People's Participation and Sustainability Aspects in the Fisheries Project of Yeji, Ghana
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by

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THE VISION FOR IDAF PHASE III

INTRODUCTION

Development strategy during the 1960 and 1970s was based on the philosophy that developing countries lacked improved technology and capital for speeding up their development. Industrialization was promoted in order to capitalize on the abundant fish resources. However, the anticipated expansion of the economy did not happen and the development approach shifted towards an integrated rural strategy where emphasis is put on the community as a whole to upgrade incomes and the quality of life through technical assistance and the active participation of fisherfolk and the community.

In this context, emphasis was initially placed on the Community Fishery Centre (CFC) concept as a means of promoting artisanal fishery development. But it became apparent that the presence of a complex of facilities and services tailored to meet local needs was no guarantee that the structures/facilities would be used or that development would occur. The active participation of fisherfolk and the mobilisation of local and community resources was imperative in order to assure sustainability of initiatives undertaken by development projects and/or the community.

So far and in general terms, the IDAF Programme has worked under the context of abundant or seemingly adequate fishery resources with moderate population pressure. The scenario is however changing (and very fast for that matter) and we would soon face the triple constraints of reduced or depleting fish stocks, degrading environment and increasing population pressure. Like in other sectors, it must be anticipated that just to survive, parts of the population surplus in the fishing communities will enter the artisanal fisheries, which will increase the competition for the resources among the small scale fisherfolk in addition to the prevailing competition between the artisanal and industrial fisheries, with their attendant effect on the environment.

This scenario calls for a continuation of the integrated participatory strategy which remains relevant to the development of artisanal fisheries in West Africa. However, the emphasis needs to be placed on the elements and mechanisms that favour the sustainability of initiatives responsible fishing, the empowerment processes that ensure the devolution of major resource management and development decisions to the local community, the strengthening of national human and institutional capacities at all levels for a sustainable and equitable fisheries resources management and development, as well as in the follow-up and consolidation of past achievements.

DEVELOPMENT OBJECTIVE

Thus the development objective of the Programme in the present phase III which started on 1 July 1994 is to ensure twenty coastal West African countries a sustainable development and management of their artisanal fisheries for maximum social and economic benefit of their fishing communities in terms of employment, proteins and earnings. This will be done through an integrated and participatory approach in which emphasis will be laid on equity, gender issues, the transfer of technology for development, environment protection, as well as the strengthening of human and institutional capacities.
The immediate objectives are:

1. To identify, assess and disseminate strategies and mechanisms for sustainable management and development of the artisanal fisheries in fishing communities;

2. To improve the competence of national Fisheries Departments staff in development and management planning of artisanal fisheries;

3. To enhance regional technical competence in the fisheries disciplines, particularly in fishing and fish technology;

4. To improve information and experience exchange related to artisanal fisheries within the region;

5. To promote regional and sub-regional collaboration for the development and management of artisanal fisheries

In this context, IDAF will among other things tackle the following major aspects in its work:

- assisting in the elaboration and implementation of a clear and coherent national development policy for the artisanal fishery sector;
- providing advice on management and allocation of resources between artisanal and industrial fishing fleets, both national and foreign;
- involving users in the design and management of on shore infrastructures;
- monitoring the sector's evolution by the setting up of an economic indicator system for the sector adapted to the financial and human availabilities;
- improving fishing technologies in accordance with the available resources;
- increasing the final product's value by improvement in processing and marketing;
- promoting community development in accordance with the lessons learned from Phase I and II and oriented towards the sustainability of actions undertaken;
- reinforce the Programme's information/communication system

It is anticipated that by the end of the third phase of the Project, the region will have a nucleus of field oriented experts capable to respond to the challenges of the artisanal fisheries sector and to spur development in their individual countries in keeping with the aspirations and needs of fisherfolk.
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SUMMARY

Fisheries is one of Ghana's most important food production sectors, contributing about 60% of the domestic animal protein supply in the country. Its marine fisheries produces about 90% of the annual catch while inland fisheries the rest, 90% of which is harvested from the Volta Lake. The Government of Ghana (GOG) attaches importance to the lake fishery and has made it a concern that the resources are effectively managed on a sustainable basis.

It advocates for development efforts towards self-reliance through popular participation at the local level. In order to increase domestic food supplies, the Government calls for full utilisation of the total national fish resources and, for the Volta Lake, has proposed the establishment of the Community Fisheries Centre (CFC) to support the development of the fishery and the people dependent upon it. For this, the lake side town of Yeji in Brong Ahafo Region was chosen for the placement of this facility.

Yeji is the largest town in the District and is the largest port for fish landing and trading in the area, covering 325 fishing villages (Osei Bonsu, 1995) within the jurisdiction of five district assemblies including the Atebubu Assembly responsible for the overall development of these villages.

The lake fishery is divided into eight fisheries administrative strata (Stratum I through to VIII). Yeji and its surrounding villages fall in Stratum VII where about 75,000 people are connected to the Lake for their livelihood with fishing being the predominant occupation in the area.

More than 18,000 fishermen are estimated to be living with their families around the Lake. They all depend on Yeji as the marketing centre for the fish from the Lake. Traders from various parts of Ghana converge weekly on Yeji to trade in fish and other commodities. About 10,000 metric tonnes of fish are estimated to pass through the Monday weekly market in Yeji.

These were some of the main considerations for locating the Integrated Development of Artisanal Fisheries (IDAF) Project at Yeji. Known as the IDAF-YEJI Project, it was prepared in 1988 by the IDAF regional programme office in Cotonou, Benin with the objective of improving the living conditions of the inhabitants of this sector of the Lake by constructing a CFC with facilities for storage, processing and marketing of fish products.

The Project also aims to increase domestic food supply, particular protein sources through the more effective use of available fisheries resources at the regional and local levels. This is seen as a means of satisfying national protein needs as well as creating employment opportunities in relation to the capacity building and development management for poverty alleviation.

It will also provide fishing equipment and other social services while strengthening the Department of Fisheries (DOF) to enable it to take over and effectively manage and control the lake fisheries resources.

Funded by the UNDP and the GOG, the Project became operational in 1989. It is being executed by the Food and Agriculture Organisation (FAO) and is being implemented by the DOF. However, by the end of the first year of operation, several constraints had forced the Project management into redesignation of the project documents, reviewing them to allow for a more realistic programming through a first phase.
The CFC could not be established and construction was held over into the second phase. Although originally designed as a two-year project, the first phase lasted until June 1993 with the second phase becoming operational in June 1994 with a finishing date now set for December 1996.

Despite these problems, the Project had carried out several development activities. By the end of the first phase, it had successfully carried out most of the activities outlined in its development programme dealing with the people it is meant to serve.

The Project held several meetings with representatives of the Yeji community to sensitisise them about the objectives and potential benefits the CFC will have on general standards of life and business. The Yeji CFC Implementation Committee and the other regional and district committees were formed on an ad hoc basis to assist the Project attain its objectives.

In order to adopt the integrated strategy to small scale fisheries development, the Project associated with various government and research institutions, national and international experts and consultants to widen the possibilities for effectiveness and success.

Under the second phase, the construction of the CFC is underway. It is expected to provide a mix of facilities and services to support the fishing industry on the Lake and the related activities of the beneficiaries. With the proposed limited liability stance of operation and management, the CFC is expected to contribute to the socio-economic well being of the communities in Stratum VII and Yeji as the market centre.

The willingness of the collaborators has ensured mobilisation of national development effort and resources toward implementing the integrated development activities, the research and extension and the monitoring and evaluation components. These were achieved through the Fisheries Development Unit (FDU), the Management Information Unit (MIU) and the Socio-economic Information System (SIS). The collaboration is contributing to the strengthening of local institutions for the long term technical support for management and development.

Thus the Project applied principles and guidelines of the integrated strategy and used various approaches and mechanisms which proved relevant and effective. Considerable impact has been registered and the potential to contribute to improvement of the living conditions of beneficiaries and to the sustainability of development activities and initiatives has been demonstrated.

However, the degree of outreach to beneficiaries is still low with the wide geographical spread of the communities. Then again, knowledge of the resources is inadequate and pressure on the resources is on the increase. The organisational and institutional base on which efficiency, approaches and mechanisms so highly depend, is yet to be fully articulated and developed.

Local organisations and institutions for development and management are still young. Expertise is yet to be recruited and the degree of local involvement increased. A great deal of cohesion will depend on the efforts towards improved organisation, strengthening of local institutional capacity, provision of credit to operators and the continued support from Government toward sustaining the development initiatives for improvement of the living conditions of the beneficiaries.
1. INTRODUCTION

With a total land area of about 239,460Km$^2$, Ghana has a population of about 15 million people. Fisheries is one of the most important sub-sectors in Ghana's food production sector, contributing about 60% of the domestic animal protein supply in the country. Marine fisheries is the predominant source of fish, producing about 90% of the annual fish catches. Inland fisheries produces the rest, about 90% of which is harvested from Lake Volta, the largest inland water body in Ghana (about 8,500Km$^2$) and largest artificial lake in the world. The Lake was impounded in 1964 as a result of damming River Volta, primarily for generation of hydro-electricity to power the Aluminium industry. Damming of the lake has had consequent negative effect on the lives of people that inhabited the area, including loss of agricultural and residential land, resettlement of families, disease etc. However, a secondary but important consequence is the enhancement of an inland fishery with increased fish resources. A larger population than ever before now depends directly or indirectly on the lake fishery and related resources for their livelihood.

The lake fishery is divided into eight fisheries administrative strata (stratum I to Stratum VIII). In Stratum VII alone about 75,000 people have now become connected to the lake fishery and allied activities for their livelihood, as fishing forms a major occupational activity of people inhabiting the area.

Concerned about the development of rural communities connected to the lake, the Government of Ghana (GOG) called for effective management and development of this water body on a sustainable basis. Hence the Volta Lake Research and Development Project (VLRDP) which was an integrated project in the 1970s had a major fisheries development component: the "successful" Kpandu-Turkor Fisheries Complex which was established in 1975. Kpandu-Turkor was the pilot Community Fisheries Centre (CFC) on the lake development programme and the first of the seven proposed CFCs to support the lake fishing industry. The other fisheries centres are to be built in major fish landing and marketing sites along the Volta Lake. One of these sites was identified as Yeji, or "Yeji Township" on the middle South-West part of the lake in the Brong Ahafo Region of Ghana, (see map, Fig. 1).

Fisherfolk from about 345 fishing villages along the lake in Stratum VII depend on Yeji as their marketing centre. Fish traders from various parts of Ghana converge weekly in Yeji to trade in the weekly fish catch from stratum VII and in various other commodities. About 10,000 tonnes of fish are now estimated to pass annually through the Yeji weekly market. Yeji and the rest of the fishing villages in Stratum VII therefore became the site for the Integrated Development of Artisanal Fisheries Project in Yeji (or IDAF-Yeji).

1.1 The Fisheries Sector

Ghana's fisheries sector is a vital element of its food production capacity. It comprises of artisanal, semi-industrial, industrial, inland capture fisheries and aquaculture. The sector contributes about 2-3% of the national GDP and about 5-6% of the agricultural GDP. Marine fisheries produces about 90% of the annual catch landings while inland fisheries produces the rest. The sector provides employment in fishing and related activities for over 100,000 fishermen in the artisanal marine and inland fisheries and over 1.5 million of their dependents (Mensah, 1994).
Fig. 1

MAP OF GHANA SHOWING YEJI AND THE PROJECT AREA

☐ Project area
☒ Non project area
Due to the important role of fisheries in Ghana's economy, the Government attaches great importance to effective development and management of fisheries resources. The responsibility for fisheries administration and management is vested in the Fisheries Department of the Ministry of Food and Agriculture. Ghana is divided into ten regions and in terms of fisheries administration and development, each Region is headed by a Regional Fisheries Officer. Under the Regional Officer are District Fisheries Officers under whom Fisheries Technical Assistants, instructors and demonstrators serve. However, fisheries development and management is hampered by a number of constraints such as underdeveloped institutional capacity, lack of an adequate management information base and inadequate financial resources, among others. Marine resources are being heavily exploited with indications of over exploitation. Hence the migration of fishers from coastal areas to Lake Volta with consequent increased pressure on the lake fishery resources.

As indicated above, marine fisheries is the main producer of fish in Ghana. However inland fisheries produces a significant proportion of the total fish landings. Production from Lake Volta accounts for about 90% of total inland fish; virtually all of which goes to satisfy domestic demand. Fish production figures are presented in table 1, below. Ghana exports relatively small quantities of fish and fishery products. The country's fish import and export balance sheet shows that significant quantities of fish are imported to supplement the country's fish protein demand.

