OCCASION

This publication has been made available to the public on the occasion of the 50th anniversary of the United Nations Industrial Development Organisation.

DISCLAIMER

FAIR USE POLICY

CONTACT

Please contact publications@unido.org for further information concerning UNIDO publications.

For more information about UNIDO, please visit us at www.unido.org

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
Vienna International Centre, P.O. Box 300, 1400 Vienna, Austria
Tel: (+43-1) 26026-0 · www.unido.org · unido@unido.org

PDSU

10 November 1989

1593c

David THOMSON

17888

D R A F T

THE INTEGRATED DEVELOPMENT OF THE FISHERIES INDUSTRIAL SYSTEMS OF BENIN, GAMBIA, SIERRA LEONE AND TOGO

A PROGRAMME IMPLEMENTATION PROPOSAL

5/5

TABLE OF CONTENTS

B. PROJECTS

1. Benin

Technical Assistance Projects:

Fishing Industry Sites and Services

Primary Industry Development in Beninois Lagoon Fishing Villages

2. The Gambia

Technical Assistance Projects:

Production of Animal Feed from Fish Waste

Technical Assistance to Export Fishing Industry

Protection and Enhancement of Inshore Fishing Grounds

Feasibility Study: Fish Landing Pier and Ice Plant at Banjul

Investment Projects:

Fish Landing Pier

Ice Plant and Cold Store

3. Sierra Leone

Technical Assistance Projects:

Primary Industry Development in the Sherbro Bonthe/Bendu area

Protection and Enhancement of Inshore Fishing Grounds

Feasibility Study: Fisheries Industry Terminal and Complex

Investment Project:

Fisheries Industry Terminal and Complex:

4. Togo

Technical Assistance Projects:

Primary Industry Development in Togolese Rural Fishing Villages

Development of Offshore Artisanal Fishing Craft

5. Regional Support Programme

Regional Support and Training Centre for Area Development, Primary Industry in Rural Fishing Communities

Boat Building, Harbour Construction and Industrial Support for Marine Fisheries

Industrial Management Skills for Fishery Industry Sector

Development of Management Structures, Organizational Systems and Training Materials

INTRODUCTION AND SUMMARY

The present document is a proposal for the integrated implementation of indicative programmes for the development of the fisheries industrial systems (FIS) of four West African countries, Benin, Gambia, Sierra Leone and Togo, as well as a regional support programme. Each country programme includes a package of technical assistance and investment projects and policy advice, while the regional support programme complements the individual national programmes. The indicative programmes and regional support programme are intended for implementation by UNIDO and FAO, and the proposal includes arrangements for inter-Agency co-operation and co-ordination in the implementation and monitoring of the programmes.

Indicative Programmes

The indicative programmes presented here are the result of the application of the UNIDO programme approach to the analysis and programming of fisheries industrial systems. The progamme approach is applied in different stages and at different levels. The first stage was the classification of 64 developing countries into a sectoral typology according to the patterns of development of their fisheries industrial systems, which was carried out by UNIDO with the co-operation and assistance of FAO. On the basis of this sectoral analysis, countries were classified into one of the ten different development patterns that were identified. For each of these patterns, a specific development strategy was elaborated, together with suggested actions for its implementation.*

The second stage of this work was the preparation of indicative programmes for the development of the fisheries industrial systems of eight West African countries (third stage programmes, i.e. quantitative and integrated sectoral programmes, have been prepared for three countries).** The indicative programmes built and expanded upon the results of the

---

* "Industrial development strategies for fishery systems in developing countries", Sectoral Studies Series No. 32, PPD.30, UNIDO, Vienna, 1987.

** As defined by UNIDO and ECA in the context of the Industrial Development Decade for Africa (IDDA) the 16 West African countries are: Benin, Burkina Faso, Cape Verde, Côte d'Ivoire, Gambia, Ghana, Guinea/Conakry, Guinea-Bisseau, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone, Togo. See: UNIDO/OED.138, March 1985. Indicative programmes were prepared for Benin, Côte d'Ivoire, Gambia, Ghana, Mauritania, Senegal, Sierra Leone and Togo. Quantitative and integrated sectoral programmes have been prepared for Guinea/Conakry, Senegal, and Ghana.

sectoral typology on the basis of desk studies as well as, in many cases, a country visit. They consist of: a further analysis of the fisheries industrial system of the country and the Government's development objectives in relation to the system, a description of bottlenecks and constraints hindering the further development of the system, possible options for overcoming the bottlenecks and constraints, a strategy comprising the most appropriate options for achieving the development objectives, and a package of technical assistance, investments and policies to carry out the strategy.

Indicative programmes are prepared at the same time for a number of countries within a subregion so as to use research resources sufficiently. Even countries that belong to different country groups within the FIS typology are likely to share some similar characteristics in terms of resources, cost structures for factors of production, consumption patterns and other issues affecting the development of system.

The value of a package of indicative programmes for several countries in a subregion is that it can provide a sound basis for developing an industry within a subregion; and with a regional support programme, support to some developmental goals can be given more efficiently - avoiding duplication and facilitating technical and economic co-operation between developing countries.

The indicative programmes for various countries in a subregion can provide national Governments, UNIDO, FAO and other multilateral and bilateral agencies with a basis for planning and implementing technical assistance and investment not only for those individual countries, but also in a preliminary manner for other countries with similar sectoral development patterns, thus making the programming of technical assistance and investment more cost-effective.

This present document, which provides an integrated implementation proposal for the indicative programmes for Benin, the Gambia, Sierra Leone and Togo, is the result of a mission to the four countries by a UNIDO expert and an FAO staff member. It proposes a coordinated approach to the development of the fisheries industries of West African countries and contains not only the complete indicative programmes for the four countries but also a regional support programme, which goes beyond those four countries. The document thus represents an integrated package that is intended to be implemented in a coordinated manner and to be presented in its entirety to potential donors. Nevertheless, if necessary, the individual country programmes can be presented to national Governments separately for consideration and approval.

The Programme Approach

The programme approach, which was applied to produce the indicative programmes presented here, was developed at UNIDO in response to the widely perceived need for increased impact of technical assistance projects on the industrial development of developing countries. The basis of the programme approach is the analysis of any industrial activity as part of a system, which consists of a set of production, distribution and consumption components that are linked in an interdependent manner and that are influenced in their functioning by a set of policies. An industrial system can comprise one entire sector or several interlinked sectors/subsectors. This system can be represented graphically in the form of a base diagram, which shows all the main components of the system, the linkages between them and the policies that affect the various components and the system as a whole. Figure 1 (page 10) is a base diagram representing a typical fisheries industrial system.

This system approach provides a broader view of an industrial sector than traditional approaches because it make explicit the complex interdependence of the economic and social components within and outside the system and helps to provide the conceptual framework to analyze and evaluate these inter-relationships.

The final result of an analysis of the entire industrial system is a programme for the integrated development of the system during a specified time period. A programme comprises a package of interrelated technical assistance and investment projects and specific policy recommendations. The programme addresses simultaneously all of the components of a system in which bottlenecks and constraints that hinder the development of the system have been identified, so that the technical assistance and investment projects in the programme have a greater potential for producing a positive impact on the development of the system.

The technical assistance projects in such packages may be financed through UNDP, jointly with other institutions or bilateral donors, by special-purpose contributions to the UNIDO industrial development fund (IDF) or through other sources.

The four country programmes and regional support programmes

Table 1 gives an overview of the indicative programmes for the four countries and the regional support programme.

It should be noted that the projects were intentionally designed to be relatively low-cost. This will be achieved be maximum use of regional expertise, appropriate technology and volunteer professionals. Furthermore, where other projects or programmes can provide expertise or facilities, these have been utilized rather than duplicated.

The programme would be overseen by a UNIDO/FAO co-ordinating committee which would have links to existing regional offices and bodies concerned with fisheries and industry. It is expected that the Governments of other countries in the subregion may request projects which would come under the programme umbrella. These additional countries may include Ghana, Mauritania, Senegal, Liberia and/or Côte d'Ivoire.

Table 1: INDICATIVE PROGRAMMES FOR BENIN, GAMBIA, SIERRA LEONE AND TOGO AND REGIONAL SUPPORT PROGRAMME

INDICATIVE PROGRAMME FOR BENIN	
Technical Assistance Projects:	
Fishing Industry Sites and Services	$ 148,000
Primary Industry Development, in Beninois Lagoon Fishing Villages	$ 158,000
TOTAL FOR TECHNICAL ASSISTANCE PROJECTS	$ 306,000
INDICATIVE PROGRAMME FOR GAMBIA	
Technical Assistance Projects:	
Production of Animal Feed from Fish Waste	$ 110,000
Technical Assistance to Export Fishing Industry	$ 143,000
Protection and Enhancement of Inshore Fishing Grounds	$ 136,000
Feasibility Study: Fish Landing Pier and Ice Plant at Banjul	$ 58,000
TOTAL FOR TECHNICAL ASSISTANCE PROJECTS	$ 447,000
Investment Projects:	
Fish Landing Pier	$2,700,000
Ice Plant and Cold Store	$ 800,000
TOTAL INVESTMENTS	$3,500,000
INDICATIVE PROGRAMME FOR SIERRA LEONE	
Technical Assistance Projects:	
Primary Industry Development in the Sherbro Bonthe/Bendu area	$ 393,000
Protection and Enhancement of Inshore Fishing Grounds	$ 136,000
Feasibility Study: Fisheries Industry Terminal and Complex	$ 213,000
TOTAL FOR TECHNICAL ASSISTANCE PROJCECTS	$ 742,000
Investment Project - Fisheries Industry Terminal and Complex:	
Transshipment facility and pier; Ice plant and cold stores; Bunkering pier; Dry dock and vessel hoist; Fresh fish inshore/offshore fleet; Word boatyard and sawmill; Artisanal fish meal production unit; MCS aircraft and patrol vessel; Workshop and ship chandlery store	$18,000,000
Associated Project: Wet Fish Fleet and Boatyard	-
Industrial Investment Strategy Meeting, Freetown, Sierra Leone (FAO funded)	($ 180,000)
INDICATIVE PROGRAMME FOR TOGO	
Technical Assistance Projects:	
Primary Industry Development in Togolese Rural Fishing Villages	$ 158,000
Development of Offshore Artisanal Fishing Craft	$ 149,000
TOTAL FOR TECHNICAL ASSISTANCE PROJECTS	$ 307,000
REGIONAL SUPPORT PROGRAMME	
Regional Support and Training Centre for Area Development Primary Industry in Rural Fishing Communities	$ 870,000
Boat Building, Harbour Construction and Industrial Support for Marine Fisheries	$ 283,000
Industrial Management Skills for Fishery Industry Sector	$ 180,000
Development of Management Structures, Organizational Systems and Training Materials	$ 125,000
TOTAL FOR REGIONAL SUPPORT PROGRAMME	$1,458,000

1. CONTEXT AND JUSTIFICATION

1.1 Overview of the Fisheries Industrial System of West Africa

Figure 1 is a base diagram illustrating the major components of the fisheries industrial system of West Africa in quantitative terms. The present situation is further described in figure 2, which gives an overview of the West African fisheries industrial systems, showing the major components for the various fleets-foreign, joint venture, national offshore, marine artisanal and inland (almost wholly artisanal). The diagram also indicates the main markets served by each of these fleets, the processing of the catch and some of the main constraints in the inputs and services components.

