimated for the whole project period. O&M costs associated with aquaculture infrastructure improvement have been accounted for in the estimation of incremental net benefits from production. Costs excluded from the analysis are: (i) 50% of NGO contracts leaving only those attributable to the formation and the operation of LFGs and PAGs; (ii) the VDF; (iii) loans for IGA; and (iv) 75% of the approach roads for *baors* and all community infrastructure on the ground that benefits from these investments have not been quantified.

9. The overall economic rate of return to the project is estimated at 12% for the base case. The return is sensitive to the price of fish with a 10% fall or increase in price will result in an EIRR of 8.2%, or 15% respectively. It is, however, somewhat less sensitive to fish production operating costs. A 10% increase or decrease in costs would result in an ERR of 9.7% or of 14% respectively. If the total cost of roads is excluded from the analysis, the rate of return is 13.3%.

F. Sustainability

10. The financial analysis of the activities that will be promoted by the project in the ponds and the larger waterbodies has shown that all these activities have an acceptable internal rate of return and that labour remuneration largely exceeds the present daily agricultural wages. Discussions with existing operators and fishermen groups have confirmed these conclusions and potential project beneficiaries have shown solid interest to start these activities.

11. The maintenance and repairs of the civil works that are directly related to the ponds and the large waterbodies, are under the responsibility of the PAGs and LFGs respectively. In view of the

³ Based on a detailed analysis carried out for the "Formulation of the Third Rural Infrastructure Development Project", AsDB TA No. 2550-BAN, January 1997.



financial attractiveness of the fisheries/fish farming activities it can be reasonably expected that the infrastructure works will be well maintained.

12. Whereas the management of the ponds is relatively easy and straightforward, institutional, organizational and social problems are more likely to arise for the management of the beels and baors. Institutional problems are expected to be resolved through the new fishery policy under preparation by the Government. Social problems related to encroachment of some large waterbodies by farmers will be avoided through a demarcation effort under the project which will establish a clear division of the water and the farm land areas.

13. Many NGOs are already supporting pond aquaculture in the project area and other districts. If support is required after the project, it may reasonably be assumed that NGOs will include such support in their normal work planning. Continuation of support to the beels and baors might be more difficult to assure since it requires a permanent follow-up and falls outside the regular working programmes of NGOs. The commitment of the NGOs to continue to provide support after the project will be one of the criteria for their selection.

14. A cost-recovery mechanism is developed under the WFP fisheries programme. This makes 15% of the catches available to the NGO, which provides support and guidance to the pond operators. A similar approach could be promoted by the end of the project to assure that NGOs will be capable to continue support after the project.