Table 1: Fish Production by fisheries sector (metric tonnes)

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<tr>
<td>Industrial Fisheries</td>
<td>62,953</td>
<td>76,495</td>
<td>72,769</td>
<td>61,523</td>
<td>60,509</td>
</tr>
<tr>
<td>Inland Fisheries</td>
<td>57,660</td>
<td>58,000</td>
<td>57,000</td>
<td>56,000</td>
<td>52,000</td>
</tr>
<tr>
<td>Aquaculture</td>
<td>330.00</td>
<td>370.00</td>
<td>410.00</td>
<td>430.00</td>
<td>465.00</td>
</tr>
<tr>
<td>Yeji landings</td>
<td>-</td>
<td>-</td>
<td>9,269</td>
<td>10,305</td>
<td>8,202</td>
</tr>
</tbody>
</table>

Source: Mensah; Fisheries Department; Project Annual Reports

1.2 Fishing and Related Activities in the IDAF-Yeji Project Area

Although farming, animal rearing etc... are major socio-economic undertakings, fishing and related activities constitute the main occupational activities of communities along the lake in Stratum VII. Initial predictions of fish resource potentials of Lake Volta, of 20,000 metric tonnes made in the early days of its impoundment (Lawson; 1966) became an underestimate. Although present potential has not been ascertained, more recent estimates are put at 40,000 tons. Actual production is estimated at 36,000 tonnes. Increased fish resources in the lake attracted fisherfolks from various parts of Ghana including from coastal areas who came with their families to settle in fishing villages along the lake. Villages are dispersed and often isolated settlements from where fishermen operate seasonally or permanently. Consequently the number of fishermen dependent on the lake fishery in Stratum VII has steadily increased over the years from 4,500 in 1975 to
15,581 in 1989. Current estimates are put at about 18,312 but results of the recently conducted frame survey are expected to reveal even higher figures. Fishing villages and settlements are inhabited by various ethnic groups, but many villages are composed of single ethnic groups that tend to live in clusters of fishing settlements. The main ethnic groups are Ewes, Gan Adangbes, Akans, Hausa, Gionjas etc. As they are generally on the move to search for rich fishing grounds, new fishing settlements are emerging as old ones disappear.

Fishing canoes range in size from about 6 to 12 metres but are generally of the same design: planked flat bottom canoes. Some 6,501 fishing canoes were estimated in 1992 (Mambe; 1992, Osei-Bonsu; 1995). Propulsion is by paddle, outboard motors or by sail. Although the number of motorized canoes greatly increased in recent years, outboard motors are expensive and unaffordable by many fishers. This is particularly so under the current high rate of inflation and decline of the Ghanaian cedi against major international currencies. High cost of fuel also tend to discourage use of outboard motors. Paddling is therefore the predominant means of propulsion. The larger winch boats (i.e purse seine boats) are generally motorized: 64% as against about 1.2% for other canoes (Osei-Bonsu; 1995). Yamaha engines are most prevalent with a size range of 8 - 40HP.

Fishing methods and gears employed include gill nets, cast nets, winch nets, long lining, hand lining, beach seining, poisoning, lift baskets, harpooning, "nifa nifa", wangara, and traps. However, gill net fishing is most popular. Bamboo traps in the form of hollow bambo stems are also becoming increasingly important for targeting Chrysichthys Spp. Although mesh size is restricted to a minimum of 2" (5cm), smaller mesh are in use along side other illegal gears. Winch nets introduced during the late seventies, and beach seines are both prohibited gear on the lake, but are increasingly being employed.

Fishing is generally an all year round activity for most fishers on the lake. However, due to decline in fish catches in recent years, some fishers now prefer to fish part-time and take up farming activities during the rains when catches go down. Full time fishermen spend most part of the day fishing. They generally leave early (about 4.00am), and return late at about 8.00p.m with the catch, occasionally returning to the fishing grounds. On average fishermen fish 299 to 322 days in the year (Goudswaard and Avoke, 1993). Catches vary with the season but are higher during the dry season when high waters recede from lakeside vegetation in which fish hide.

On average, standard fishing canoes carry 3 to 4 fishing crew. Winch boats may have up to 10 crew and operate in the "company" system. The company comprises the investor, fishermen, and fish processors (his and the wives and children of senior fishermen) recruited under an agreement of a specific duration. Fish caught is sold to processors or processed before sold. Profits are saved for a period lasting up to two years following which money is divided into two or three parts. One part is used to pay for the investment, one part to the owner and the remaining part divided among members of the company including women if they strictly operate under the system. From such monies young fishermen in particular obtain their own fishing inputs. Few fishermen are members of fishermen associations.

1.3 Fish Processing and Marketing in the Project Area

Fish processing is the occupation of women who are mainly the wives and families of fishermen. In the absence of modern techniques, fish smoking, salting and drying, and fermentation are the means of preserving fish catches. However, fish smoking is the dominant processing method. Rectangular and cylindrical or Fante ovens are the most popular smoking
ovens in use, constructed with mud or clay soil. These consume large quantities of fuelwood. Cut-out metal drums are also found in Yeji and nearby villages where they are used mainly to re-smoke fish. Improved chorkor ovens introduced by the IDAF-Yeji Project are also found but are limited in use due to various reasons discussed later.

Various fish species are smoked, but large fish are generally salted or fermented to produce the popular product "koobi". Salt for dried and fermented fish is supplied by salt sellers. Although fuelwood is supplied by individuals in some villages, this is scarce and expensive and women spend considerable time collecting their own fuelwood for fish smoking. They may travel up to 15Km to collect fuelwood due to scarcity and restriction in many areas.

Processing entails laying already gutted and cleaned fish on the smoking oven grills, lighting the fire underneath and turning the fish occasionally. Several batches are smoked as finished ones are pushed aside or unloaded to accommodate fresh ones. This way, the week's catches are smoked, or dried and stored in the house, on ovens or platforms until a day before the Yeji weekly market day when fish is re-smoked if the need arises. Products are packed in woven palm baskets of varying size.

Products are generally of good quality, although charring and fragmentation are common causes of damage and fish losses. Spoilage also occurs especially during the rainy season. Fish packaging is generally adequate and products can last up to four weeks or more if occasionally re-smoked.

As the only means of transport on the lake, transport boats collect the weekly produce of processed fish from villages along the lake in Stratum VII and transport them and their owners (who are either the processors or long distance fish traders travelling to the fishing villages to buy processed fish) to Yeji on market days. Due to long distance and the large volume of processed fish, overloading of boats is a tendency. With the presence of numerous tree stumps in the lake among other factors, serious boat accidents do result in considerable damage and loss both of lives and belongings.

At Yeji, fish is unloaded from transport boats and carried to the market centre on push carts/trolleys operated by youths specialised in the art. Charges depended on the size of basket. The Yeji market bustles with a variety of trading and other activities during Monday market days when fish and various farm produce and other commodities are traded. All incoming cargo are charged a variety of levies in cash or equivalent in kind by local authorities (The local District Assembly, Town Development Committee and customarily the Traditional Council or Chief of Yeji). Levies depend on size of basket etc... but fish baskets generally range from 200 to 450 cedis depending on size of basket. Although fish is marketed at few other markets in the lake area, the Yeji Market is preferred by most operators due to better prices and a guaranteed market.

Fish marketing in Yeji is based mainly on the "Ntumu" system. "Ntumus" are fish traders (generally young and middle aged women) who operate stalls they rent or construct on their own. Incoming processors or traders agree with the Ntumu woman on price of the fish. The Ntumu then bargains with long distance fish traders coming from various distribution centres in the metropolitan areas of Kumasi, Accra and other places (see map (Fig. 2) on fish distribution centres for Yeji). When the fish is sold the Ntumu receives a previously agreed commission from the owner of the fish and at times also from the trader. Long distance traders load fish on transport vehicles specialised in the trade for specified charges depending on size of baskets. Fish departing from Yeji also pay levies collected by the local authorities.
Fig. 2

*MAP OF GHANA SHOWING FISH DISTRIBUTION CENTRES FOR THE YEJI MARKET*
1.4 The IDAF-Yeji project

1.4.1 Context

The Government of Ghana's development policies advocate for development efforts with self-reliance and popular participation at the local level. In order to increase domestic food supplies, the Government calls for full utilisation of fish resources including that of the volta Lake. In its 1968-88 Public investment Programme, the Government proposed a Volta Lake Fisheries Development Project including as a priority, a Fish Landing and Marketing Project in Yeji. In compliance with the strategy adopted from the 1984 FAO World Conference on Fisheries Management and Development, Ghana adopted the integrated approach to fisheries development.

With the UNDP plan to help the country through an integrated fisheries project through the establishment of a community fisheries centre, the West African regional Programme for Integrated Development of Artisanal Fisheries (IDAF), based in Cotonou, Benin prepared the Project in 1988. With several missions to Ghana and consultations with local authorities, Yeji was confirmed as the site for setting the project. The Integrated Development of Artisanal Fisheries Project - Yeji (IDAF-Yeji Project) was originally prepared at the total estimated cost of US$683,440 for a duration of two years. Funded by UNDP and the Government of Ghana, the project became operational in January 1989. It is executed by FAO and the Fisheries Department of Ghana. The designate manager was a Chief Technical Adviser (CTA) from FAO with a national Fisheries Officer as Project Co-Manager or Government Counterpart Manager. Other project technical staff are drawn from the Fisheries Department.

By the end of the first year of operation, the project was considered slow in delivery in connection with several constraints including unrealistic objectives and outputs, among others. Through recommendations of a tripartite review meeting, the project was redesignated a preparatory first phase in anticipation of a second phase during which project objectives could be realised. This warranted revision of the project document; project objectives, outputs, activities and the workplan; several budgetary revisions and extension of the project several times, ranging from two to six months duration given to enable successful implementation of planned project activities during the first phase. This phase lasted until June 1993, after three years and six months. The second phase became operational in June 1994. Although originally planned for three years this phase was reduced by about seven months due to budgetary limitations and is therefore expected to terminate in December 1996.

1.4.2 Project Objectives

The development objective of the project is:

...to improve the working and living conditions of over 75,000 (50,000 during phase one) inhabitants in the Yeji sector of Lake Volta, through the construction of a CFC. The project also aimed at increasing domestic food supply, particularly protein sources, through the more effective use of available fisheries resources at the regional and local levels, as a means of satisfying national protein needs as well as creating employment opportunities. The project also relates to the Capacity Building and Development Management for Poverty Alleviation.
Project immediate objectives during phase one were the following.

1. Establishment of a CFC with facilities and services to meet the needs of 50,000 fisherfolk.
2. Preparation of a management plan for operation of the CFC on self-sustaining basis.
3. Integration of women and youth into the fisheries and related income generating activities through training.

Second phase immediate objectives were the following.

1. To enhance the capability of the Department of Fisheries to establish by 1997 a CFC with processing facilities, training and social services to meet the needs of 75,000 inhabitants including 15,000 fishermen and 6,000 women fish processors.
2. To strengthen the capacity of the Department of Fisheries to undertake specialised activities associated with fisheries management on the Volta Lake and provide technical guidance for the operation of the CFC as a self-sustaining enterprise by the year 1997.
3. To create an enabling environment for 200 rural dwellers in various villages for additional employment opportunities including adoption of agroforestry/tree planting practices to control environmental degradation.

However, the physical establishment of the CFC or "market centre", the main objective and infrastructural component of the project could not be realised as planned during the first phase in light of the unforeseen difficulties. It became obvious that there was considerable fluctuation in the lake water level and the proposed site on which the CFC was to be established required land filling to above the 84.5 metre contour, maximum operating level of the Akosombo Dam on the lake. This is necessary to forestall inundation of the CFC. The relative dimensions of the proposed CFC facilities were not adequately spelt out in the project document. It was also realised that the volume of fish landings and the population using Yeji as market on a single market day and other ongoing business and activities required a vast market area, to accommodate the trade and provide basic services for its users. Funds allocated for establishment of the CFC were therefore inadequate. Although earlier arrangements had been for the project managers to collaborate with a project engineer and sociologist to supervise construction of the CFC either by a contractor, or on a step by step basis with community participation, this arrangement did not materialise as people required permanent structures on the CFC.

The lack of adequate knowledge about the socio-economic conditions and problems of the people in the project area at the beginning of the project was a hindering factor to implementation of project activities and extension of assistance to the fishing communities. It is as a consequence and in relation with prevailing constraints among others, that a tripartite meeting of UNDP, FAO and the Government of Ghana (GOG), recommended the execution of the project in two phases.