Some three million tons of fish are produced annually from the inland and oceanic waters of West Africa. This production is valued at around US$2.0 billion, and it supports a vast array of industrial activities in vessel construction, processing, transport, marine engineering, fuel supplies, fishing gear, retail food trade and electronics. For the countries of West Africa, the fishing industry has three major benefits, namely:

(a) Foreign exchange earnings, approximately $500,000,000 annually;
(b) Protein food supplies, approximately $1,300,000 tons annually;
(c) Local employment, men and women, some one million persons in all.

However, approximately half the potential fishery industry benefits for West Africa are being reaped by industrial nations, whose distant water fleets fish in the offshore waters of the region. Figure 1, illustrating the regional FIS situation, shows that over one billion dollars worth of fish produce is taken by foreign fleets. In return for this, the larger coastal states receive a few million dollars each in license and revenue payments. Altogether, it is doubtful if West Africa earns five per cent of the value of foreign caught fish from the owners of the long distance fleets. The main reason for this is lack of management and surveillance facilities, but there are others. Groups of vessels from the USSR, Europe or Japan often negotiate for reduced fees of payments in kind, in return for vague concessions in general trade or aid from their governments.

West African states are also failing to capitalize on the opportunities for benefits that could accrue from service industries, such as vessel repair, processing, bunkering and supply of gear and spare parts. These would boost

Figure 1: **WEST AFRICA, MAURITANIA TO NIGERIA, FISH INDUSTRY SYSTEM BASE DIAGRAM**

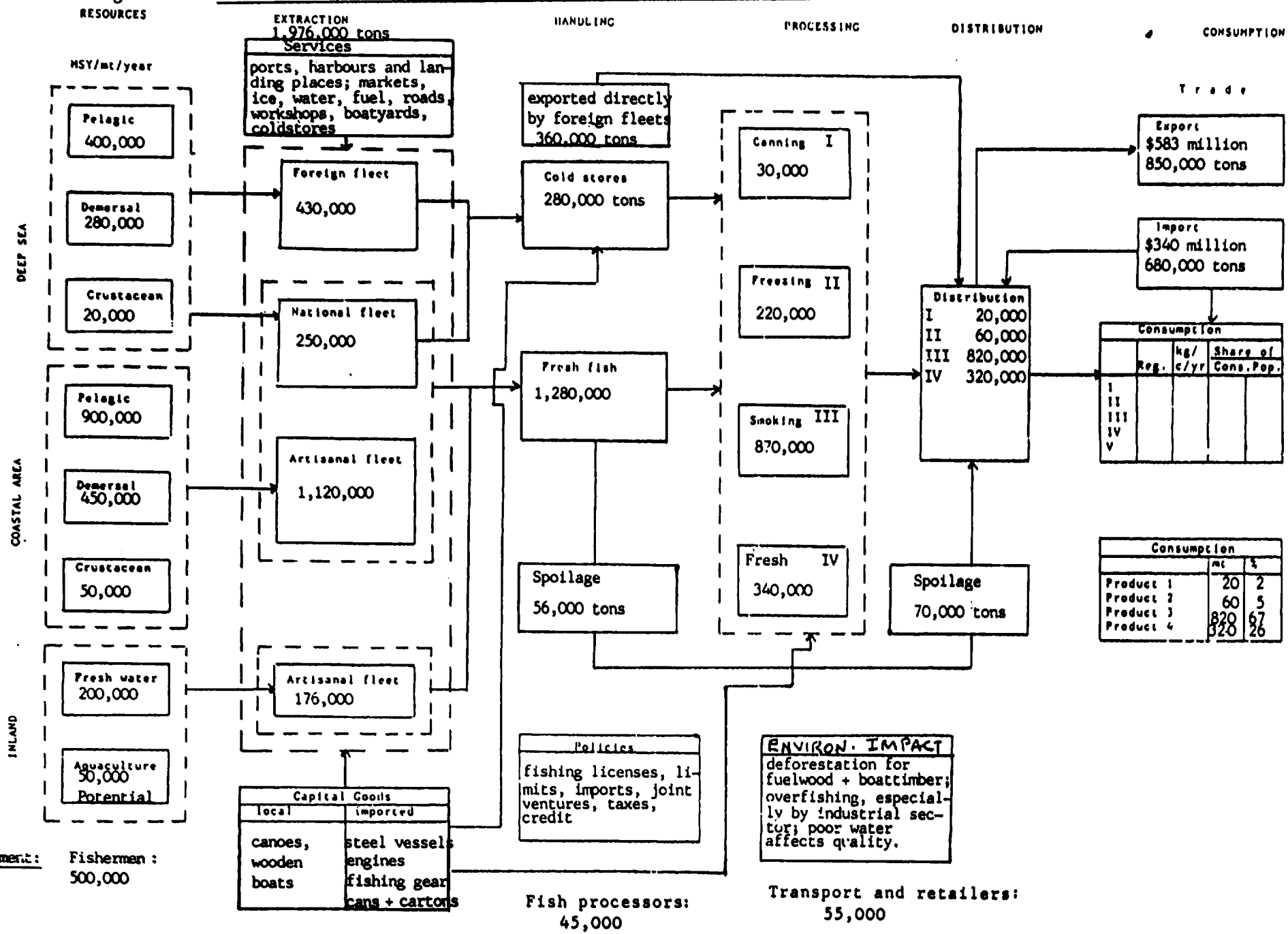
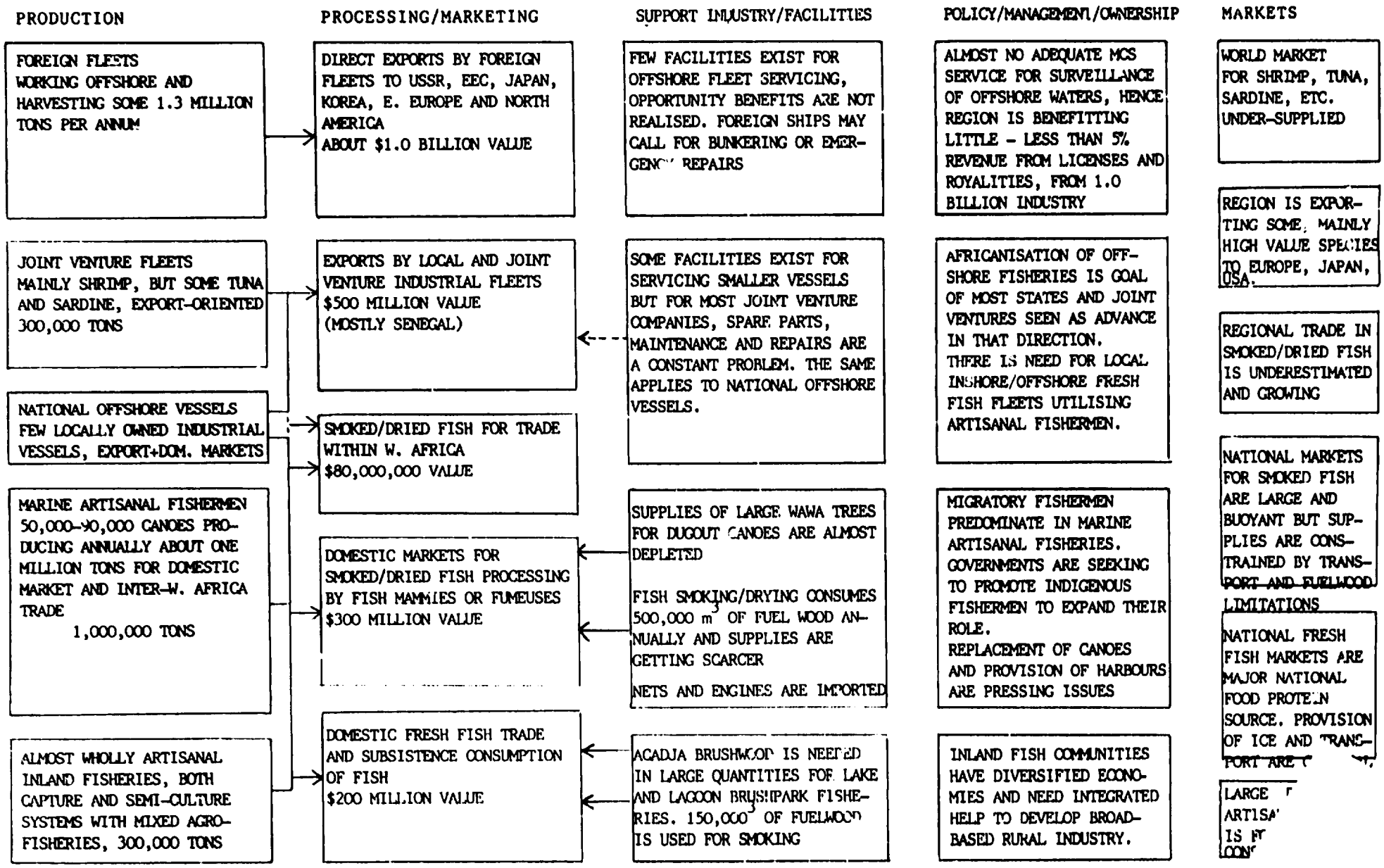


FIGURE 2: **WEST AFRICA FISHERY INDUSTRY SYSTEMS: REGIONAL DIAGRAM** *



* Unlike Figure 1, this diagram includes Morocco and Cameroon.

marine industrialization, would provide employment and would earn much needed foreign currency. But to date, such offshore fishery service industries are few and weak.

Fish resources, per se, are not seen as a present constraint to development or as an area requiring attention by this programme. Some conern exists among biologist because there are no precise, reliable estimates of the size of the various fish stocks. However, in few if any parts of the World is there any precise data on fish stocks.

The best available estimates continue to show a potential for further harvesting, and this is borne out by the numbers of vessels applying for licenses to fish in these waters. Resource surveys are carried out periodically by FAO and others, and both UNIDO and national Governments would be informed as and when these became available.

In contrast to the offshore industry, the coastal fisheries are flourishing in completely local hands. Over a million tons are produced annually, by canoe fishermen, who often must launch and land their craft through heavy dangerous surf off exposed beaches. The catch is processed and marketed largely by women traders who often provide the finance for fishing units. While all of the fishermen are regional, many are migratory moving up and down the coast over a period of years. The migratory fishermen originate chiefly from two countries, Ghana and Senegal. Their influence on national coastal fisheries is considerable, in transfer of fishing technology, boat design, ownership and share systems and catch handling.

The marketing and processing of marine artisanal caught fish is a well developed traditional industry which supplies inland areas with cured (smoked/dried) fish and also exports considerable amounts within West Africa.

Inland fisheries differ in that they are more environmentally sensitive, and their fisherfolk are multi-sectoral in their activities, being also involved in small scale agriculture, animal husbandry, forestry, water transport and other rural crafts. They are nonetheless very productive and provide over 300,000 tons of protein food for needy rural areas. Much of the production is from "brush park" fisheries, which are a kind of semi-culture of fish in lagoons and lakes or swamps. Aquaculture per se has not succeeded in West Africa, where it suffers from the prevailing malaise in agriculture, i.e. a lack of systems of permanence and a tendency to erosion and destruction of environmental support systems.

1.2 Regional institutional framework and ongoing projects

FAO maintains a regional fishery officer, based in Accra. In Abidjan it has established the Infopeche office which operates a regional service in fish market information. There is a regional project to assist artisanal fishermen, IDAF, which is based in Cotonou. It is an integrated project in the sense that it deals with capture, processing, mechanisation and quality, control aspects of artisanal fisheries. However, it does not wish to get actively involved in activities not directly concerned with fish, like woodlots for fuel, transport services, agriculture in fishing villages, or manufacture of non-fishery produce. There are IDAF projects in Benin, Ghana, Sierra Leone, Guinea and Cape Verde. The FAO country representatives are also a good source of fishery industry information in West Africa.

Bilateral projects in fisheries are being run by GTZ in Benin and Sierra Leone, by the EC in Togo, Sierra Leone and Gambia, and by Italy in Gambia and other locations. Many of these projects have pioneered aspects of people's participation and rural development for fisheries and have readily shared their experience with the UN Agencies.

A growing number of NGOs are doing useful work in the region and are happy to co-operate with the UN community. E.G.E.S.A. in Togo is doing excellent work on fish processing in Lomé. The American charity CARE is engaged in rural projects for inland fishing villages in Sierra Leone.

The programme should liaise with related field projects and offices, particularly from its regional projects. The regional training centre for primary industry development would maintain close links with the FAO IDAF programme as would the boats and harbours project.

1.3 Problems to be addressed: the constraints and bottlenecks hindering the further development of the system

Table 2 provides a summary of the main constraints and bottlenecks affecting the West African fisheries industrial systems and the options for overcoming them. It can be seen in the descriptions of the individual indicative programmes of the four countries presented here that many of the problems faced are common, not only to these countries, but to the West African FIS in general. Therefore, the options selected for solving the problems are in many cases similar. The inclusion of regional projects in the package is an attempt to pool resources for solutions to problems where feasible, thus avoiding unnecessary duplication.

Some of the most severe constraints are those relating to the environmental impact of the processing and extraction components, as these endanger the sustainability of resources for processing inputs and fisheries.

A second and related environmental problem with serious impact on inland fisheries is the management of soil and water resources. Destructive agro-fisheries practices carried on the survival atmosphere of the subsistence villages should be replaced with those that conserve and enhance the resource.

The constraints relating to the inland fisheries reflect the broader problems of rural stagnation and low productivity. Since inland fishing communities have mixed agro-fish economies, efforts to improve extraction and processing techniques and productivity can be most effective as part of an integrated area approach that attempts to develop many components of the system simultaneously, in particular other related industrial activities.

Further constraints addressed by the indicative programmes affect the artisanal marine fisheries: the depletion of large trees for canoes and the lack of adequate landing sites. Here the options for solving the problems will aim at helping the coastal artisanal fishermen develop offshore artisanal fishing capabilities.

A major set of constraints that affect the fisheries industries at all levels concern human resources, the need for skilled manpower, and in particular the lack of adequate organizational and management skills and structures. Appropriate options for solving these problems are an essential component of all the national strategies as well as the regional support programmes.

The overview of constraints and bottlenecks given in Table 2 relates these problems to the specific components of the fisheries industrial system, which can be referred to in Figure 1 (page 10).

Table 2: Constraints and Bottlenecks Hindering the Further Development of the West African Fisheries Industrial Systems

COMPONENTS	PROBLEMS	OPTIONS FOR SOLUTION
Fishery Resources	Destruction or over-harvestry of inshore fishing grounds, by large trawlers (mostly foreign)	-Construction of artificial reefs to prevent trawl fishing and enhance inshore environment
Extraction	Foreign fleets are harvesting the bulk of offshore fisheries potential, for which only a small percentage of the licence fees are collected	-Improve surveillance, monitoring and control capabilities -Expand national capabilities for harvesting offshore resources
	Migrant artisanal fishermen (Ghanaian and Senegalese) predominate in many areas	-Improve national capabilities in artisanal fisheries
Processing	Fish offal and waste not utilized	-Develop capabilities for converting offal and waste into fish meal for animal feed
Human Resources	Insufficient numbers of skilled manpower in many areas: technical, managerial, entrepreneurial	-Training at the national and subregional levels
Inputs: for Extraction	Almost no local manufacture of fishing machinery and very little of nets and gear. Repair services limited.	-Raise competence of local technicians and engineers. Improve facilities at boatyards, workshops and net lofts. Encourage local assembly, fabrication and repair.
	Depletion of large Wawa trees from which dugout canoes are made; Need for still larger boats to replace them	-Design and construction of functional wooden decked vessels to permit development of middle distance fresh fish fleet (will also require breakwaters or harbours)
	Depletion of Acadja brush wood used for brush park fisheries	-Planting and managing brush material woodlots
for Processing	Fish smoking consumes some 300,000-500,000 cubic metres of wood per year placing an enormous burden on West African forests	-Woodlot planting, forest management and fuel saving measures, including improved techniques and equipment
	Almost no local canning of fish in West Africa though considerable quantities of canned fish imported.	-Establish pilot plants at locations where sufficient raw material exists, e.g. Ghana and Sierra Leone (second phase).

Services and Infrastructure	-Lack of adequate harbours, piers, landing sites both for artisanal fleets and for ocean going vessels (fish landing and transshipment) -Few dry-docks, slipways or repair facilities for offshore fishing craft -Insufficient numbers of ice plants, freezers and cold stores	Develop and expand the infrastructure and services so as to promote the development of domestic fleets, increase income from services for foreign vessels, and improve facilities for handling fish destined for processing, fresh distribution or transshipment
Environmental Impact	Degradation of environment near inland and coastal fishing villages by destructive agro-fishery practices and competition for natural resources	Include soil and water conservation measures in integrated rural area development programmes
Related Economic Activities	Stagnation of rural or isolated marine and riverine villages owing to lack of capital, organization and access to markets	Integrated rural area development programmes to develop fishery and related economic activities simultaneously
Institutional Infrastructure	Inadequate organisation and management skills and structures at different levels: rural and urban, private and government, national and regional	Include development and dissemination of management and organisation skills, tools and structures at all levels throughout the programmes
Policies	Requirements of structural adjustment programmes resulting in price increases for essential commodities and related problems	Aim at increasing value added of exports, foreign exchange earnings and self-sufficiency, and reducing unnecessary imports

1.4 Regional development strategy

The regional development strategy, which is reflected in the development strategies of each of the country programmes, comprises a set of interrelated options selected to attain national development objectives by eliminating all major constraints and bottlenecks identified in the various components of the fisheries industrial systems, as were seen in Table 2. The regional strategy addresses problems at three different levels: artisanal fisheries, offshore fisheries and policies and management. In relation to artisanal fisheries, the strategy addresses environmental problems, provides landing and processing sites and services, and promotes primary industrial development of rural fishing communities. In order to tap the enormous potential of offshore fisheries, the strategy aims at providing facilities to control exploitation and thus maximize rents, establishing service industries for domestic and foreign fleets and promoting the growth of national fleets and national skills. Finally, management and policy effectiveness will be enhances by adopting and developing appropriate FIS organizational structures, training manpower at all levels, and identifying and working with regional networks for fisheries industry information, administration and development.

1.5 Target beneficiaries

There are three major beneficiary groups. The first is the fisherfolk of the artisanal sector. This includes fishermen and women fish traders, both numbered in the tens of thousands, plus all of the people in the rural fishing communities whose economies are to be boasted on a broad basis.

The second target group are the entrepreneurs, operators and employees of the industrial fishery enterprises including those involved with fishing fleets, processing plants, shipyards, ice factories, marine workshops and service facilities.

Thirdly, the Governments and the countries as a whole which should benefit from increased fish supplies, improved foreign currency earnings, greater employment and better management of natural resources.

1.6 Co-ordination arrangements

Within UNIDO, a co-ordinating committee will be set up to oversee the programme and to deal with urgencies as and when they arise. This committee will liaise with a similar committee or designated contract officers in FAO, in the Fisheries Industries and Fisheries Operations Divisions respectively.

1.7 Counterpart support capacity

Most national projects would come under the ministry responsible for fisheries, usually Agriculture, Natural Resources, or Rural Development. Investment projects may be handled by the industry or public works ministry but this would be a matter for the Governments themselves to decide.

Regional projects and activities would report directly to designated offices in each of the participating countries. As most of the field projects may heve UNV staff, the project imprests would be held by the UNIDO, UNDP or FAO representative in the respective countries.

Within UNIDO headquarters there would be a small co-ordinating committee to oversee the programme and it would liaise closely with a similar committee or designated officer within FAO.

None of the projects require Governments to create new posts or to maintain facilities or services after the end of the project. All ongoing activities are to be "localised" and continued by the communities or local specialists trained for that purpose and paid commercially for their services.

There are two slight exceptions to this. The investment project facilities will be maintained and operated by commercial bodies though certain units like the MCS aircraft or fish landing pier will obviously be controlled by a government body but the details would be determined during the final investment negotiations.

The other exception is the Regional Training Centre for Primary Industry Development. If it is successful and has useful impact it is hoped that external funding will continue for some time. When external funding is terminated, then an NGO might be approached to take over the management. In any event the buildings, and facilities are low cost and would not represent a capital loss.

2. PROGRAMME IMPLEMENTATION

2.1 Programme Objectives

The overall objective of the indicative programmes for the four countries presented here and the subregional support programme is to promote the harmonious development of all major components of the fisheries industrial systems of the target countries in West Africa.