Intermediate Objectives

This culminated in the revision of the project document, and replanning of activities to concentrate on those objectives and activities that could be more realistically achieved during the first phase. Hence project objectives were revised twice, in 1990 and in 1991 giving rise to extensions in the first phase and various budgetary revisions.
New intermediate objectives of the project were re-formulated as follows:

the effective use of available fisheries resources through the maintenance of fish stocks, monitoring on a continuous basis through periodic surveys and the regular collection of fisheries statistics, with management assistance as necessary, through the regulation of number and types of fishing gears permitted, the reduction of postharvest losses and the development of value added products.

- an increase in employment opportunities for women, youth and others in the rural communities and in Yeji Township through the identification and provision of training in various fisheries and related disciplines and support services, and

- an improvement in the living conditions of the rural populations in the fishing villages and Yeji Township, through the provision of community-supported social services (i.e. health, sanitation and education) and through increased incomes derived from fishing and related support services.

Revised Objectives

The revised objectives which became the basis of the project from 1990 were the following:

(i) to complete by December 1990, all of the necessary plans and logistical arrangements for the construction in 1991 of a CFC in Yeji, with the basic facilities and services to meet the needs of 75,000 inhabitants of the Yeji sector of the Lake, including some 15,000 fisherfolk and 6,500 female fish processors and traders;

(ii) to complete by December 1990, a general management plan for the eventual operation of the CFC on a self-sustaining basis, including the periodic assessment of its impact on the beneficiary communities;

(iii) to establish by 1990, a fisheries monitoring system for Stratum VII of Volta Lake;

(iv) to approve by December 1990, a second phase of the project; and;

(v) to integrate, by end 1992, additional women and young people into fisheries and related income-generating activities, through either direct or indirect training programmes.

Attending problems did not permit establishment of the CFC and its facilities during the first phase. However the layout plan of the CFC and management proposals were achieved. With the insufficient budget for establishment of the CFC and the emerging prerequisite and imperative earth filling cost of the selected site for the CFC, funds required far exceeded those allocated for construction of the CFC and its facilities. Hence the cost of the CFC was originally underestimated in the project document. Because the land filling of the site was not budgeted for, construction of the CFC had to be suspended while funds were sought for its establishment during phase two.

It is appropriate to have adequately selected the CFC site using experts and all relevant information to determine construction and related cost requirements for inclusion in the original project document. Project activities relating to establishment of the CFC such as site selection
and land preparation, could have been made pre-project identifications. This would have prevented the resulting delay, ensure early delivery and prevent the ensuing erosion of trust from the people many of whom experienced losses when they were evacuated from the selected CFC site and their stalls and residences demolished.

However, having gone by the above experiences it became appropriate for the project to commission socio-economic baseline and various other studies relating to fishing, processing, marketing and other activities. These studies provided basic information for planning and implementation of project activities. Socio-economic studies and training activities became relevant preparatory and planning work for project activities, including establishment of the CFC and related activities. They became the basis for assistance to the communities.

Re-direction of the project during the first phase, through costly and time consuming re-writing of project document, review and reformulation of project objectives, outputs and workplan with consequent budgetary reviews, to deal with realistically achievable objectives, was appropriate and effective for ensuring success. It allowed for better planning of the CFC complex and successful implementation of various project activities.

1.4.3 Infrastructure: Yeji and the Surrounding Villages

Yeji is by all standards semi urban. But it misses all the basics which will qualify it as a town. Water for drinking, washing or bathing comes from the Lake. Consumption of such untreated water has been responsible for the high rate of diarrhoeal diseases reported by the recently opened Catholic-run Yeji Mathias Hospital. At the time of this study, the Ghana Catholic mission run Water and Sewage Corporation (GWSC) is yet to resume operations of supplying water through a 50,000 gallon capacity overhead tank.

With the tank pumps in dire need of rehabilitation, Yeji has to depend on the few wells, bore holes and the Lake for its water supply. The CFC facilities have plans to pump water into elevated containers which would then be distributed by gravity.

Toilet Facilities:

The number of houses far outstrip the number of toilets in Yeji town. Only 43 houses have toilet facilities. Many residents use the 18 public pit, pan and dug latrines (Osei Bonsu, Nov. 1995).

Waste Disposal:

Sanitary conditions are appalling in the villages where there are no sites for dumping. Rubbish tips are a constant source of disease.

Others:

Other importance structures in Yeji are the Post Office, the 20 primary schools, 11 junior secondary schools, one senior secondary school, two fuelling stations, one private school, eight day care centres, five hotels with 56 rooms, seven restaurants, one commercial bank and one Police post.
Yeji is still to be connected to the national electricity grid for power to reach it from the Akosombo network. The town's large generator owned by Yeji Secondary Technical School has broken down for some time, although the cables are still intact with possibilities of connection to the national grid via Atebubu, 41 miles away. The realisation of the CFC will bring electricity to Yeji.

Administration:

Authority in Yeji and the fishing villages lies with the headmen, who have a lot of influence. Each ethnic group has its own head man who is usually the founder of the settlement or one of its oldest settlers. They settle disputes between families, friends and neighbours.

When the waters of the Lake rose after the construction of the dam, fishermen were resettled in eight camps in Yeji, Makango and Buipe. The fishermen never fully settled in these camps but moved from time to time from one fishing village to the other in search of more lucrative grounds. This way, settlements mushroomed or disappeared. Housing, therefore, was of mud walls or walls with thatched roofing ideal for the migrant nature of the fisherfolk. The more permanent corrugated iron sheeting exists only on 1% of the houses.

Health:

There are no clinics or health posts in Yeji. Occasionally, a mobile health unit will visit the villages for immunisation and other primary health care campaigns. The Volta River Authority also operates a mobile hospital ship but visits are infrequent. Most of the villages look to Yeji, Globi, Lonto and Salaga for medical services.

Mathias Hospital provides most of the services for the villages. The doctor in charge said a cost recovery system is in place at the hospital and money collected will be used for the maintenance of the facilities. The Hospital is willing to row out to the villages if the community can make a boat available. Meanwhile, the health situation in the villages still remain deplorable (Osie, 1991), the most common afflictions being bilharzia, malaria and guinea worm.

Education:

Most of the fishing villages aspire to putting down structures to deliver primary education. In Hudideke village, the school has 26 children in Classes 1 - 6 and is built of raised bush stick framework with thatched roofing. The villages which have any form of school have structures but which only see a low turn out and only up to Level 3. Children who complete primary school have to travel to Yeji for secondary schooling.
2. PROGRESS OF DEVELOPMENT ACTIVITIES DURING PROJECT IMPLEMENTATION

In spite of difficulties faced by the project during its initial stages, it successfully planned and implemented various development activities during the first phase that formed a basis for subsequent activities during the second phase. By the end of the first phase in 1993 the project successfully implemented most of its planned activities. Development activities that produced valuable results continued during phase two.

2.1 Sensitisation and Involvement of the Communities

During initial stages of implementation, the Project held several consultative meetings with representatives of the Yeji community, national, political, district and local authorities. These meetings were aimed at sensitizing the communities, making decisions about establishment of the proposed CFC, as well as explanation of the objectives and potential benefits of the project to the people. As a consequence and in order to assist the project attain its objectives, the Yeji Fisheries Complex Committee (later re-named the Yeji CFC Implementation Committee (YCFCIC)) was formed comprising the chief of Yeji, national (local) District and village representatives, appendix 1. A regional and district implementation committee was also later formed, and it participated in coordinating activities of Government institutions associated with the project. It was in consultation with the Yeji Fisheries Complex Committee that selection of the CFC site, "Salt Town" (on which the people lived and on which the Yeji market centre was located at the time) got finalised; originally measuring 3.5ha and later increased to 9.6ha.

2.2 Establishment of the CFC and its Facilities

In order to accomplish this objective, in 1990 a consultant architect designed the CFC layout plan (see map Fig. 3) and its construction was programmed for two phases. The UNDP was to provide the funds for land filling of the CFC site whilst the GOG was responsible for funds to construct the centre and its facilities. During the second phase, it was in May 1995 that UNDP provided the US$400,000 cost, and the implementation of the land filling works was contracted to a local company. The Government of Japan provided 1.2 billion cedis (about US$1.2 million) for the GOG to undertake construction of the CFC and its facilities. When complete it will have a mix of technical and social facilities to support the activities of the fishing communities dependent on Yeji for marketing of their produce. Planned facilities include shops, lock up stores, fish smoking sheds, warehouse, mechanical workshop, carpentry workshops, offices etc..., see Appendix 2.

With locals employed in the work, land filling of the CFC site got completed in November 1995. Structural drawings of the CFC facilities were prepared and construction work on the facilities started immediately by a local contractor with supervision from a resident project engineer. The eventual accomplishment of the CFC and its facilities is expected by the end of December 1996, about which time the project phases out.

2.3 Management Plan for Sustainable CFC

The CFC is expected to provide facilities for landing, handling, processing, storage, marketing, and social services to support the activities of fisherfolk and related groups. It is expected to contribute to improving the working and living conditions of over 75,000 people in the Yeji sector of Lake Volta.
Fig. 3 LAYOUT PLAN OF THE YEJI COMMUNITY FISHERIES CENTRE
In preparation for its operation and management, a management study was commissioned during the first phase in 1991 with the resultant drawing up of management proposals for the CFC in Yeji when it is completed. Management is based on lines of a limited liability company. The so-called shareholders without financial contribution include: The Atebubu District Assembly (ADA) in whose jurisdiction the CFC market falls; the CFC itself, Yeji Town Development Committee (YTDC) which is responsible for town development activities and the Yeji Traditional Council (YTC) under the traditional chief or "Omahene" of Yeji to whom traditional royalties are paid. The Board of Directors includes representatives of local institutions having financial interest on the CFC (Boateng, 1991), or local development obligations. In order for the CFC board to respond to problems of the users a User Consultative Committee comprising users and management, and a Review/Planning Committee will be instituted; See Appendix 3 for the proposed membership of the CFC Board of Directors and the management committees.

As the facilities will be rented to users and services charged, revenue accruing from the CFC will be shared between the share holders in the proportions of ADA (40%), CFC (35%) and the YTDC and YTC (25%). However, the management proposals have not been altered since it was drawn although several developments have taken place since then. Prominent among these has been the proliferation of market construction proposals in Yeji and a cut in the number of proposed facilities.

2.4 Direct Assistance to Project Beneficiaries

In the absence of a functional CFC and its facilities and services during the first phase and in order to achieve its objectives, the project embarked on activities to assist the communities of Yeji and the other fishing villages of the project area.

Due to lack of adequate information on the project area, and in order to meet project objectives relating to creation of additional employment through skills training programmes, the project commissioned socio-economic and related studies on the project area through its socio-economic information system. On these basis, the socio-economic conditions and activities, constraints and needs of beneficiaries could be identified. As a result project areas of assistance to the communities could be determined and planned. These were achieved through national and international consultants. Based on the studies it was concluded that fishing villages were disadvantaged by their location and lack of socio-economic facilities and skills. Among the main socio-economic limitations of villagers were:

(i) lack of favourable terms of credit to establish sustainable economic activities;
(ii) increasing price of fishing inputs;
(iii) decreasing quality of catches landed and lower fish prices;
(iv) shortage and high cost of fuelwood for fish smoking activities etc.;
(v) lack of schools for children and health facilities for the community;

It was also concluded that their living conditions could be improved by establishing village development projects and providing training in technical skills for disadvantaged persons.

2.4.1 Technical Training Activities

In order to integrate youth and women into the fisheries and related income generating activities, the project began to implement a technical training programme for project beneficiaries. Formation of various beneficiary groups was initiated and training activities for technical skills development and other forms of assistance effected.
Training of Fishermen. Four project fishermen were trained in 1990 as potential instructors, on construction and operation of new fishing gear with anticipated demonstrations later in other project villages. Different fishing gears were constructed as potential, alternate fishing gears on the lake. The Project's fishing gear section undertook with fishermen, trials with newly developed gillnets. Gear selectivity trials are undertaken with fishermen and demonstrations were to be conducted for fishermen in selected fishing villages. The gear section constructed ten (10) models of "winch nets" (purse seine nets) on request by Fisheries Department and which were used for campaign against their use.

Training of young fishermen was planned during the first phase. However, this could not be accomplished in the absence of training material and facilities in the CFC, yet to be built. During the second phase, in the first half of 1995, young school leavers who could not find jobs were recruited as the first batch of trainees on the planned fishermen training programme. From the original 37 applicants only six were eventually selected and the only woman applicant failed the interview. A time table has been drawn and the hostel to house the training programme is being constructed. Training which is to last for nine (9) months for each batch of trainees is expected to start soon.