In particular the goals are to promote the development of a sound industrial base for offshore fishery industries, the expansion and improvement of the marine artisanal sector, and to provide the basis for integrated industrial development of rural fishing areas. In pursuing these goals the programmes will endeavour to redress certain serious environmental problems and constraints. A major sub-objective of the programmes is the identification, development and refinement of management systems and organisational structures appropriate to the region, and the transfer of management skills to local enterprises.

2.2 Programme Elements

The programmes are designed to cover the three areas of policy development, technical assistance and promotion of investment. All three elements are incorporated, but not necessarily in every country programme or every project. The results of the UNIDO/FAO mission indicate that neither Togo nor Benin, for instance, are ready for large commercial investment in the fishery sector at this time.

Policies are a matter for national governments to decide: that is a prerogative of sovereign states. The role that UNIDO and FAO can play is one of providing support and advice, which may be expressed in the analysis of given situations and the drafting a regional or national forum to address specific issues, as in the case of the FAO-sponsored Fishery Industry Strategy Meeting to be held in Freetown, Sierra Leone, to discuss the implications of the exposed large investmeng project.

The programmes will, through their various projects, play a continuing role in providing policy-related advice and activities. This will be facilitated partly by taking advantage of a network of regional organisations and industry - or fishery-related offices. Both national and regional consultations will be held in connection with the projects, at which policy considerations will be discussed.

Technical assistance is the central plank of the project work, and it is geared as far as possible to achieving maximum impact with modest inputs. The programme has been designed to promote actual development rather than mainly to produce studies on development problems.

All of the technical assistance projects are based on methods and approaches which are successful and which have proven to be useful for the West Africa region. Experimental work is limited to areas where it is unavoidable, such as in the boats and harbours project, which is breaking new ground. There is a considerable intra-region element in the technical assistance, which is co-ordinated through the subregional support programme, so that successful approaches and technologies can be shared between countries.

Investment is a major goal for the offshore fisheries sector, which requires a considerable infrastructure and industrial support base on which to operate. Two major investment packages are proposed, one for Gambia and one for Sierra Leone. The investment in Gambia has been requested by both Government and industry, and there is already the possibility of obtaining a major part of the funding from one source.

The Sierra Leone investment package is a substantial one, which involves a complex with up to ten industrial elements. Financing may come from a private external source, which has already expressed interest, but much would depend on the results of the UNIDO feasibility study and the FAO strategy meeting. The latter, which has been arranged precisely to address the investment issues, has been approved for funding by the FAO unit, up to $180,000.

The programme elements are shown in Table 3. The projects are described in detail in the project documents in part B.

Table 3: Programme Elements

POLICY	TECHNICAL ASSISTANCE	INVESTMENT	
Sierra Leone Industrial Investment Strategy Meeting (FAO sponsored)	Regional: UNIDO Training Centre for primary industry development of rural fishing communities, with national sub-projects in Benin, Togo, Sierra Leone and others.	Gambia:	Fish landing pier 50 ton per day ice plant related land/water transport
Regional Policy to Monitoring, Control and Surveillance of Offshore Fleets, Mono River Union and other states (above Meeting)	Boats and harbours development project with related national activities in UNIDO and FAO projects in Cameroon, Benin, Togo, Ghana, Sierra Leone, Senegal and Gambia.	Sierra Leone:	Fish terminal and transshipment facility. Cold store and ice plant. Workshop, Dry-dock, slipway. Sawmill and wood boat yard. Fish meal production unit. M.C.S. aircraft and launch. Ship bunkering pier. Fresh fish processing facility. Ship chandlery and spares store.
Regional Policy for Canoe Replacement and Harbours Development (UNIDO reg. project)	Management skills and organisational systems development for West Africa fish industries, urban and rural. Pre-projects activity.		
Policies Towards Rural Development and Artisanal Fisheries (from UNIDO Reg. Centre)	Other national projects: FIS Sites and Services, Benin Artificial Reefs, Sierra Leone and Gambia Assistance to Fish Export Plants, Gambia Fish Meal Production, Gambia		
Migratory Fishermen, National Attitudes to, Policy Development (Joint FAO IDAF/UNIDO RTC DPI)			
Africanisation of Offshore Fisheries and Growth of Local Industrial Services (National Governments/UNIDO Programme Coord. Committee)			

The relationship between regional and national projects is important and also how national projects are tailored to national needs. This is detailed in tables 4, 5 and 6, 7 for the four target countries. How the national projects and activities are served by the regional projects is illustrated in table 8.

It is important to remember that where gaps appear in the programme it is because some elements are already being taken care of by existing or pipeline projects run by the UN, Government or bilateral agencies. Also in some countries a particular regional problem may not be a national constraint or priority need. Two of the four target countries have no large offshore fishery activities because the size of the marine zone and the national fish resource are rather small. Therefore there is neither need nor justification for large investment in offshore fisheries. In one of these countries, inland fish production is far more important than marine fish production and therefore merits serious attention.

The whole programme has a time scale of 3 years given simultaneous starts to be projects. Continuity is assured by the management and organisational elements built into the programme. These place a minimum burden on governments and focus instead on the development and strengthening of corporate skills and capabilities in the target groups themselves. Some projects should be viewed as first phase exercises and this refers particularly to the rural fishing communities. But any follow-up activities would necessarily depend on the results and recommendations of the tripartite reviews and evaluations.

2.3 Risks

The programmes are ambitious, and are designed to produce the maximum impact in the shortest term possible and at minimum cost.

One major risk is that time may be not long enough, particularly for some of the projects dealing with depressed rural fishery areas. To counter that, it is suggested that those projects be seen as a first phase and that from the project tripartite reviews it be determined what progress has been made, whether the on-going activities may manage to continue without external assistance, or if not, the form that further assistance should take and whether it is justified.

It is expected that some of the projects will be in a good position to continue on their own, such as the sites and services project in Benin, the primary industry development project in Sherbro, Sierra Leone, and the fish meal production project in Gambia. Others, such as primary industry

Table 4: NATIONAL PROGRAMME LINKS: BENIN

COMPONENT	NEEDS	SITUATION	UNIDO PROPOSALS
Extraction	Cotonou: Marine Fishermen require help with mechanisation	FAO IDAF Model Project has established workshop and service unit	
Processing Handling Distribution	Cotonou: Fish smokers and tradesmen evicted from harbour have no base for operations	Situation is not covered by any existing project	1. Sites and services project to provide work complex close to harbour
	Cotonou: Freezer trawlers and refrig. fish vans are in need of skilled maintenance	Situation is not covered by any existing project	2. Refrigeration workshop is included in the above industrial site
Infrastructure	Coastal fishing villages are suffering because of lack of protection from surf obliges boats to operate from Cotonou	FAO and others have studied the problem but so far have not arrived at a cost-effective solution	3. The situation to be re-examined by the regional boats and harbours project and possible new solutions explored including commodity aid of floating breakwaters.
Energy	Women fish smokers (Fumeuses) require large volumes of fuel wood to smoke fish	IDAF model project has successfully introduced more efficient chorker oven and trained local extension workers	4. This technology to be incorporated in the sites and and services project
Environment	Lac Nokoue fishermen wish to replant mangrove trees in Lagoon now that the water has become saline	A GTZ project is working with them on this and despite a first failure due to high floods, is succeeding	
Related economic activities	Lac Nakoue and Oueme river basin fishermen need to diversify their economy to raise incomes without pressuring the unique environment	The FAO IDAF regional project has no plans to tackle this as it concerns too many non-fishery activities	5. Development of primary industry project supported by regional training centre, and co-ordinating with G.T.Z.
Inputs	Supply of bush materials and branches to make brush park fishery enclosures is becoming scarce	The GTZ project has identified species and planting procedures to grow material	6. Planting and managing of brush material woodlots will be integral part of above project

Table 5: NATIONAL PROGRAMME LINKS: THE GAMBIA

COMPONENT	NEEDS	SITUATION	UNIDO PROPOSALS
Handling and Processing	Banjul: The national fish export industry is constrained by lack of ice and poor inadequate landing facilities	Several fish plants are struggling to get supplies delivered and the boats also lack ice for their catches	1. A $3 million fish pier and a 50 ton per day ice plant are proposed in the investment project.
Technical skills	Banjul: Fish plant staffs require trainging in refrigeration maintenance and fish quality control. Vessel engineers also need training in engine repair and operation	Most plants have one good engineer, but he is overworked and is unable to train his assistants. Plant maintenance often suffers	2. A technical assistance project to provide the necessary training and assistance over a 2 year period
Resources and Management	Coastal fishing grounds are often illegally invaded by trawlers, causing destruction of young fish and damaging the passive fixed gear of inshore fishermen	The country has no effective fishery protection fleet and even if it did, the grounds would need to be guarded day and night	3. A project to construct 20 artificial reefs on inshore grounds. These would act as obstacles to trawling and as habitats to young fish
Technical skills	Coastal fishing villages require help to improve boat construction, fish marketing and fish smoking	The EEC and Italy have a series of integrated projects to achieve this	
Fish spoilage	Considerable volumes of fish offal are allowed to rot and wasted, while meantime expensive fish meal is imported	There is no fish meal plant in the country and no artisanal skill in its production	4. A 3 year project to train local women in meal production and to open up local markets
Aquaculture	Fish farms now being established for cultivating prawns and fish require fish feed pellets	Pellets have to be imported at considerable cost	5. A fish feed pellet production unit will be set up as part of the above project

Table 6: NATIONAL PROGRAMME LINKS: SIERRA LEONE

COMPONENT	NEEDS	SITUATION	UNIDO PROPOSALS
Resource management	Country has no monitoring, control and surveillance service or facilities to police the offshore fishery	FAO has provided some training in MCS but no equipment. The state as a result is losing millions of dollars in revenue	1. A patrol aircraft, fishery launch and management assistance are incorporated in the investment proposal
Infrastructure	The legal requirement of transshipment can not be enforced due to lack of a fish pier and cold store	Foreign vessels export directly, fish caught in S.L. waters thus depriving the state of millions of dollars in revenue	2. Fish terminal pier and transshipment facility is the central provision in the investment project
Services	Ship servicing, bunkering and repair facility for offshore fishing fleets	The 150 deep sea vessels fishing S.L. waters have to go as far as Las Palmas for repairs	3. A dry-dock, vessel hoist, repair workshop, chandlery store and bunkering pier are to be established under the investment project
Extraction	The country was no middle distance wet fish fleet of fishing craft	Artisanal canoes have reached their limits in size and range	4. A large ice plant and a boatyard are proposed to provide the vessels and facilities to create a middle distance fleet
By-products	Fish meal is needed for cattle and poultry feed	At present all fish offal goes to waste	5. A labour intensive meal production unit
Investment	Clear policy decisions to facilitate investment	Many unanswered questions which Government has promised will be addressed.	6. FAO supported industry meeting to be attended by senior Government, UN, and private sector representatives

Table 6 (continued): NATIONAL PROGRAMME LINKS: SIERRA LEONE

COMPONENT	NEEDS	SITUATION	UNIDO PROPOSALS
Investment	Feasibility study for investment proposal (harbour)	Some interest from private sector	7. Project feasibility study
Fishery management	Inshore fishing grounds need protection from offshore trawlers	Lack of protection fleet results in regular illegal invasions by trawlers	8. Artificial reefs project to prevent trawling and create fish habitats
Rural and artisanal fisheries development	Sherbro Island fishermen have so far been by-passed in FIS development	ILO access road is nearing completion and Government requests project like Shenge/Tombo	9. Primary Industry Development project supported by regional centre
	Local artisanal fishermen need nets and engines but cannot import these as they have no access to foreign currency	GTZ and FAO projects have supplied imported gear but there is as yet no long term solution as Government is faced with too many other foreign currency demands	10. P.I.D. Sherbro project will supply these initially then the investment project chandlery store will do so, accepting local currency payment, to meet its own local currency requirements

Table 7: NATIONAL PROGRAMME LINKS: TOGO

COMPONENT	NEEDS	SITUATION	UNIDO PROPOSALS
Extraction	Lomé: local artisanal fishermen need help with mechanisation and fisheries technology	FAO IDAF project and TCP is working with local co-op and is successfully transferring technology	
Processing	Lomé: Fish smoking industry requires quality and efficiency improvements	Local NGO with EEC support is providing practical help on this	
Fleet development	Lomé: Local fishermen are now looking for larger fishing boats with greater fishing power than canoes	To date there is no simple economical vessel in W. Africa to fill this need	1. Project to construct functional craft and to train boatbuilders and fishermen
Rural and artisanal fleet development	Inland fishing communities are stagnating due to lack of technology and access to markets, poor internal organisation and environmentally damaging practices	The Government has technical field stations and is assisting when possible, along with N.G.Os but an integrated area approach is needed, based on proven methods	2. Assistance from regional boats and harbours project 3. Development of primary industry projec. in Anie and Mono river basin communities, promoting integrated development and supported by regional training centre
Energy, Environment	Coastal fish smoking activities require several thousand cubic metres of wood annually	At present this is harvested from wild forests which are diminishing	4. Woodlots for fuelwood, planted with fast growing species and managed by communities or families, are incorportated in above D.P.I. project, creating employment, reducing pressure on forest land, and providing adequate supplies of fuelwood for fish smoking industry.

Table 8: RELATIONSHIP OF REGIONAL TO NATIONAL PROJECTS

TRAINING CENTRE FOR AREA DEVELOPMENT OF PRIMARY INDUSTRY IN RURAL FISHING COMMUNITIES

The centre will compile examples and information on rural industry technology for West Africa, plus didactic tools and training exercises for successful, effective and appropriate strategies and methods of promoting primary industry development in rural fishing villages.

It will be a rural area based centre with traditional village type buildings and using appropriate technologies for its water and power supplies, sanitary and communication facilities. Successful and ongoing projects within reach of the centre will be used as examples and test cases for training.

National projects served by the regional training centre	BENIN	Lac Nokoue and Oueme River Basin Communities, Primary Industry Development
	TOGO	Anie and Mono River Basin Communities, Plateau Region, Primary Industry Development
	SIERRA LEONE	Sherbro/Bonthe Region, Coastal Communities, Primary Industry Development
	GHANA	Dzemini/Kpando area S.E. Volta Lake
Others expected	Inland fishery areas of COTE D'IVOIRE, LIBERIA	

The centre will liaise with the FAO regional IDAF project and share with it, rural industry technology and development models, in return for technical advice on fisheries matters.

The centre will also encourage and propagate appropriate and effective technologies developed by projects such as: Gambia, fish meal production, and Benin, fish industry site fumeuses operations.

But the primary trust of the centre's work will be the establishment of a cadre of trained managers and organisation specialists for rural industry in West Africa.

Table 8 (continued): RELATIONSHIP OF REGIONAL AND NATIONAL PROJECTS

DEVELOPMENT OF BOATS AND HARBOURS FOR ARTISANAL MARINE FISHERIES IN WEST AFRICA

The project will address the following problems:

1. Depletion of large wawa trees from which the large West African Fishing canoes are made.

2. Development of acceptable substitute planked boats to replace the 50,000 marine dugout canoes.

3. Development of acceptable, appropriate decked boats as the next step up from the large mechanised canoes.

4. Design and site selection of suitable breakwaters or harbours for surf-beach areas, and for other areas where new boats, too large to be beached, are to be used.

Related projects and activities	TOGO	Development of offshore artisanal craft.
	GAMBIA	Fish pier, investment project
	SIERRA LEONE	Development of local wet fish fleet and boatyard, investment project.
Other related projects	CAMEROON	Establishment of boatyards, plywood factory, and development of suitable riverine and offshore boats.
	BENIN	Model project (FAO) Cotonou vessel technology centre.

NOTE: The project could be a joint UNIDO/FAO activity with UNIDO taking responsibility for harbours, sawmills and boatyards, and FAO working on development and testing of boat designs.

Table 8 (continued): RELATIONSHIP OF REGIONAL AND NATIONAL PROJECTS

DEVELOPMENT AND APPLICATION OF MANAGEMENT AND ORGANISATION STRUCTURES AND SYSTEMS FOR INDUSTRIAL DEVELOPMENT IN WEST AFRICA

and

INDUSTRIAL MANAGEMENT SKILLS FOR THE FISHERY SECTOR

These two projects have direct inputs and implications for both regional and national activities and for both investment and technical assistance projects. They are designed as support activities to address the following problems:

1. Development of corporate or group management skills for West Africa, for both urban and rural fisheries industry activities.

2. Development of didactic tools and training exercises for effective transfer of skills and knowledge in management and organisation.

3. Analysis of successful and effective methods of people's participation seen in recent projects in West Africa

4. Application of the FAO "Maputo" model of resource assessment and utilisation, to the fishery communities of West Africa, inland and coastal.

5. Streamlining, strengthening and broadening the application of the UNIDO MEPS model to all West African fish industry situations.

6. Appropriate organisations for production management and industrial development, for fishery areas of West Africa.

Related Projects:

Regional: Training Centre for Primary Industry Development
Benin: Lac Nokoue and Oueme River Basin Communities project
Togo: Anie and Mono River Basin Fishery Communities project
Sierra Leone: Sherbro/Bonthe region Coastal Communities project
Sierra Leone: Investment project, management training scheme
Guinea Conakry: Fishery Industries Programme, MEPS and management applications
All other projects with management or organisational elements.

development in Togo, are dealing with situations that require steady progress to promote industrialisation over a considerable period. But the aim of the project will be to develop activities to the point at which some other group, such as, an NGO, might take over responsibility.

There is a risk in Sierra Leone that the policies and measures needed to facilitate the investment may not be agreed to. If that occurs then there is no other possibility as the Government is also far from any agreement with the IMF. But as the President has expressed strong interest and the Minister has pledged full cooperation, it is hoped that agreement will be achieved.

As the whole programme is an integrated package based on the UNIDO typology, the indicative country programmes, the UNIDO/FAO Mission findings, Government policies and priorities, then it should be borne in mind that deletion of some projects will adversely effect achievement of the programme goals and objectives.

2.4 Prior Obligations and Pre-requisites

Most of the projects will require sites to be identified for their location and for some, the area of their activities. Between submission of requests and the start of project activities, governments should explore possible sites and have them available for preparatory work. This applies particularly to the Sites and Services project Benin, and the Regional Training Centre which will be located in a rural fishing area either in Sierra Leone or Ghana.

The Primary Industry Development Projects are located in their respective target areas, probably in the major villages. While the region of their location is named, the particular target villages must be selected. These should total about 5,000 to 8,000 persons in all, in from 6 to 12 villages.

Investment project sites are already identified and may be further pinpointed during the feasibility studies.

It is important in scheduling the projects that the regional management projects start early so that projects can benefit from their outputs. The same applies to the Regional Training Centre for Primary Industry Development.

As the FAO sponsored Industrial Strategy Meeting is due to take place in March 1990, the UNIDO feasibility study for the related industrial investment should start before that date so that a working paper at least, of major issues facing the investment, could be discussed at the meeting.

2.5 Evaluation

Each project has a built in arrangement for tripartite reviews and evaluation. Overall evaluation of the programme would be the responsibility of the Co-ordinating Committee.

It is proposed that the committee undertake an in-house evaluation of progress based on reports from the projects and from the UNDP, UNIDO, FAO and Government offices. During the third year a major evaluation should take place with cooperation from FAO. This might be done in conjunction with project evaluation such as that due for the Regional Centre for Primary Industry Development and its related projects. This would save time and cost.

The final evaluation would be submitted to the donors (who would also have a representative on the evaluation team) and would be used to determine what follow up or second phase efforts if any might be appropriate.