Training of Boat Builders The project enlisted 21 master boat builders and 51 of their apprentices in Yeji in 1989. By 1990 with supervision from a project expert consultant Naval Architect, who studied and gathered local boat construction information, 14 master boat builders received on-the-job training in boat construction. The project provided supporting tools, a generator and other material for training which were handed over to the boat builders afterwards. Training focused on refinement and strengthening of the existing Yeji-style vessel, aimed at improving durability and prevention of frequent boat accidents in the area and strengthening the capability of the boat builders who are the main builders of boats in the project area. A fisheries carpenter boat builder who understudied the project consultant boat builder remained permanently with the project. The boat builders afterwards built several vessels for the project and had boat building contracts both from government and the public. However, the improved boat constructed, became too expensive for fishermen to adopt. The Boat Builders later became organised into the Yeji Cooperative Boat-Canoe Builders' Society Ltd, and is now registered into the National Register of cooperatives.

Training of Outboard Motor Mechanics Nine (9) outboard motor mechanics in Yeji and one Fisheries Artisan Mechanic received training in outboard engine repair and maintenance in 1990. Supervised by a project consultant outboard motor mechanic, training involved fault diagnosis and handling of outboard engines (OBEs). The project bought mechanic tools for the training activities that were later given to mechanics for use in their daily work. In addition, a number of fishermen in various fishing villages received educational instructions on the use of two-stroke engine oil sold by the project, for improved efficiency, durability and reduction of risks over boat accidents on the lake. As part of the training and as means for awareness campaign, outboard motor repairs were also organised in various fishing villages during which fishermen's OBEs got repaired.

Numeracy/Literacy Training and Bookkeeping Courses Villagers in Yeji and nearby project villages benefit from literacy and numeracy classes organized through project collaboration with Non-formal Education Division (NFED) of the Department of Education. A three days course for facilitators and supervisors was organised in Yeji by NFED. Following success of the trial class, in Yeji, over 250 participants are now enrolled in eight literacy classes in Yeji and surrounding villages of which about 85% are women. Following graduation the classes proceed to the training course on simple bookkeeping and business management.
**Training and Demonstrations in Fish Processing for Women** Women constitute the main force in the post harvest sector, exclusively processing and marketing the fish caught and landed in Stratum VII. Processors use large quantities of fuelwood in low efficiency, round or rectangular ovens and cut-up drums. Therefore construction of improved fish processing facilities were initiated in Yeji and near-by villages for training of women through demonstrations. With their participation, introduction of the more fuel-efficient chorkor oven, with increased capacity and improved end product quality attributes was initiated by the project during the first phase. Several women benefitted from demonstrations with expected multiplying effects of acceptability and adoption. The demonstration ovens are used as communal processing facilities which are in regular use.

The project fish processing Unit in collaboration with the Women In Agricultural Development (WIAD) Project constructs with local material, and introduces to users, "integrated fish processing facilities" comprising: a chokor oven, energy-saving cooking mud stoves, insect proof kitchen cupboard and store for storage of processed fish. All housed under a single roof, the facilities provide adequate working space and allow women to concentrate on other household activities while smoking fish. The demonstrations continued in 1995 with increasing number of women and other commercial users. Demonstrations now include soya bean utilization programmes and take place in more project villages. It is anticipated that with the arrival of a National Professional Project personnel on fish processing in the project, demonstrations will be intensified and extended to more project villages.

**Training of game wardens** In 1992 the project organised an eleven week training programme for two game wardens from the Digya National Park in the project area. Training was aimed at enabling game wardens to effectively play their role in safeguarding resources of the national park against poachers. Training involved navigation on the lake and handling and maintenance of craft.

2.4.2 **Collaboration on Implementation of Integrated Activities**

In order to adapt the integrated approach to development, the project took to a multi-disciplinary approach through mobilisation and integration of various government institutions to implement project activities. Through the Department of Fisheries, contractual agreements were signed with various Government Departments and NGOs to implement project development activities. At the beginning of 1992, the project approved and funded various programmes of activity by the various institutions. Such activities included demonstrations on draw down farming during the dry season; establishment of tree nurseries for afforestation through fruit and fuelwood tree planting; immunisation of mothers and children; water wells and pit latrines; the formation and training of fisherfolk cooperatives, training in literacy and numeracy classes for business operators; bush fire education programmes and rural women development activities etc... From 1992 into the second phase the project signed nine agreements. Sequel to these agreements various activities were undertaken with the communities including the following.

**Conduct Numeracy/Literacy and simple bookkeeping courses for business management**

With the background aim of developing an acceptable accounting system for operators in preparation for a functional CFC, the Project collaborated with the Non-formal Education Division of the Ministry of Education to conduct numeracy and simple bookkeeping classes. The NFED trained 46 potential facilitators in the Yeji project area. The literacy training programme now involves over 250 participants in eight classes in the area, on the course "Figures for Simple
Bookkeeping". On graduation from this course, participants will proceed to the course: "simple Bookkeeping and Business Management".

From the trial adaptation class, 25 women successfully graduated with satisfactory performance in figures for book-keeping. In Yeji, the Dzigbordzi Literacy Class presently comprising 29 women and 1 man who are engaged in a variety of business activities have successfully completed a nine months literacy course on figures for book-keeping and nine months on book-keeping. The class progresses onto a prima course in national languages and English language. The class also receives general education studies on various topics including environmental education with emphasis on health and tree plantings etc.

**Formation and training of Co-operative Societies** The Project, in agreement with the Department of Co-operatives, initiated, during the first phase, a programme to revitalise, train and promote the graduation of various economic associations (i.e. beneficiary trade/user groups) into viable co-operative societies. About twelve project-linked co-operative societies now exist in Yeji and other project villages while others are in the process of formation. The various co-operative societies and their characteristics are presented below in table 2. The societies receive cooperative education from a resident technical Cooperative Officer from the Department of Co-operatives who is supported by the project. As the project aims to address the credit issue of fisherfolks the cooperative training programme upgrades and strengthens the co-operative societies in preparation for administration of the Project revolving loan fund. For this reason members are enthusiastic in co-operative organisation.

**Table 2:** Main IDAF-Yeji Project-linked Co-operative Societies.

<table>
<thead>
<tr>
<th>Cooperative Society</th>
<th>Active Membership</th>
<th>Status of Society</th>
<th>When Formed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yeji Cooperative Boat-Canoe Builders, Society Ltd.</td>
<td>22</td>
<td>Registered</td>
<td></td>
</tr>
<tr>
<td>Yeji Co-operative Fishing Processing and Marketing Society Ltd.</td>
<td>400</td>
<td>Registered</td>
<td></td>
</tr>
<tr>
<td>Ada Okor Co-operative Fishing Society Ltd.</td>
<td>80</td>
<td>Registered (1977)</td>
<td>1976</td>
</tr>
<tr>
<td>Yeji Co-operative Lake Transport and Fishing Society Ltd</td>
<td>45</td>
<td>Registered</td>
<td></td>
</tr>
<tr>
<td>Yeji Co-operative outboard Motor Mechanics Cooperative Society</td>
<td>-</td>
<td>Non-registered</td>
<td></td>
</tr>
<tr>
<td>Yeji Co-operative Salt Sellers' Society Ltd.</td>
<td>45</td>
<td>Registered</td>
<td></td>
</tr>
<tr>
<td>Yeji Co-operative Fishing Net sellers' Society</td>
<td>43</td>
<td>Non-registered</td>
<td>1989</td>
</tr>
<tr>
<td>*Yeji Co-operative Out Board Motor Spare Parts Dealers' Society</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Kadue Gbordzikope Co-operative Multi-purpose Society</td>
<td>45</td>
<td>Non-registered</td>
<td></td>
</tr>
<tr>
<td>Vutideke Co-operative Fishing Processing and Marketing Society Ltd.</td>
<td>60 (42 men and 18 women)</td>
<td>Registered</td>
<td></td>
</tr>
<tr>
<td>Yeji Draw Down Farmers and Marketing Society</td>
<td>20 (15 men and 5 women)</td>
<td>Not registered</td>
<td></td>
</tr>
</tbody>
</table>

**Immunisation Against Diseases** In collaboration with the Ministry of Health, a village Immunisation Programme was initiated in 13 project villages for children and women of child bearing age (12 to 45 Years) in the project area. Children are immunised against six killer diseases: tuberculosis, measles, diptheria, whooping cough, tetanus and poliomyelitis, and women against tetanus.
**Assistance to Draw Down Farmers** With the collaboration of the Agricultural Extension Services of the Ministry of Food and Agriculture, the Project assists draw-down farmers in the project area with inputs: improved seeds, (tomatoes, okra, cowpeas, tomatoes, etc.) fertilizer and agro-chemicals. Technical advice is given and improved methods demonstrated. The farming system is practiced seasonally by farmers on the banks of the lake when the high waters recede. The farm produce is used to supplement the diet and for sale to raise additional income.

**Afforestation Programme and Establishment of Fuelwood Lots and Orchards** Lake side vegetation cover is heavily exploited for fuelwood and other domestic uses including construction, yam staking etc. In order to address the environmental implications of increased fish processing activities on forest resources, in 1992 the project with assistance from the Extension Department, embarked on a reafforestation education programme in project fishing villages. In collaboration with Forestry Department among others, the Project complements Government’s reafforestation efforts by developing tree nurseries and conducting demonstrations on afforestation activities including tree planting and establishment of woodlots, plantations and orchards in various project villages with participation of the local communities. Over 100,000 seedlings were produced in collaboration with Forestry Department and the exercise is continuing. In association with Extension and Agroforestry Departments tree seedlings (Leucaena, Teak, Cashew, Cassia etc.) are distributed to lake side villages, schools, churches, institutions, families and individuals. Tree planting demonstrations are conducted in lakeside communities.

Mature trees are harvested for fuelwood or in the case of cashews and other fruit trees, for consumption or commerce. Demonstrations are also held in villages on the economic potential of production and utilisation of cashew nuts.

**Tree Cover Depletion Minimisation Micro-project** With consultancy work, impact assessment of the IDAF-Yeji Project on the forest ecosystem was conducted. In order to continue efforts to address the effect of fuelwood used in fish smoking and other domestic and commercial activities, the project organised an inter-sectoral consultative seminar in 1993 to generate inputs to the micro-project on: Tree Cover Depletion Minimisation (TCDMP). The Project is funded by the Volta River Authorities (VRA) at the cost of US$220,000. It became operational in June 1995 and is executed by the Fisheries Department. With expected duration of 3 years and 4 months, activities are implemented under the IDAF Project. Several Government Departments collaborate on the TCDMP including: Department of Forestry, Extension Department, WIAD and Agroforestry.

The project aims at the restoration of some 1,442 acres of tree cover and 60% minimisation of tree resources depletion through sustainable afforestation/agroforestry practices and utilisation of fuel efficient and energy saving methods for fish smoking and other activities in 152 fishing communities in Stratum VII. A central seedlings nursery is established comprising various tree species (Teak, Leucaena, Albecia, Cashew and Cassia). From these, the various parties to the project effect demonstration tree planting exercises in lake side villages.

With community participation, the Project and its collaborators on the TCDM project have already planted over 100 acres of trees in lake side villages in the form of woodlots, orchards, plantations and roadside decorations. Individuals and families are registered and supplied seedlings for planting in family fields and in homes for shade and beautification, and for future harvest for fuelwood for fish smoking or domestic and other commercial purposes. Meanwhile, the forestry Department conducts bush fire prevention education campaigns.
2.4.3 Other forms of Direct Assistance

With the aim to assist small-scale business operators in Yeji and the fishing communities in the project area with access to credit, the project established a RLF credit during its second phase. Guidelines for operation of the credit are being drawn and will be based on the successful operation of the RLF of the Integrated Agricultural Development Programme in the Sekyere West and Ejura-Sekodumasi Districts in the Ashanti Region of Ghana (GHA/85/011), which was administered by a management committee through organised co-operative societies. The target beneficiaries for the project RLF are members of the communities in Stratum VII who are members of co-operative societies or informal groups operating under a constitution. Where applicable, credit is to be given in kind. The main target beneficiaries are women fish processors and traders. However, the amount of money available on the RLF (15 million cedis) compared to the number of needy potential beneficiaries in the fishing communities, is relatively small. It is estimated that some 200 million is required for the credit needs of fisherfolk (Osei-Bonsu, 1995b) in the project area. In order to increase the amount the project ordered outboard motor spare parts to be sold to boat operators.

With intervention from the project, the Ministry of Food and Agriculture (MOFA) extended its Small holder Credit Input supply and Marketing Project (SCIMP) credit facilities from the International Fund for Agricultural Development (IFAD) to the project area. This is administered through a local bank, Yapra Rural Bank in Yeji and is initially benefitting the Yeji Co-operative Fish Processors and Traders Society. Repayment rate for the first loan disbursement of 40 million cedis was recorded at 100%. Subsequent disbursement is expected to be equally good.