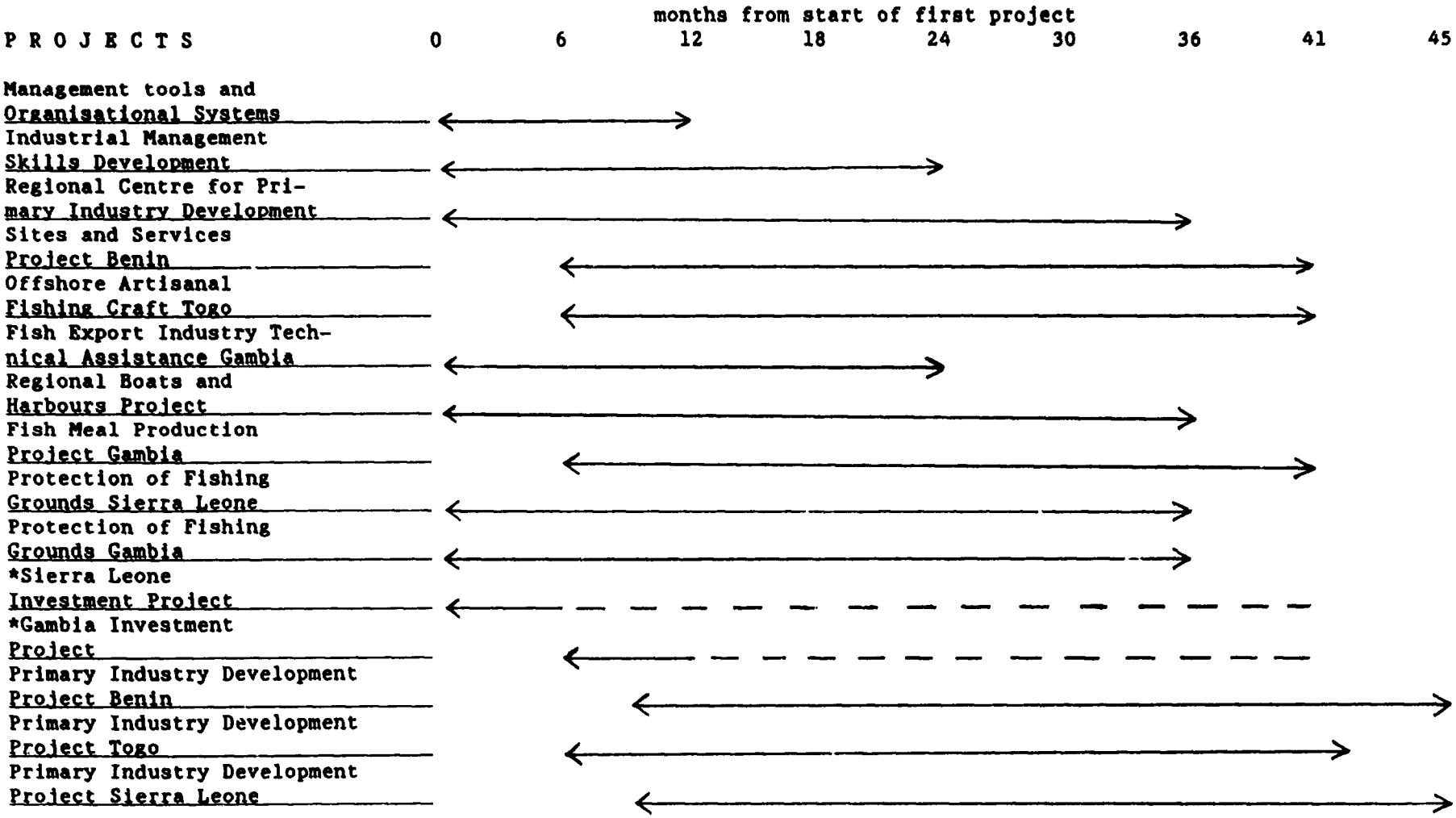
2.6 Schedule

The following is a draft schedule to serve as a guide to UNIDO, FAO and Fundings Agencies on the time scale and relative timing of the various projects.

November 1989	Submission of Programme to UNIDO and to FAO Comments by FAO on the content, and on which projects it would be integrated in operating.
December 1989	Finalisation of Programme documents. Start of Sierra Leone Feasibility Study
January 1990	Official Requests from Governments
February 1990	Submission of Programme to donors. FAO Investment Strategy Meeting Sierra Leone
March 1990	Ghana proposals and requests which relate to regional programme, also submitted to donors
April 1990	First positive response by donors Sierra Leone investment package presented to Government
May 1990	Signing of first project documents. Start of Gambia investment feasibility study.
June 1990	Recruitment of project staff and consultants. Identification of project sites.

June 1990	Start of: Industrial Management Skills Project
	Development of tools and organisation systems project
	Training Centre for Primary Industry, project
July 1990	Completion of Gambia investment feasibility study
	Signing of further project documents
August 1990	Start of: Sites and Services Project Benin
	Offshore Vessels Project Togo
September 1990	Start of: Boats and Harbours project (regional)
	Fish Export Industry T.A. project Gambia
October 1990	Presentation of investment package proposal to Gambia
	Start of: Fish Meal Production Project Gambia
November 1990	Protection of Fishing Grounds Project Sierra Leone
	Protection of Fishing Grounds Project Gambia
December 1990	Sierra Leone Government accepts investment proposal
	Gambia accepts investment proposal
January 1991	Work starts on Sierra Leone investment project
	Work starts on Gambia investment project
February 1991	Start of: Primary Industry Project Benin
	Primary Industry Project Togo
	Primary Industry Project Sierra Leone
March 1991	All projects under way, programme is now in full operation
April 1991	Completion of regional training training Centre buildings and facilities
	First of Industrial Management Skills Courses
June 1991	Commencement of Training exercises at the regional centre.
	Completion of management tools and organisation systems project.
August 1991	Finalisation of site work for service industries Benin.
September 1991	First production work activities start in P.I.D. projects
October 1991	Further Industrial Management Skills training
November 1991	Construction starts of first artificial reefs
December 1991	Completion of first Togo offshore artisanal vessel.
	Benin Sites and Services facility begins to function.
January 1992	Improved production systems begin in all P.I.D. projects.
June 1992	End of Management Skills Project
September 1992	End of Gambia Fish Exports Industry T.A. Project.
January-June 1993	Tripartite review missions all projects.
June 1993	End of life of programme projects.
-February 1994	Follow up phases commence as appropriate.

DRAFT SCHEDULE OF AND PROJECT IMPLEMENTATION



* Note: The two investment feasibility studies and the FAO Industry Strategy Meeting would be completed before the first project starts.

S U M M A R Y B U D G E T

PROGRAMME COMPONENT	TECHNICAL ASSISTANCE PROJECTS	INVESTMENT PROJECTS	OTHER RELATED PROJECTS
Indicative Programmes			
1. Benin	$ 282,000		$1,500,000 (GTZ)
2. The Gambia	$ 446,000	$ 3,500,000	$1,800,000 (EEC)
3. Sierra Leone	$ 592,000	$18,000,000	$ 180,000 (FAO)
4. Togo	$ 297,000		
5. Sub-regional Support Programme	$1,455,000		$2,500,000 (FAO, DANIDA)
GRAND TOTAL	$3,052,000	$21,500,000	$5,980,000

3. INDICATIVE PROGRAMME FOR BENIN

3.1 Description of the Fisheries Industrial System

Figure 3 is a base diagram of the Fisheries Industrial System of Benin. A quantitative description of the components of the system, as far as available, is given below.

3.1.1 Resources

The continental shelf off Benin's coastline (120 km) is narrow, comprising a total area of 3,100 sq.km. The EEZ covers 44,450 sq.km. Coastal lagoons and lakes yield a total area of 330 sq.km. Relatively more important in Benin than in other West African countries are the many rivers and flood plains that cover a total area of 1,300 to 2,000 sq.km. depending on rainfall.

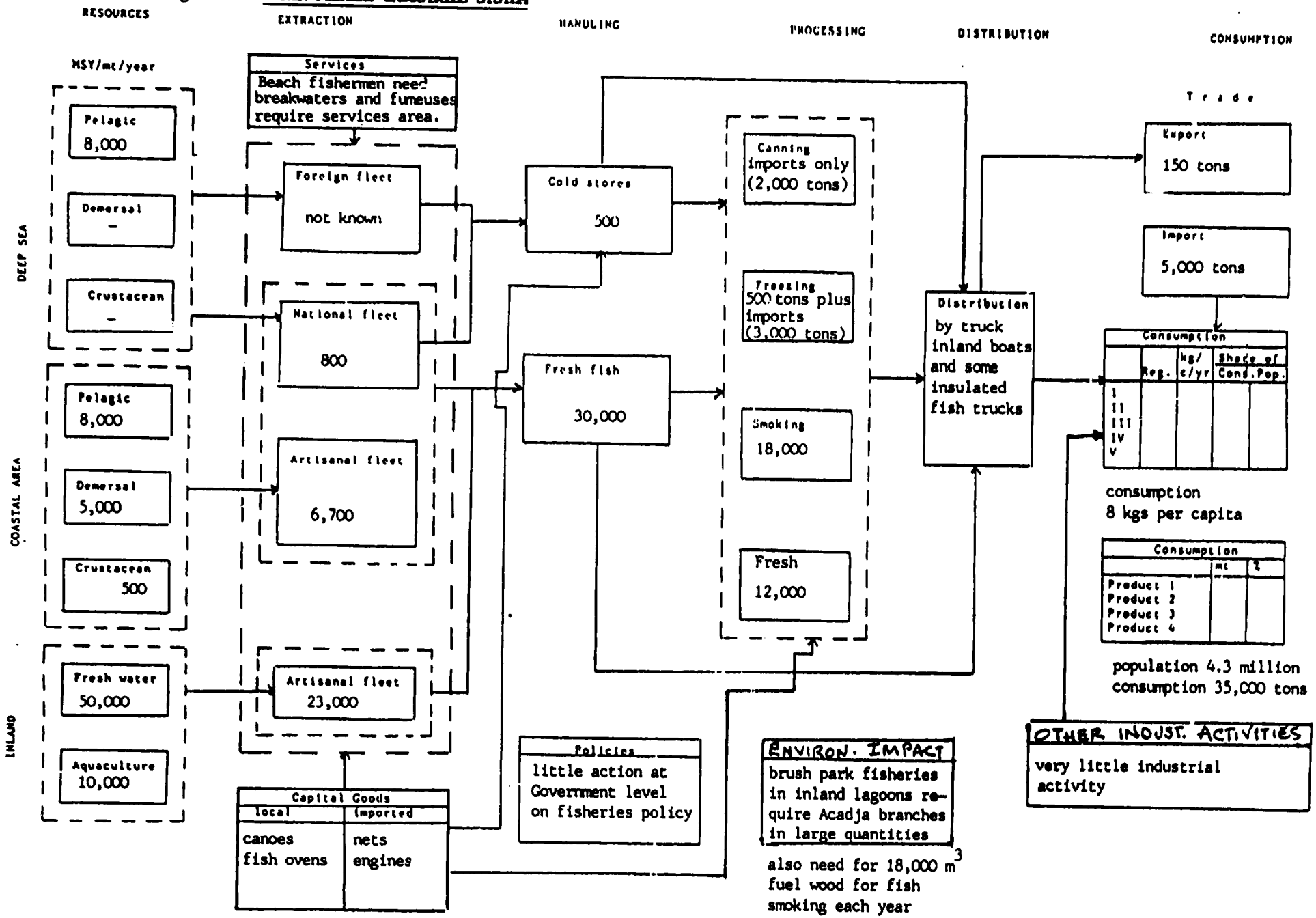
The marine resource is not very large. Neither its total size nor its division into species is very well known. Guesstimates put the pelagic biomass at 13,800 metric tons and the demersal biomass at 5,200 metric tons.* The maximum sustainable yield for the marine resources is put between 7,000 and 19,000 metric tons/year, whereas the maximum sustainable yield for lakes and lagoons is estimated at between 15,000 to 20,000 metric tons/year and those for flood plains at 10,000 metric tons and rivers at 3,000 metric tons. Thus, the total maximum sustainable yield for Benin could be somewhere between 25 and 52,000 metric tons/year.** The exploitation potential for marine fisheries could be 8,000 metric tons/year (or 25.6 kg./hectare), that is at least twice as much as is presently caught by both industrial and artisan fishermen. Nonetheless, it must be recognized that there is not much hope for a significantly increased catch from the EEZ because of the poor off-shore resources and the narrow continental shelf.

---

* Garry M. Bernaczek et. A. Aziablé, Profil des Ressources Halieutiques du Benin, COPAC/TECH/86/72, FAO, Dakar, 1986, p.20.

** J.D. Balarin, Etudes Nationales pour le Développement de l'Agriculture en Afrique 5, Bénin, FAO, Rome, Novembre 1984, Table 12, p.25.

Figure 3: **BENIN FISHERY INDUSTRIES SYSTEM**



Extraction

In Benin, inland and lagoon fisheries are much more important than marine fisheries, the former accounting for between 80 to 85 per cent of all landings. Similarly, by any measure, artisan fishing is by far the most important fishing activity in Benin. Lately this position has strenghened with the gradual disappearance of Benin industrial fishing vessels - today it is not clear whether there are any such vessels in active operation.

Characteristic of the inland fishery in Benin is the "acadja", a fish park formed by dense masses of tree and shrub branches stuck into the soft bottoms of shallow water bodies to form a habitat that attracts and concentrates fish. These acadjas range in size from 1,000 to 10,000 sq.m. In 1981, their productivity averaged 4.1 metric tons/hectare per year.

Among the reasons identified for the decline in productivity of Benin's fisheries is the intrusion of salt water into the lagoon system after the construction of the Cotonou Port in 1964, which changed the ecology of the lagoon system. Overfishing has also contributed to lower yields. At the same time the cost of fishing has gone up, primarily through the destruction of acadjas by marine borers and through the increasing costs of rebuilding the acadjas due to a decreasing supply of tree and shrub material (desertification). Acadjas are no longer permitted in Lake Ahémé.

The coastal, artisan fishing activity is greatly hampered by the presence of sand bars at most of the beaches and by the lack of safe landing sites, except Cotonou Port. The building of protected areas would be expensive and difficult because of erosion problems. Furthermore, no safe and practical surf boat type has been designed for this fishery.

Processing

All fish caught in Benin is consumed locally. Approximately 40 per cent nationwide - nearly 100 per cent in coastal areas - is consumed fresh. The remainder is primarily smoked, but fish is also fried in palm oil, salted, or dried for short-term storage.*

The largest share of the shrimp catch is also consumed locally but there are two small processing facilities in Cotonou freezing annually up to 100 metric tons shrimp for export.

---

* FAO Fishery Country Profile: Benin, 1987 (draft)

Trade

Imports of frozen or chilled fish (from foreign factory ships) into Benin are now some 3,000 metric tons per year, about half of what they used to be ten years ago. Still, imports constitute some 15 per cent of the total amount of fresh, chilled or frozen fish available on the market in Benin. Some imports of frozen fish are stored for subsequent inland smoking and distribution.

Distribution

Because of the lack of distribution facilities and cold chain, most fish caught in Benin is consumed locally. At the place of capture, the fish is consumed fresh whereas further away, the preferred form is smoked. Shrimp is consumed locally, and fresh.

The inadequacy of distribution and storage facilities in Benin is probably the main reason why the average per capita consumption in the country is one of the lowest in West Africa.

Consumption

In 1964/66, fish products accounted for 7.5 per cent of all protein intake in Benin, and for 48.8 per cent of all animal proteins.* By 1970, fish consumption had increased, accounting then for 54.5 per cent of all animal protein intake. Today, due to the decreasing productivity of Benin's fisheries, fishery products no longer account for more than one half of the national protein intake. Thus, per capita consumption has now declined to less than 7 kg per year, down from 11 to 12 kg earlier when supplies where more abundant.

Declining real incomes, increasing prices, and inadequate storage and distribution have all contributed to the decline in fish consumption. The decline might have been even more drastic were it not for the severe droughts in the region that have severely affected meat supplies.

The geographical distribution of fish consumption in Benin is not so heavily concentrated in coastal areas as in other West African countries thanks to the substantial inland fisheries in Benin.

---

* J.D. Balarin, op. cit., p.15.

Institutional Framework

The Direction des pêches, within the Ministry of Rural Development and Cooperative Action, is the main agency resposible for fisheries. It works closely with CARDER (Centre d'action régionale pour le développement rural) within the same ministry. Since October 1972, the legal context of the fisheries sector remains unclear. Prior legislation was decleared void without putting other procedures unambiguiously in place. Thus, some old provisions continue to apply but is not being enforced. For example, the zone reserved for artisan fishing is set at three nautical miles form the low tide mark, but even State companies (BELIPECHE) continue to fish in this zone.

The Government is directly involved in the sector through the State companies BELIPECHE (fishing) and OBEPED (import, trade, processing). The Government has also attempted to group all productive units within the artisan sector into co-operatives.

2.2 Government Objectives

The Government of Benin whishes to conserve both marine and inland fishery resources for the future by proper management, and to encourage sustainable harvesting by national fishermen. Fish production should be maximised to reduce imports.

Beninois marine fishermen are to be encouraged to increase their share of the national catch (as opposed to migratory fishermen) by assisting them to obtain better vessels and equipment.

Inland fishermen are to be helped to increase production of fish and agro-produce in ways that do not harm the resource or damage the environment. Quality of fish produce is to be improved to prevent losses from fish spoilage.

2.3 Constraints to Fishing Industry Development

Constraints	Proposed Solution
Resource limitations	Strengthening of brush park fisheries. Construction of artificial reefs.*
Lack of fish port facilities.	Establishment of fishery service industry centre. Provision of floating breakwaters for surf-bound villages.
Difficulty in obtaining finance from formal sources for small-scale sector.	Utilise traditional credit systems and permit smokers and vendors to lease and manage facilities.

2.4 Strategies

The strategy for Benin's fishery industry sector must be somewhat constrained by resource limitations, particularly in the marine fishery. Government efforts to develop an industrial fleet and Government/FAO efforts to boost artisanal fisheries have both had to contend with the relatively small EEZ and the modest fish stock it encompasses.

Environmental factors play a major part in determining the direction of fishery development in both marine and inland fisheries. The heavy surf conditions prevailing much of the time on the exposed beaches is a severe obstacle to the development of coastal village fleets. In the lagoons the road for Acadja brush materials and careful management of both fish and flora resources is paramount. The GTZ project which is planting mangroves in the large lagoon is an excellent example of an ecologically focussed project which will benefit fisheries production.

---

* Later phase, if Gambia and Sierra Leone reefs prove suitable to Benin.

2.4.1 Marine Fisheries Strategy

This follows the programme emphasis on sites and services for the coastal fisheries, and it builds on the excellent work of the FAO IDAF model project which has been based in Cotonou. The strategy is to complement the FAO IDAF technology development centre for fishing vessels with an industry services complex near the port. This will serve the fish processing and technical services sub-sectors. It should improve the quality of processed fish and reduce the time and labour costs created for both fishermen and processors by the lack of facilities in the proximity of the fishing harbour.

For the fishing villages like Grande Pepo to the west where the major problem is heavy surf on the landing beach, the regional boats and harbours project will assist. The strategy is to test floating breakwaters which may be provided under the terms of bilateral commodity aid. The idea is being given serious consideration by Italy and technical assistance advice has been provided by the former FAO/World Bank harbours expert Mr. W. Guckian.

2.4.2 Inland fisheries

An integrated and ecologically sensitive approach is incorporated in the strategy for inland fisheries. This is in common with and complementary to the work of the present GTZ project. The impressive Lac Nokue fisheries are a great national resource but they are environmentally sensitive and closely interlinked with the multi-faceted economy of the lake communities which depend also on tourism and agro-produce to supplement incomes from fish. The Primary Industry Project will assist broadly in these areas.

2.5 Budget

2.5.1 National projects

Personnel, U.N.V. officers	$ 78,834
National experts and administrative support	$ 74,600
Travel and mission costs	$ 21,166
Equipment	$101,000
Miscellaneous and food for work	$ 25,400
TOTAL	$306,000

2.5.2 Regional projects directly assisting Benin
(harbours and primary industry support)

Personnel, experts and consultants	$ 434,000
U.N.V.'s administrative support and travel	$ 154,000
Training and regional meetings	$ 206,000
Equipment and support to national projects	$ 295,000
Miscellaneous and overheads	$ 64,000
TOTAL	$1,153,000

4. INDICATIVE PROGRAMME FOR THE GAMBIA

4.1 Description of the Fisheries Industrial System

Figure 4, the base diagram of the FIS of the Gambia provides a quantitative overview of the main components of the system, as described below.

4.1.1 Government projects

Projects recently undertaken and in the process of being completed comprise inter alia:

(a) Development of artisanal fisheries, comprising improvement of fishing equipment and marketing infrastructure as well as introduction of new fishing techniques, including a credit programme for the supply of bigger canoes, outboard motors and smoking equipment;

(b) Extension of above project to include building of an ice plant at Brikama (completed) and workshop at Gunjur (completed);