As a form of direct assistance aimed at strengthening boat builders and outboard motor mechanic co-operative societies, the Project constructed a small tools store for the two societies and a new workshop for the mechanics. Tools, equipment and material were provided as project assistance. Two-stroke engine oil is sold by the project to enhance durability/longevity of OBMs and reduced risks of frequent boat accidents on the lake. Life saving jackets were also sold as well as pre-mixed fuel. However, due to high cost, the latter was discontinued.

The Project bought outboard engine spare parts worth US$30,000 for sale locally at reasonable price to improve the availability of parts and support fishing and transportation activities. Proceeds of sale go to replenish the Project Revolving Loan Fund created for disbursement to beneficiary groups.

In the interim that the CFC could not be realised earlier than originally planned, in 1991, the Government of Ghana demonstrated its commitment to construction of the CFC by providing funds and collaborating with the Project to construction ten salt shops in Yeji, close to the CFC site. The Yeji community participated in the construction by providing communal labour and free access to sand and gravel. These are rented to salt sellers whose stalls were demolished during clearing of CFC site and whose commodity was being exposed to rain and dust.

The Government built and furnished project staff houses (Bungalows) for the free accommodation of government project staff. The project office is provided with electricity from a generator and three bore holes sunk for supply of potable water to project staff houses. Government also provided the "Ring Road" around the CFC site to facilitate movement and take heavy traffic out of the CFC market area.
Although provision of water and electricity for Yeji and the CFC in particular have always been high on the agenda, efforts are yet to materialise this wish, due partly to delays in the second phase of the project and consequently on the absence of the CFC. However it is anticipated that with construction of the CFC, the national electricity grid will be extended to Yeji and supply electricity to the CFC. The project signed with the Ghana Water and Sewerage Council an agreement to supply clean and safe water to the CFC from bore holes and elevated tanks. However, this is yet to be realised. As most villagers fetch their water from the Lake, the Project attempted to develop in collaboration with the Institute of Science and Technology in Kumasi, water filters for introduction to village communities as a form of preventive health care measure. This however has not materialised yet and is being pursued.

The project provided funds for construction and equipping of a children's play ground in Yeji with collaboration from the Department of Social Welfare. It donated a refrigerator to the local hospital (Mathias Hospital) and with community participation, constructed KVIP toilets for communities in the Yeji area. It also established an IDAF Welfare Fund to which staff members contribute and from which project staff are assisted with TVs, bicycles and sewing machines.

2.5 Collaboration with Research Institutions and NPPP Consultants

Fisheries Monitoring System For Stratum VII With the objective to strengthen the capabilities of the Department of Fisheries in specialised activities including technical advice, research, fisheries monitoring and management related activities on the Lake, and in order to undertake a fisheries management programme for Lake Volta, the project through the Department of Fisheries, signed contractual service agreements with research oriented national institutions. These are: the Institute of Aquatic Biology (IAB); the Food Research Institute (FRI) and the Department of Oceanography and Fisheries of the University of Ghana (DOF/UG). National Professional Project Personnel (NPPP) are also recruited, initially as long term but later short term consultants to conduct research activities and provide fisheries management and development information. They work with project technical staff and the support staff from collaborating institutions and together constitute the Fisheries Development Unit and Management Information Unit of the project.

The FDU and MIU are to undertake specialised activities in relation to fisheries management and development on the lake and to guide the management of the CFC as a self sustaining enterprise. Their activities constitute the fisheries monitoring system for stratum VII based in Yeji. They are to provide efficient extension services, collate marketing information and biological data and to advice on the policy and economic performance of the fishery enterprise in the Yeji sector of the Volta Lake. However, the units are yet to be fully operational because the required NPPP expert consultants have only partly been filled. The "NPPP consultant specialist on stock assessment" and Socio-economist have commenced work, but recruitment of the fish processor, gear technologist and civil engineer are yet to be finalised.

The IAB conducts fish biology studies (or fish resources monitoring) involving the monitoring of the seasonal availability of over forty selected fish species and their biological parameters. The fish resource monitoring team is headed and supervised by the NPPP Project consultant on stock assessment and he works periodically with a visiting FAO Fisheries Consultant biostatistician on Stock Assessment, to initiate and develop research methodologies and to strengthen the capabilities of national project staff in executing specialised activities. Other
members of the team include four trained project fishermen, two technical fisheries officers attached to the project, a gear specialist from DOF, technical support staff and skipper from the IAB. The team engages in three types of studies: frame surveys of Stratum VII; catch assessment surveys and a stock assessment programme for stratum VII. Project and other technical staff are trained on-the-job by the consultant specialists. Processing of data is facilitated by use of computers and operators who were trained under the project. When successfully developed, the methodologies are to be extended to cover the entire lake, aimed at developing a Volta Lake monitoring system for management and development of the entire lake fishery. Through this system a Volta Lake Assessment Team to be stationed in Yeji is being conceptualised for effective monitoring of the entire lake fishery.

As part of the fisheries monitoring system and in order to augment catch assessment surveys, fish caught from stock assessment sampling surveys are used in experimental smoking and drying trials by the project's fish processing section. This is aimed at determining conversion factors for processed fish on which catch assessment data is based. However, the processing section is generally weak in the absence of the consultant. Processed fish landings and market prices are monitored for catch assessment and for collating of market information respectively.

Under the agreement between the Project and FRI, the institute conducts investigative studies on the feasibility of marketing fresh fish from Yeji and other project villages in major markets in Kumasi and Accra. The project supports the activities and ordered an ice plant of 800Kg/day capacity for the study. Initial indications are that the exercise is profitable. If feasible the trade is expected to contribute to reduction of the effect of fish smoking on the environment and the development of added value for lake fish.

With the assistance of the project, an MPhil student from the DOF/UG is conducting biological studies, for his thesis research Programme, on a major commercially important fish species, Chrysichthys spp, in the Lake. He also focuses on a controversial fishing technique involving the use of bamboo pipes in which mainly breeding stocks are caught. An equipped laboratory and offices are provided for work of the research scientists.

In pursuance of the objective to strengthen the Fisheries Department, and enable it to fulfill its responsibilities regarding fish stock assessment monitoring and fisheries management, dissemination of market information, and provide extension services at the village level, training programmes are integrated into project activities for national project staff. They received sponsorship for training courses in management and technology both locally and abroad. Such courses are on fisheries management, stock assessment, gear technology, fish technology etc. National seminars, symposia and workshops are organised by the Project with themes centred around development and management related issues. These also form basis for communication of project activities to national institutions and other development partners. Project staff are also funded on study tours to integrated fisheries development projects and workshops around the West African sub-region.
3. RELEVANCE, EFFECTIVENESS, AND EFFICIENCY OF MECHANISMS AND APPROACHES TO DEVELOPMENT IN THE IDAF-YEJI PROJECT

3.1 Community Participation

People's active participation is a major principle of the integrated approach to fisheries development. Since they are the ultimate beneficiaries, community involvement is essential to successful implementation of project development activities and initiatives, and to the attainment of objectives. The community is the essential mass whose aspirations, desires and needs are addressed in a variety of ways including social, economic, technical, institutional etc... Since development itself is integrative and dynamic the people constitute the core vehicle of development, they should also be an integral part of the development process.

Hence, the objective involvement of project beneficiaries at the very beginning of the various project activities including project identification, planning and implementation of development and management activities is a vital element in the integrated development approach. It enables people to identify their own needs and local problems, participate in project implementation and contribute to decisions. However, active participation must also have the effect of organising and empowering communities for self-reliant development and management following termination of external assistance.

In Yeji, Project identification and formulation involved community representatives. However, the ultimate beneficiaries themselves were less involved in decisions about the project. Knowledge about the project can best be recalled by many beneficiaries from when they were traditionally summoned to a meeting at which they were asked to vacate the proposed CFC site they occupied. There was bitterness and protest as they were to lose settlements and part of their investment at the former market centre. There was little understanding about what the project was all about or what it meant for its beneficiaries.

Therefore, during the initial stages of project implementation, the project convened several meetings to sensitise communities on project objectives, activities, potentials and benefits. Through such sensitisation meetings, awareness was created about the project. Also in order to assist the project meet its objectives and in the effort to involve local people in project activities, the Regional Implementation Committee and the Yeji CFC Implementation Committee were formed comprising community leaders and district, traditional, NGO and town representatives. Fisherfolk themselves were not adequately represented. However, sensitisation meetings and formation of the committees ensured awareness about the project and established good working relationships between the project and the communities.

In effect, the IDAF-Yeji project adopted the participatory principle of the integrated approach to small-scale fisheries development but the mechanisms of community involvement is less well developed. The strategy advocates for active participation by the community in both the planning and implementation of development activities to induce the climate of mutual trust and responsibility and permit fisherfolk to best determine their needs and priorities and contribute to development and management activities (Satia, 1993). Active participation also requires that beneficiaries are involved in making the decisions and plans about development and management. To be effective there is need for the people to be organised and empowered for effective planning and management in the interest of beneficiaries. Of great significance is that people must be able...
to learn through a process of interactive participation to plan and manage their development on a sustainable basis.

The project assisted and organised the formation of beneficiary groups that are involved in implementation of project activities. However, they are not adequately involved in management activities and decisions. This is exemplified by the limited representation of user groups on the Yeji CFC Implementation Committee, with only one co-opted member of economic interest groups. Proposed management of the CFC is based on a Board of Directors headed by an appointed manager under whom management staff will serve. The Board does not have the direct representation of the user groups nor are women represented. Instead, a Management/User Consultative Committee is proposed which will comprise of representatives of existing user groups and senior CFC management staff. The committee is to deal with explanation of CFC management principles to users, ensure good working relations with the Board and to resolve user problems and complaints. The User Committee is to also act as allocation committee for CFC facilities. However, final approval for allocation rests with the Board. Under the proposed CFC management system, it should be ensured that the users' interests are not marginalised. For increased effectiveness it may be necessary to incorporate major cooperative societies as stake holders to the CFC to adequately represent the interest of users and hence create an environment of mutual trust and cooperation.

3.2 Socio-economic Information Systems For Monitoring and Evaluation

Socio-economic baseline studies effectively provide knowledge about the conditions, needs and problems of beneficiaries. The studies made available information about the communities that facilitated planning and implementation of project development activities. It was through the socio-economic studies and the participation of national institutions in project implementation that the project began to directly assist its beneficiaries towards improvement of their living conditions. The studies also established baseline information on parameters through which impact and progress of development initiatives in the project area can be measured when the CFC becomes operational. The studies are updated periodically and provide basis for continued monitoring and evaluation of the socio-economic conditions of communities and their activities.

3.3 Organisation and Upgrading of local Fisherfolk Interest Groups

Organisation of User groups into co-operative societies and various training, awareness campaigns and demonstration activities contributed to upgrading of the societies and improved skills and technology transfer. With the collaboration of Government and other local institutions of varied discipline, local development efforts were mobilised that rendered training, awareness and skills to the people. Consequently, viable cooperative societies are formed that are being strengthened through training by the Cooperative Department. Having met the graduation requirements including: holding of regular meetings; establishing an office; employing a secretary; adherence to cooperative principles and practices; keeping a bank account and up-to-date accounting books etc., five of the project related co-operative societies in Yeji and one more in the village of Vutideke have now been legally registered with the national Registrar of Cooperatives. Other project and non-project related cooperative societies in Yeji and other project villages are undergoing the graduation process with many desiring to be associated with the Project.

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The co-operative societies constitute important organisational structures through which project, government and NGOs reach the communities to assist them. Society members meet regularly to discuss issues affecting them and their operations. Virtually all the co-operative societies have initiated member contributions and established savings with local banking institutions. Individual members of the cooperative societies also maintain personal savings derived from business operations. These initiatives effectively promote the development process as beneficiaries attempt to save and obtain finances for the continued operation of their businesses. Savings could form effective basis for capital development and investment if adequately managed. Monies accruing from economic activities of individuals are used for family up-keep, education and health. However, cooperative societies will require further training and advice on organisation and management aspects for more effective utilisation of their potential. In particular, they require skills relating to micro-project planning and implementation for viable small-scale enterprise development, necessary to the continued and sustainable improvement of the socio-economic conditions and standard of living of communities. They could also form basis for involvement of locals in the management and organisation of community development initiatives if this potential is adequately exploited.

Numeracy, literacy, and simple bookkeeping courses enable development of simple accounting systems for operators and enhance the viability of socio-economic activities of beneficiaries. The courses are beginning to have effect on operators as many now keep records and keep track of business transactions. With the progressive nature of the classes and the keen interest demonstrated by beneficiaries, it is likely that numeracy classes will effectively improve the business operations of beneficiaries.

3.4 Strengthening of Local Institutional Capacity for Long-Term Technical Support on Fisheries Monitoring Management and Development

The FDU and MIU constitute local institutional base for delivery of technical and managerial expertise and guidance of the viability of development activities. Fisheries Research and data collection on Lake Volta had virtually ceased since 1978 when the then Volta Lake Research and Development Project stopped. With the presence of the IDAF project in Yeji and its MIU, various research and monitoring activities are in progress in Stratum VII. These include, fish biology studies, catch and stock assessment, frame survey and the monitoring of processed fish landings and market prices. Design and study of various fishing gears and gear selectivity trials with intentions for the eventual replacement of destructive or illegal fishing gears. The studies are complemented with extension activities in fishing communities including sensitisation and awareness activities about the fisheries laws of Ghana and various training and extension activities. Participation of collaborating national institutions and experts upgrades and strengthens the capacity of the units.

The Fisheries Department intends to extend the activities to cover other parts of the Lake under the envisaged forth coming Fisheries Sector Capacity Building Project. With these activities in progress, the project is effectively contributing to the provision of vital information and services both for management and development of the Lake fisheries. The MIU provides on-the-job training activities for Fisheries Department staff on the project in Yeji and from other parts of the lake in data collection and analysis. This and the training of Fisheries Department staff abroad and the various study tours are aimed at strengthening the capacity of the Department to perform its role of fisheries management, development and extension.
Expert collaboration with project staff and the training they render to them are effectively upgrading and strengthening the capability of the Fisheries Department and associated partners to provide the long term technical expertise and support required to deliver efficient extension services, collate marketing information and biological data and to advice on technical matters relating to policy, economic performance and viability of the fisheries enterprises in the Yeji part of the lake.

The FDU provides fisherfolk with technical support in terms of technical training for skills development and technology transfer, upgrading of the organisational capacity and improvement of production potentials of fisherfolks and their societies.

As sustainable development goes with a sound information base, for management and guidance of development actions, activities of the MIU in fish resource monitoring and related activities are relevant and effective for generation of information base required for sustainable management and development of the lake fishery on which major economic activities in the area depend.

However, in the absence of the remaining NPPP experts, the units are yet to be fully developed to efficiently carry out their tasks. Time and resources are required to strengthen them and boost their capabilities. It is anticipated that when the expertise required becomes available, activities of the units will increase. Since the FDU and MIU are still in their early development stages, they require further strengthening and support to provide, on a sustainable basis, the necessary long term technical expertise for fisheries monitoring, development and management. Efforts should therefore be made to ensure the speedy availability of the expertise and continued support to the institutions both during and after project intervention.

3.5 Mobilisation of Local Expertise and Efforts for Integration of Development Activities

The project's strategy for integration takes cognition of the vital and effective mechanism of mobilising a multi-disciplinary team of development actors from various government institutions and national experts of varied disciplines. The various protocols of collaboration between the project and government institutions ensures assistance to a wide spectrum of the fishing community to aid the process of development in not only the vertical echelon of fishing and related activities but also in a horizontal manner to incorporate non-fisheries activities of the communities. Collaborators are drawn from a multi-sectoral dimension (fisheries, agriculture, forestry, education, community development, health, social welfare, cooperatives and extension sectors; research institutions, NGOs and existing projects) to reach the various sectors of the community for development assistance. The mechanism also provides avenues for improved capability of development workers through training.

The various project activities and involvement range from fishing technology, fish handling and processing technology, fish marketing, boat building, outboard motor repair and maintenance to fishing input and spare parts supply, training and skills development, reforestation, farming, stock assessment and fisheries monitoring activities. Health, education and related awareness building programmes are also in progress. Unfortunately, many other planned integrated community development activities had to be dropped due to inadequate financial resources.

The move by the project to associate development partners in the development process of the lakeside communities has generated much interest from partners and ensured an integrated
approach to development. Collaboration on the project's afforestation programme and related activities with community participation, has raised the awareness of project beneficiaries on the need for tree planting and effectively addresses the impact of fish smoking and other domestic activities on the environment. Hence it created basis for viability of these community activities. For continued effectiveness and improved efficiency of the mechanism it is vital that government maintains and continues to support and promote the collaboration of national institutions on the integrated development of the fishing communities.

3.6 Institution of Credit Facilities for Beneficiaries

With availability of credit for women fish processors and traders in Yeji from the IFAD credit scheme and accompanied conditions of savings and profitability of fish processing and marketing, they are making healthy business operations and savings. Successful operation of the project revolving loan fund will ensure improved mobilisation of financial resources and the institution of a financial system to provide credit facilities for support to the economic activities of fisherfolks and other members of the communities.

3.7 Technology Development and Transfer

Improved technologies such as the introduction and promotion of fuel-efficient cooking and fish processing technologies effectively improves smoked fish product quality and contribute to protection of the environment. The development of alternate fishing gears for replacement of damaging and destructive gears are also relevant initiatives. If adequately pursued, it will effectively enhance resource conservation practices. However, the absence of expert NPPP specialists on gear and fish processing technology seriously delays the progress of activities and hinders the efficiency of the mechanism of developing the local expertise for assistance and guidance.

In summary, the involvement of various parties and the wide scope and interrelated nature of the fisheries and other related community development interventions of the project, such as training, education, creation of awareness, afforestation, organisation, the institutional support systems etc... are relevant and effective mechanisms for integration. However, their efficiencies will have to stand the test of time as the organisational and institutional settings on which they depend are still young and yet to be fully developed and adequately strengthened.

Although all the fishing and related economic activities are profitable, there is yet to be adequate involvement and preparation of beneficiaries to participate in the management of their affairs following project termination. This is shown by the low degree of involvement of user groups and their representatives in management related issues and setups. The degree of spread of project activities to reach beneficiaries in other villages in the project area is still low. Considering the dispersed nature of fishing communities and the concentration of most project activities in Yeji where most beneficiaries visit weekly, it is anticipated that project interventions will have multiplying effects in other village communities. However, there is need for continued support from the project during its life time and from Government following termination of project intervention.
4. FACTORS CONTRIBUTING TO ADOPTION OF OR OPPOSITION TO THE APPROACHES

The lake fishery resource is the economic base of Yeji and supports the socio-economic activities of fishing communities dependent on it for livelihood. So, there is need for closer monitoring and application of management measures in light of techniques and trends in exploitation of the resources. In particular, such factors as population growth, fishing pressure, production output and the effect of destructive fishing practices are important concerns. Adoption of approaches to the project development interventions in Yeji are marked by a number of factors that generally promoted success.

4.1 Beneficiary involvement

People's participation in project development activities in Yeji has been motivated by sensitisation and awareness activities of the project during project implementation. Beneficiary organisations, training and other direct assistance activities stimulated and effected beneficiary involvement in project implementation. Beneficiary expectations for credit assistance, although yet to be adequately realised, has also been instrumental in mobilising beneficiaries to form cooperative societies and participate in project activities. However, the degree of involvement of beneficiaries in terms of their participation in management issues and setups is low. Since communities are the users of the resources and facilities, it is vital that they are mobilised and provided with the awareness, organisation and training to earn them the capacity and opportunity to participate in management of resources and facilities. This creates the necessary collaboration, trust and responsibility for sustainable management and development. Hence there is a need for local institutional units to involve beneficiaries and community members in management issues, particularly with regard to fisheries and forest resources.

4.2 Mobilisation of Local Development Effort and Resources for Integration

The willingness of Government and other national institutions and NGOs to collaborate and associate with the project ensures mobilisation of local development efforts and human resources to effect research, training, organisation, transfer of technology and other development activities. The mechanism enhances adoption of the integrated community development activities of the project and ensures assistance to a wide spectrum of the community.

The conduct of research, extension and monitoring activities are also substantially developed and they strengthen the integrated approach. The resultant MIU and FDU ensure an effective monitoring system and delivery of technical assistance to the communities respectively. The socio-economic information systems provide basis for monitoring and evaluation of the progress of development. These effectively influence the successful adoption of the integrated approach.

Although delay in its establishment had diminished trust among beneficiaries, eventual construction of the CFC, which beneficiaries highly look forward to, will provide for the mix and integration of development activities. The Facilities will cater for various socio-economic activities and social services. With beneficiary groups already in place, the essential medium for the interaction of beneficiaries is created. With the sustainability of local economic activities, the CFC and its management will form the springboard for further integration of community activities and improvement of the living conditions of the communities.
5. IMPACT OF PROJECT MICRO-ACTIVITIES ON BENEFICIARIES

A recent socio-economic report of the project's information system concluded that there has not been appreciable or remarkable changes in the quality of life of fisherfolks. However, in the context of this study findings reveal that project activities have had considerable impact on beneficiaries and can form the basis for sustained improvement in the standard of living of fisherfolks and other members of the community.

5.1 Organisation and Institutionalisation

Among the notable impacts of the IDAF-Yeji Project is the organisation and revitalisation of beneficiary groups into viable cooperative societies in Yeji and other project villages. Of the existing eleven project related co-operative societies in the project area, five have already been registered as legal co-operative societies and are well advanced in their organisation and adherence to cooperative principles and activities. Individual societies hold regular monthly meetings to discuss matters affecting the society. In both registered and unregistered societies, members effect regular cash subscriptions. These and funds raised in some societies, through various means, including sale of membership cards as practised by the traders and processors society, and from other co-operative operations, are saved with local banks. Funds are not fully utilized in virtually all the societies but these could be potential sources of investment capital or credit to members if adequately managed.

Although banking is not a tradition of fishing communities in the project area, individual members of societies are encouraged to save and many now operate deposit accounts, the funds of which are used in improving profitable business operations. Project and Government efforts in this direction and the promise of credit strongly inspired the proliferation of co-operative societies in Yeji and some other project villages. Many societies are striving to become viable. This could be the basis for organised community units in the production and marketing sectors of the local economy for integration into the national development strategy. However, it is necessary that societies take up micro-project planning and implementation and participate in community development and management.

Since fisheries resources are the main economic base on which the communities depend for their survival, sustainable utilisation of resources for improvement of the socio-economic conditions and living standards of the communities requires rational exploitation and effective management. The FDU and MIU provide the institutional base for information and advice on the development and management of resources. They conduct training, research, monitoring and extension and their capabilities are being improved at the local level. However, the viability of the institutional framework and their effectiveness in dealing with the reponsibilities bestowed on them will depend on further strengthening and support.

Continued research activities on Lake Volta for monitoring and management purposes by the project is bound to influence the resource management system of the Lake. The project has brought back lake research activities by the Institute of Aquatic Biology that stopped over a decade ago, due to technical and financial resources constraints. The new approach is rather localised but cheaper. If the activities can be extended, as planned, to other parts of the lake and adequately supported, they will have tremendous impact on generating information relevant to effective resource management. However, it will require further efforts to install an effective management enforcement system.
5.2 **Institution of Credit facilities**

The Yeji Cooperative Fish Processing and Marketing Society with over 400 members is benefiting from the International Fund for Agricultural Development (IFAD) Small Holder Credit and Marketing Project (SCIMP). About 280 members have access to credit from the 100 million cedis approved for the Yeji project area. The IFAD scheme is administered through a local bank (YAPRA) and is effectively enhancing the operations of its beneficiaries who now process and trade in increased volumes of fish. Money is divided among members who are divided in units of ten. Beneficiaries must have a minimum amount of savings with the bank. Individual members of the unit ensure loan repayment and with this pressure group arrangement and profitability of fish marketing, repayment rate was recorded at 100% for the first loan disbursement. The scheme is addressing the credit needs of its beneficiaries and ensuring that they effect cash savings. This has also insighted other fisherfolks to open savings accounts with local banks.

Operation of the project's RLF is yet to be implemented due to proclaimed insufficient funds (15 million cedis as compared to a recommended 200 million cedis requirement) to satisfy the credit needs of the various cooperative and informal groups. The 15 million cedis was therefore used to order spare parts for sale locally. This fund is expected to reach 35 million cedis in future. Although spare parts are useful, they are being satisfactorily provided by private dealers. Hence the Project's RLF can be operated to provide credit for limited groups of operators as in the IFAD scheme and as in the proposed successful lines of the GHA/85/011. This will allow internal growth in the fund to enable other groups to have access to credit facilities. Meanwhile the Government should endeavour to seek additional credit inputs for administration through the co-operative structure. Institution of credit facilities on a sustainable basis will ensure mobilisation of financial resources to support development of economic activities in the fishing communities.

5.3 **Literacy/Numeracy and other training Programmes**

The literacy/numeracy classes and related bookkeeping courses for beneficiaries from various trade groups are already contributing effects to the status of operators. Many now use figures to keep track of business operations. This contributes to viability of business activities and improvement of living conditions. The classes which were initiated to provide operators with simple accounting systems and to facilitate successful administration of the project revolving loan scheme have indeed imparted a wider effect. They provide beneficiaries with general education covering family welfare, health and environmental education and awareness which also find wider application in the daily lives of beneficiaries.

The Dzibordzi literacy class in Yeji with 30 members and under the supervision of an active and dedicated facilitator has taken up micro-projects on commercial pig rearing and soap making. These are funded through member subscriptions. Other groups have taken up communal projects in afforestation and piggery.

These efforts of the class need finance for feed, drug and associated inputs, and to expand and develop the present initiatives. Likewise, co-operative societies require technical and financial support to develop initiatives for the present and future and ensure that necessary incentives are generated for the continued participation of members. These have potential to foster development of the local micro-economy and facilitate small-scale/micro-enterprise development for local economic growth. Therefore the provision of credit facilities for groups must be given high priority.

Skills training activities for boat builders, OBE mechanics and associated interventions effectively boosted the skills and output of beneficiaries. The yet to be implemented training of young fishermen is expected to provide additional employment opportunities for youth in the community.
National and international training programmes and on-the-job training for Fisheries Department staff on the project are strengthening the capabilities of these development facilitators to more effectively play their role.

5.4 Technology Transfer and Environmental Issues

Project interventions to provide outboard motor spare parts at reasonable cost, high grade engine oil, and fuel; strengthening of the boatbuilders and mechanics and the introduction of the improved chorkor oven and integrated fish processing facility effectively enhance the production process and the safety and security of operators. Fishermen and lake transporters indirectly benefitted from training of boat builders and outboard mechanics and the supply of spare parts and two stroke engine oil. These interventions are contributing to improving the socio-economic activities of beneficiaries.

The chorkor oven contributes to improving technology, the quality of products, reducing fuelwood consumption, and hence improving profitability of fish processing operations. It also addresses environmental concerns relating to deforestation and pollution. Women generally operate as individuals and prefer to process fish while attending to their cooking and other household activities. As a result of demonstrations and the effectiveness of the chorkor technology, women in Yeji are gradually adopting the chorkor oven and integrated fish processing facilities. With the assistance of the project's fish processing unit, women are successfully constructing the facilities in their homes on their own initiatives. The facilities are constructed close to the house where they process fish and attend to other household activities. Demonstrations are continuing in other project villages and these will be intensified with the arrival of the fish processing NPPP consultant. Although the chorkor technology demonstrates superior operational attributes including high efficiency in fuelwood use and smoking capacity compared to existing units, its level of adoption is relatively low due to a number of factors. These include: high construction cost for smoking trays; variation in fish size and fat content as compared to marine fish in coastal areas where the oven is successfully used to smoke smaller species. Lack of credit and the highly migratory nature of fishers and their families also militate against adoption of the chorkor.

Use of chorkor technology and fuel-efficient cooking stoves introduced through the project address the environmental implications of fish processing and other domestic fuelwood uses. With the planned increase in the outreach to project villages and increased acceptability and adoption, the techniques will reduce the rate of deforestation on the lakeside. However, it may be necessary to facilitate adoption through the availability of credit facilities for construction of the processing units.

The afforestation programme including the TCDM project in which communities are involved is a sound mechanism of the integrated approach in Yeji. It is raising people's awareness on the need for tree planting and protection of the environment. The programme ensures community participation in tree planting for future availability of fuelwood for fish smoking and other domestic and commercial activities. In the wake of the maturity of planted private and community fuelwood lots, the availability of fuelwood will be improved and easier for women who spend considerable time fetching fuelwood or buying it expensively.

Use of improved and fuel-efficient facilities complement the afforestation programme and when fully adopted will create an improved balance between exploitation and replenishment of forest resources and hence ensure continued availability of fuelwood resources to support economic and cultural activities of the communities. Hence, there is need for increased efforts towards awareness, support and involvement of communities in the sustainable management and development of the afforestation initiatives.
5.5 Establishment of the CFC

The use of Yeji as the market outlet for fish products and a variety of other domestic commodities has intensified during the project. Fish production has also increased over the period. Hence an increasing number of traders from various parts of Ghana converge weekly in Yeji for the trade. The effect is a progressive growth in activities in Yeji which is now bustling with various trading and other commercial activities. This effectively improves availability of essential goods and services to the communities and increased income generating activities and capacities. People from Accra and major towns as Kumasi in the Ashanti Region and from other regions of Ghana including the coastal areas are attracted to Yeji where they engage in fishing and a variety of related activities. Consequently many people including youth and women from the project area and beyond, settled in Yeji or visit it regularly to engage in employment in various social and economic activities for income generation and survival.

With eventual establishment of the CFC infrastructure, its facilities and services (electricity, water etc, ...) the project is expected to have added impact on beneficiaries and their living conditions. The market facilities and services of the CFC which users long awaited for and highly look forward to using, will contribute to improved operating conditions and ensure security in operations. It will provide sheltered and secured marketing and working facilities for operators and form basis for additional attraction to more fish traders. Fish storage and re-smoking facilities will enhance protection of fish quality and ensure reduction in postharvest losses. Revenue accruing from renting out CFC facilities is expected to provide basis for up-keep of the CFC and for future development activities. Its management and revenue base are expected to perpetuate the development initiatives and contribute to the socio-economic well being of the communities.

However, all village communities, with the exception of Yeji, still lack basic medical/health facilities and the educational services are limited. Yeji provides medical and a number of educational (primary and secondary schools) services and skilled people are emerging. However, these are still limited and accessible by few. The local hospital, Mathias, instituted by the Catholic mission, is effectively providing satisfactory health and medical services to communities in the area and is complemented by a number of private drug stores in Yeji. In light of the growing populations in the area and their needs, government should endeavour to further efforts to provide basic health and educational services.

It is worth mentioning that roads are technically very vital infrastructure for the promotion of community activities especially in the supply of basic and essential commodities, and the movement and marketing of goods produced by the communities. Part of the road linking Yeji to the main distribution points for fish and other commodities, and on which the success of the fish trade partly depends, is in a poor state and seriously affects trade in Yeji. The flow of essential commodities and fishing inputs are often delayed by difficulty in transport arrangement due to the road condition. The Yeji branch of the Road Transporters Union, who are the main transporters of commodities in and out of Yeji, join other operators in the lament about the poor state of the road. Hence upgrading of the part of the road from Ejura will add to the impact of the viability of the Yeji CFC, the fish trade and the improvement of the socio-economic conditions of communities dependent on Yeji. The GOG should therefore urgently endeavour to upgrade the road. This will enhance the trade and foster development in the area especially with the presence of water and electricity services.
6. SUSTAINABILITY OF MICRO-ACTIVITIES

The sustainability of initiatives and micro-activities of the Yeji Project can be assessed in view of a number of factors of which ability of the resource base to sustain the various activities is the main factor. Other factors include the technical appropriateness and socio-economic viability, socio-political and cultural appropriateness and compatibility of development initiatives and actions. The acceptance and adoption of appropriate interventions, awareness and organization of beneficiaries and local institutional settings, adequately empowered to participate in and continue the management and development processes, are also vital to sustainability of actions and initiatives.

6.1 The Fisheries Resource Base

Project activities are successfully implemented with varying degrees of success and impact on beneficiaries. However, the viability of the various micro-activities are dictated primarily by the ability of the resource base to support all other activities dependent on them. The resources of the Lake are currently supporting economic activities of fishing communities dependent on them. However, fishing activities are intensifying as more people enter fishing on the lake with effective fishing gear, including prohibited gears. High fishing pressure from increased number of fishermen and the tendency of fishermen to maximise catches by any means possible, as well as the prevalent use of destructive and illegal fishing gears, can have consequent negative effects on lake resources. Landings of juveniles are increasing as fishermen strive to increase fishing output. It has been observed and confirmed from data collected on landings, and by researchers and fishers alike, that certain fish species, including Lates (Lates niloticus), are seriously threatened and are now rarer in the catch. Fishers themselves reported a decline in catches noticed during the past fourteen years and a gradual reduction in the catch per unit effort.

Although Government introduced a number of management measures including restriction of mesh size, prohibition of destructive fishing gears and undertakes campaigns against their use, practices still continue clandestinely. The situation calls for closer monitoring and stricter enforcement of management measures.

In an effort to address the resource issue for its sustainable use, the project introduced resource monitoring systems to provide information necessary for effective management. The FDU and MIU carry out research, monitoring and extension activities aimed at providing development and management information, extension services, and advice on policy matters and performance of the lake fisheries. In support of stock assessment activities and in order to effectively regulate fishing, the project designs fishing gears that are tested by the resource monitoring team for possible introduction to replace illegal gear. With installation of the institutional base, extension, and adoption of approaches and research methodologies to other parts of the lake, an institutional framework will be in place to guide planning and implementation of management and development of lake fishery resources. These are ecologically sound. However, the institutions are still young and require further development and strengthening through increased training of manpower. They also require continued support, both financially and technically to ensure continuity in activities.

As strengthening of the local institutions depends on mobilised local expertise, the project and government must ensure the speedy recruitment of the remaining NPPP consultants to ensure effective strengthening of the local institutional capacity. Government must also continue to
support activities of the units if they are to adequately influence management and development activities following termination of project intervention. Of course it should also be noted that conduct of such a task requires a dedicated and motivated staff.

Availability of management information and advice are however not the end of the resource concern. Implementation of policies and enforcement of management actions are essential and demand a variety of resource inputs to be achieved. Vastness of the lake and the widely scattered, at times isolated, fishing communities and the open access nature of the resources in general, present problems for effective enforcement of management measures. Such a situation calls for the organization of fishing communities to be involved in resource management and development. Incidences of community-based management practices exist in some of the fishing communities. They are traditional, prompted by resource scarcity or by Government campaigns to discourage use of harmful fishing techniques. In Vutideke village, for example, fishers are well organised under the village headman and establish fishing seasons and ban on specific gears including "winch nets" (purse seines), "Adrine" (beach seine) and "nifa nifa" (used in grasses where fish hide during high waters). Although these at times result in conflicts with fishers from nearby villages, it is an attempt by the community to control exploitation of the limited resources. Involvement of resource users through setting up and empowering user organisations in villages and linking these to an institutional framework for co-management purposes is vital and deserves to be considered.

Population growth and increased fishing pressure are salient factors that require to be dealt with in line with sustainability of resources. Hence Government should also consider these concerns and direct efforts towards them for sustainability of community development efforts.

6.2 Technical Appropriateness and Socio-Economic Viability

The main infrastructural component of the project, the CFC, has taken about seven years to be realised. During this period, beneficiary expectations about the CFC facilities have been frustrated to the extent of erosion of trust among beneficiaries. With availability of funds, the CFC is now being realised and beneficiaries are looking forward to the facilities and services. Potential users have pledged their willingness to use the facilities. Indications from users are that the facilities are highly needed for improved operating conditions and will be used. The present market facilities are inadequate due to several elements of inconvenience, including poor structures and lack of adequate shelter from rain, wind, dust and sunlight, not to mention lack of proper storage and fish re-smoking facilities. Hence the CFC facilities are expected to satisfy expectations of users and therefore encourage its use. The improved nature of facilities being constructed, and the potential quality and security offered to users are additional motivating factors. The anticipated water and electricity services will also help improve operations.

Management principle of the CFC is based on lines of a limited liability company with an appointed manager and employed management staff, and an independent Board of Directors. With the proposed user consultative and review/planning committees, a technically sound management structure is anticipated.

By the nature of revenue potentials, and proposed sharing, the CFC is expected to have available, adequate financial resources for its operation, including payment of management staff salaries, repair and maintenance activities, and possible expansion of the facilities to accommodate additional users. Major interested shareholders of the CFC, except the Yeji Traditional Council,
are local institutions with responsibilities to develop the local community. Revenue accruing to
the CFC, if adequately managed, can therefore find effective use in the development and
improvement of the social and economic environment of the local community. That will further
contribute to improving the standards of living.

The various fisheries and related economic activities are profitable and operations are
supporting the livelihood of operators and their families. Many operators are saving with local
banks, at least in Yeji and some other project villages. In Yeji various economic operators using
the Yeji market pay a variety of levies to local authorities including the Yeji Town Development
Committee, the Yeji Traditional Council and Atebubu District Assembly. It is claimed that these
revenues have not been well utilised in the past for local development. When the CFC becomes
operational, all levy collections will be centralised and shared according to the proportions
reported earlier. With continued profitability in the economic activities of operators and the
centralised nature of revenue collection, a financial system is anticipated that will support the
continued operation and maintenance of the CFC and possible development of other social
activities in Yeji. However, proposed charges for CFC facilities were established since 1991 and
require to be revised and updated to ensure that appropriate charges are made which users are
ready to pay. The participation of users in determining charges will be important. Since
sustainability of the CFC depends on its ability to generate adequate revenue, it is also vital that
revenue collection is closely monitored.

At this time of the construction of the CFC there are proposals for construction of markets
in Yeji, with similar facilities as in the CFC market. The presence of these market facilities outside
the CFC may present management difficulties and threaten the viability of CFC operations. In the
consultations being held between the project and other responsible authorities to harmonise the
market construction issue, planning other market facilities must take cognition of the extra needs
of the community and avoid duplication of facilities in excess of needs. Otherwise, operations of
the markets, rather than complementing each other, will be based on competition and the situation
can seriously undermine the social and economic viability of both the CFC and the other market
facilities. Business operations on which the revenue base of the CFC depends may require
improvement through business/financial management training programmes for users to enhance
both viability of businesses and the CFC.

The Yeji Co-operative Boat Builders' Society constructs virtually all the fishing and
transport canoes in the area. They construct about 500 canoes per year. Technical training and
support contributed to strengthening and improving their boat building skills. However, the
improved boat constructed and introduced through the project, although strong and durable, is
prohibitive in cost and therefore not adopted. Boat builders are satisfactorily constructing boats
for operators and boat building is profitable, but boat construction work is constrained by a lack
of modern carpentry tools and equipment and inadequate working facilities. The Cooperative
Society is well organised and is now legal. It plays a vital role in the fishing sector and contributes
to the social and economic wellbeing of the fishing communities both in terms of the services it
provides and the revenue it contributes for local development. The society requires financial and
technical assistance in the form of credit and appropriate workshop facilities. It therefore requires
additional support, financially and technically to more efficiently provide services to the fishing
communities. In view of the poor structure of the boat builders' workshop it must be given
priority, to accommodate the originally planned carpentry workshop facilities for boat builders.
Capabilities of the outboard mechanics have also been improved through project interventions and they are also providing satisfactory services to fishers and transport canoe operators on the lake. Like the boat builders, mechanics are also constrained by lack of adequate working tools and equipment. Spare parts ordered by the project are sold through them. However the provision of spare parts by the project at the given prices is hindering the business of spare parts dealers, who claim to be recording poor sales and prefer the project to supply the parts through them.

Technological interventions in fishing and fish processing, introduction of alternate fishing gears, chorkor fish smoking oven and fuel-efficient mud stoves, are appropriate and effective. Research activities with gear selectivity trials are expected to produce results that will form a sound basis for improved regulation of fishing practices. Adoption and use of the chorkor technology, although slow, is spreading slowly as benefits are demonstrated by use. The technology improves profitability of smoking activities and reduction of postharvest losses. Reduced fuelwood consumption from the chorkor smoker and other fuel-efficient devices introduced through the project, alongside participatory afforestation programmes, are effective and contribute to reducing rate of deforestation and enhance future availability of fuelwood. The TCDM Project is expected to halt deforestation and increase the tree cover and availability of fuelwood. However, animals are already causing damage to plantations. Therefore, there is need to adequately organise and empower locals to manage the community woodlots for the present and the future. The current IFAD credit scheme for women processors and traders and successful operation of the Project's RLF alongside the growing banking culture of fisherfolk will contribute to improving the local financial market of fisherfolks. However, there is need for credit assistance and micro-project planning and implementation by beneficiaries.

In terms of equity, all sectors of the communities are engaged in a variety of economic activities. Women are at the forefront of fish processing and marketing activities, which are among the most paying occupations in the community. Fishing and related activities are providing employment for increasing number of youths who derive their survival from these activities. Yeji's role as a market centre has promoted many business activities, such as bicycle repair and maintenance, motor mechanics, tailoring by women, food preparation and selling, commodity transport on push trucks, hair dressing, and petty trading. Even young girls and school children earn incomes from the daily market operations in Yeji.

6.3 Socio-political and Cultural Appropriateness

Government has demonstrated its will to manage the fish resources of the lake through the Yeji Project by developing legislations for management and regulation of exploitation, the creation of awareness, and the creation of resource monitoring and information generation and dissemination systems. However, local communities are not adequately organised for involvement in the management of local resources and facilities. The creation of the FDU and MIU form the basis for local development and management efforts. In light of the need for community participation and considering the vastness of the lake and isolated nature of fishing communities, resource requirements for enforcement of regulations etc., there is a need for development of confidence in community organisational structures for participation in resource management at the local level.
7. LESSONS OF THE INTEGRATED APPROACH FROM THE YEJI PROJECT

Implementation of the IDAF-Yeji project is based on the integrated strategy on small-scale fisheries development adopted by the FAO World Conference on Fisheries Management and Development. The project adapted various principles and guidelines of the strategy and used various mechanisms to successfully implement project activities for the attainment of project and national objectives. Since implementation of the strategy is flexible and tailored towards meeting special needs and requirements of communities within given localities and prevailing circumstances (geographical, social, economic and political situations), specific lessons can be drawn from the integrated development approach as applied to the Yeji project.

i) Awareness and sensitisation of the community is essential for their participation in project activities. Sensitisation should be undertaken in the early stages of the project to mobilise potential beneficiaries and development partners to organise and encourage them to participate effectively in the various activities, including identification of prioritised needs and aspirations and in the planning and implementation of activities for improvement of beneficiary conditions.

ii) Training of beneficiaries is a vital factor to their effective participation in the integrated development process. As well as raising people's awareness for participation, training should also be directed towards skills development for additional employment to enhance productivity and improve the income generating capacity of local communities. These will ensure that benefits of development activities appreciably provide the necessary incentives for continued participation. It is necessary that training is widely based and aimed at empowerment for self-reliant development.

iii) Credit facilities are a major constraint of operators in the small-scale fisheries sector. Its availability is a motivating factor to community participation in development activities. Hence the integrated approach often requires a credit component to mobilise people towards the building of local organisations, the transfer of technology, and the development of skills. The incorporation of micro-project planning and implementation by the communities for their immediate benefit is necessary. It provides incentives that ensure the continued encouragement and participation of local groups in the process of socio-economic development.

iv) Implementation of the integrated approach requires adequate planning of activities and the setting of priority objectives that are realistically achievable within reasonable time limits. This requires detailed socio-economic studies of factors relating to intended interventions for appropriate approach to the community problems. It also requires identification and mobilisation of appropriate local manpower, technical and material resources and involvement of beneficiaries for effective planning and application of mechanisms. Indeed certain project activities should be made pre-project identification activities to minimise delay and ensure continued trust among beneficiaries.

v) As various activities of the community are interrelated and tend to complement each other, integration of the various sectoral activities of the local communities in the development process is vital. Viability of fisheries activities often depend on the viability of certain non-fishing activities and hence integration must involve both fishing and non-fishing activities, the degree of integration depending on prioritised needs of the community, and the relevance and compatibility of activities, decisions about which should involve the community.
vi) Local organisation and institutionalisation for management and development is an important and effective basis for self-reliant development and management of community resources and facilities. However, considerable time and resources are required for the training, upgrading and strengthening of these bodies.

vii) Mobilisation of local efforts and expertise is a vital tool in the integrated development approach and requires a multi-disciplinary composite of development partners and manpower for development activities and services to reach the various sectors of the community. Such a mechanism also further develops local expertise to render community development services and provide reference points for future development actions.
8. DISCUSSION AND RECOMMENDATIONS

1. With an estimated potential of 40,000 MT and production estimated at about 36,000 MT, exploitation of the fish resources of the lake are nearing full potential. With increased fishing pressure, use of destructive fishing gears and techniques in the absence of reliable knowledge of stock levels, fish resources of the lake may already be producing their full potential if not being overexploited. Rigorous monitoring is therefore required to provide the basic information necessary for viable management and development. Activities of the Management Information Unit in respect of stock and catch assessment, frame survey and related monitoring activities are relevant and are expected to provide useful information for management of the resources. The unit's performance is effectively being boosted by national and international experts and it is expected by the end of the project that a reliable system for data collection will be in place for extension to other parts of the lake. Objectives of the envisaged Fisheries Sector Capacity Building Project include strengthening of the capacity of the Fisheries Department to undertake stock assessment, implement management plans and the establishment of monitoring, control and surveillance systems. Activities associated with the IDAF-Yeji project include sensitisation of fisherfolks on the fisheries law and on the need for resource conservation among others. Considerable time will be required before the initiatives provide concrete results. The IDAF Project will soon phase out in December 1996 and the project support will stop. So for more efficient approach to lake resource monitoring and management, it is vital to link ongoing activities with upcoming ones by utilising experiences of the MIU and its supporting national experts and collaborators for continuation of the activities under the capacity building project. It is equally vital that sensitisation and education of resource users continue to be given priority.

Given the vastness of the lake and resources required for effective management and control of the lake resources, the association of fisherfolks in management of the lake through organised and empowered management units at the community level should be considered a priority.

2. The FDU, whose activities are directly related to assisting the fishing communities, is generally weak in the absence of the NPPP consultant experts on fish processing and gear technology. For effective improvement of the capabilities of the fishing gear and fish processing sections to provide extension and education and assist the development process of the lake fishery, it is recommended that recruitment of the NPPP experts on fishing gears and fish processing take place in earnest to ensure adequate strengthening of the sections before termination of the project. Government should continue to provide technical and financial support for continuity in the activities of the sections following withdrawal of project assistance.

3. Since credit facilities are a major constraint in the fishing communities, it is recommended that the Government of Ghana, UNDP and FAO should consider the present situation and solicit financial support to extend credit benefits to fisherfolks. Meanwhile the fisherfolk cooperative societies, many of which are already engaged in savings, should be assisted to acquire skills relating to micro-project identification, planning and operation for small-scale enterprise development vital to the continued improvement of the socio-economic conditions of communities. Financial management and the establishment of self-reliant credit and savings schemes are also essential for improved viability of the societies and the economic activities of members. Increased adoption of improved technology may best be promoted if these are linked to provision of credit facilities for inputs.

In view of the credit needs of operators, the motivating effects of credit facilities to operators and the successes and experiences recorded in administration of credit facilities in Ghana, the project's revolving loan scheme should be implemented. Although available funds are not sufficient for all potential beneficiaries, the present amount can be disbursed to limited beneficiaries and the fund
allowed to grow within the scheme. OBE spare parts supply for which the fund is being used is being satisfactorily done by local dealers whose businesses are hindered by the project's sale of spare parts. Therefore spare parts supply should be channelled through dealers and in future the fund used to provide limited groups with credit.

4. It was envisaged that operation of the CFC as a self-sustaining enterprise when it is completed requires technical guidance by the project before handing it over to private management. As the time left to the end of the project is short technical guidance and other programmed activities relating to the operation and testing of the CFC management plan should therefore be disregarded from project activities. Because the project cannot implement and test the management plan of the CFC and guide its operation during its lifetime, it is recommended that the UNDP, the GOG and FAO provide a six months extension period for the project to undertake such activities, especially in light of its efforts and hard work to establish the CFC as the main objective of the project. It may be relevant to document the course and progress of operations towards self-sustenance of the enterprise. Following this, the Fisheries Department should ensure close monitoring of the progress of operation under the proposed management system, especially in light of beneficiary interest and assistance to the communities.

5. The CFC management proposals have not been altered since it was drawn in 1991, although several developments have taken place since then. A number of the planned facilities of the CFC have been disregarded due to budgetary cuts and therefore initial estimate of potential revenue may not be realistic. Other recent developments have been the proliferation of markets in Yeji. Presence of similar market facilities outside the CFC facilities may present management difficulties and threaten viability of the CFC operations. Hence planning of the other market facilities should consider the extra needs of the community and avoid duplication of facilities to prevent likely competition and undermining of the social and economic viability of both the CFC and other market facilities. Proposed charges for CFC facilities were established since 1991 and require to be updated to ensure that appropriate charges are made which users are ready to pay. For more effective management of the CFC, it may be necessary to incorporate major co-operative societies as share holders in the CFC to adequately represent the interest of users and create an environment of mutual trust and cooperation. It is also important that the User Consultative Committee is extended to provide for sub-committees from within individual user groups to allow users to more independently deal with internal problems.

6. In order to assist the communities and create additional employment opportunities, formation of various beneficiary groups and technical training activities for skills development and other forms of assistance were initiated. However the degree of involvement of beneficiaries in terms of their participation in management issues and setups is inadequate. Since communities are the users of the resources and facilities it is vital that they are mobilised and empowered through awareness, organisation and training to improve their capacity to be more involved to participate in management of resources and facilities. This creates the necessary collaboration and trust and ensures their responsibility for sustainable management and development.

7. The afforestation programme of the project including the TCDM micro-project are appropriate in dealing specifically with environmental issues and the viability of fuelwood and socio-economic activities of communities in the project area. For sustainability of the afforestation initiative, it is necessary that community based management of woodlots be encouraged and supported by government and associated partners. The organisational framework should therefore be put in place and supported with training and other assistance to empower them for viable management.
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