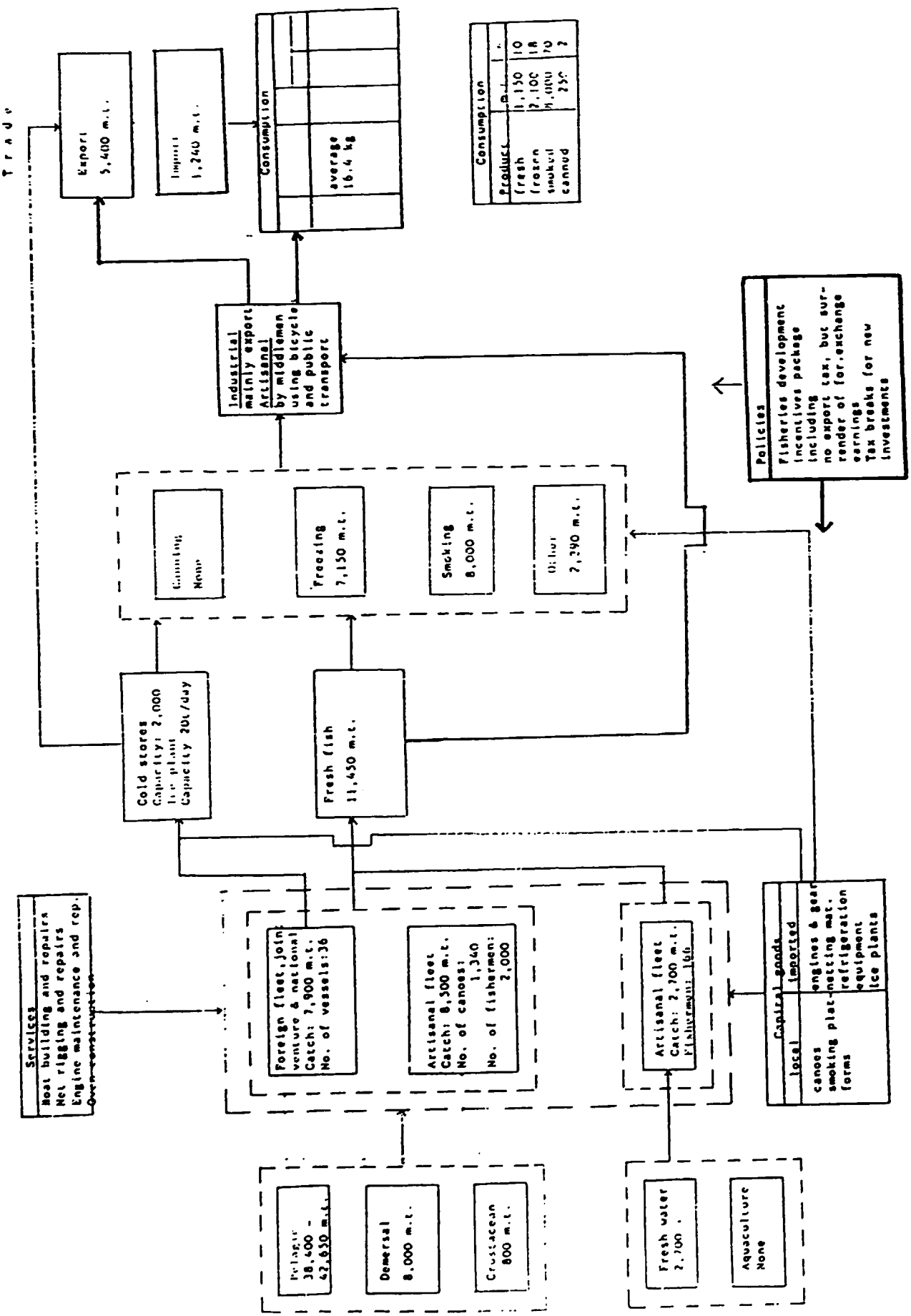
(c) Scientific programme to increase the knowledge about fishing stocks in the Gambian EEZ.

4.1.2 Resources

The Gambia has a 200 mile extended economic zone (EEZ) which covers an area of 3,855 square kilometers. It is about 30 miles wide between the northern and southern borders and the continental shelf does not extend beyond 75 km. Most of the marine resources lie within 50 km of the coast. A 12 mile zone is reserved for the artisanal fishery.

The Gambia is also unique in the sense that the River Gambia runs practically the whole length of the country, it covers some 2,000 km and even the most distant villages are not far from the aquatic environment. Thus, it is not difficult to get fish, even in fresh form, to most of the rural population. The River Gambia offers good fishing potential and, although no figures on catch potentials are available, it is estimated that river resources are underexploited.

Figure 4: BASE DIAGRAM FOR THE FIS IN THE GAMBIA



The maximum sustainable yield (MSY) is estimated at between 38,000 to 43,000 tons for pelagic species, at 8,000 tons for demersal species and at 800 tons for crustaceans.

Gambia has plans to establish and expand aquaculture as a means of increasing fish production without affecting the wild resources. It is intended to encourage tilapia farming to provide additional protein food fish. Oyster culture and shrimp farming are being investigated with a view to the export market for aquaculture produce.

4.1.3 Extraction

The fisheries industries in the Gambia comprise the artisanal fishery (including marine and inland), the industrial fishery (including national and foreign vessels) and aquaculture. The artisanal fishery comprises some 1,500 conoes (marine and inland) with about 35 per cent motorized operating from an estimated 200 landing sites along the coastline and the River Gambia.

It should be noted that a considerable number of Senegalese and Ghanaian fishermen fish within the Gambia's EEZ and some of them are integrated into the Gambian society. Furthermore beach seining takes place along the coast and in the estuary of the River Gambia.

In 1986, the artisanal fisheries produced approximately 11,200 tons of fish (2,700 tons from inland production). This accounted for about 60 per cent of the total catch in the Gambia's EEZ and for about 95 per cent of the total domestic production of fish. The total production from this fishery is consumed locally, except for the shrimp caught by artisanal fishermen along the River Gambia. About 80 per cent of the artisanal production is consumed in smoked or dried form.

The industrial fishery comprises the foreign fleet, specifically those vessels operating under the EEC agreement, the vessels fishing under the Senegalo-Gambia agreement on maritime fisheries of 1982 and the vessels operating under the joint venture agreement between Seagull Coldstores Limited of the Gambia and Monkaodze Fisheries of Ghana.

The industrial domestic fleet consists of two vessels. There has been some discussion on expanding this fleet but negotiations are still going on

between the Government of the Gambia and the World Bank concerning the privatization of the state-owned fishing company and its eventual restructuring and expansion.

There are two locally registered fishing companies that dominate the fishery in the Gambia. The total industrial catch (both national and foreign) was 7,900 tons in 1986. The domestic fleet accounted for only 70 per cent of this catch. Apart from the oyster culture project started in 1986, no other aquaculture operations exist in the Gambia. Proposals have been presented to establish a shrimp culture project, but this has not yet materialized.

There are no harbour facilities specifically for fishing vessels in the Gambia. The industrial vessels utilize quayside facilities available at the commercial port. There are also very few maintenance and repair facilities available for industrial vessels. The nearest facilities are based in Dakar, Senegal. The artisanal fishermen land on the open beaches, anchoring theri canoes adjacent to the beaches and sometimes beaching them. No landing or handling facilities exist except at the EEC artisanal fisheries project site at Gunjur.

4.1.4 Processing

Processing for local consumption is to a great extent limited to smoking. About 80 per cent of the fish produced in the artisanal fisheries is processed by hot smoking at the landing sites before distribution to marketing centres.

Industrial processing is limited to the operations of the industrial fleet, who concentrate on freezing. In addition to their own catches the industrial processing companies buy some shrimp from the artisanal fleet. The majority of the frozen fish is then exported.

4.1.5 Trade

Total exports of marine products in 1986/87 were 5782 mt, valued at 6,580,000 Dalasis. Although the shrimp resources are not considerable in the Gambia, the shrimp fishery seems to be attractive because of its potential to earn foreign exchange. While exports of crustaceans in 1986/87 accounted for just over 10 per cent in volume, in value they constituted more than 50 per cent of all exports. Apart from the National Partnership Enterprises that

export shrimp, Senegalese artisanal fishermen also exploit the shrimp resources in the Gambia and land their catches in Dakar for processing and re-export. The quantity or value of the shrimp exports from the Gambia is, therefore, not fully known. However, it can be estimated that approximately 1,000 tons of shrimp could have been exported in 1986.

There is also a growing export trade in sole or tonguefish which are found in reasonable quantities on the continental shelf. The Gambia also imports some seafood products, the bulk of these are stockfish, canned sardines, mackerels, tuna and salmon, and limited quantities of smoked Norwegian herring.

4.1.6 Distribution

Fish distribution is through an informal system of middlemen called "Banabanas" for the artisanal fisheries. These men use bicycles to distribute fresh fish from the landing sites to nearby villages. Smoked fish is usually transported in trucks that cover greater distances. The use of ice is not common in the artisanal fishery, except with those fishermen exploiting the shrimp resource. The ice plant which was built at Brikama during the first phase of the EEC artisanal fisheries development project has hardly been utilized. This ice plant has a capacity of five tons per day.

The industrial fishing companies have ice plants that can produce approximately 20 tons per day, freezers with a capacity of 100 tons per day and cold storage facilities of approximately 2,000 tons. These companies have been experiencing problems with repairs and maintenance to these facilities due to lack of spare parts and technical expertise. Only a relatively small volume of fish from the local industrial companies is consumed locally. It is believed that most of this fish is consumed in Banjul and nearby areas. There is no known network of cold stores in other parts of the country for the distribution and storage of frozen fish.

Eighty per cent of the locally consumed fish is in smoked or dried form and its quality is dependent on the preservation methods used in the artisanal sector. The quality of the finished product varies considerably and hygiene standards are poor. Moreover there is a considerable amount of spoilage, which is estimated at about 30 per cent, although no figures exist. Drying on open racks, without protection, also results in spoilage and insect infestation.

4.1.7 Employment

Surveys undertaken in the artisanal fisheries sector between 1983 and 1986 gave employment figures as shown in tables 2 and 3 below:

Table 2. Total number of fishermen involved in the Gambian artisanal fishery

Year	Total number of fishermen	Gambian	Foreign
1983	3,190	1,896	1,294
1984	3,206	1,870	1,336
1985	2,716	1,804	912
1986	2,017	1,201	816

Source: FAO, CECAF/TECH/86/78, December 1986

The above figures show a considerable decline in the number of fishermen in the artisanal sector between 1984 and 1986, however, in 1987 the number of master fishermen increased by 16,5 per cent to 1,555, bringing the total number of registered fishermen, both industrial and artisanal, to 3,626. Of this total 2,114 fishermen are Gambians and 1,512 foreigners.

4.1.8 Consumption

Fish consumption in the Gambia is reported to rank high in the list of West African countries. In 1986 the per capita fish supply was reported to be around 16 kg, a considerable increase over the per capita consumption of 13 kg reported for 1984, taking into account the increase in population. The market does not appear to be saturated, however, and with fish being a relatively low priced source of animal protein, per capita consumption could rise further provided the local supply can be increased.

On the industrial side there is lack of capital and technical expertise to develop the industrial fishery and foreign exchange policies slow down the importation of fishing inputs. The industrial fleet lacks maintenance and repair facilities.

4.1.9 Institutional Framework

The Fisheries Department with the Ministry of Water Resources is the main Government institution involved with the management of the fisheries resources. The department in its present form is not equipped to carry out its activities efficiently. There is a need for restructuring, training and provision of adequate facilities for it to function effectively. Presently its staff are deployed with the artisanal fishery development projects, the oyster culture project, statistical data collection, limited extension activities and administration. Research activities are practically non-existent, except for some activities organized at the regional level and under the auspices of the Senegambia Confederation.

4.2 Government Objectives

The Government has adopted a policy of developing the nation's artisanal fisheries sub-sector by encouraging Gambian nationals to engage in fishing. Government investments in Gunjur (Gambia's main coastal fishing community) is a reflection of such policy. Infrastructure facilities for fish collection and processing (smoking, drying), compartments for storing processed fish, fishing gears and equipment, a machine workshop, freshwater supply and an ice plant are in their various stages of completion. Construction of 35 kilometres of access roads to connect various fish landing sites to the main roads is ongoing. In line with this policy, a revolving loan fund was set up to enable Gambians to buy their own fishing gear and equipment.

In the meantime Gambia's Fisheries Department is facing a critical manpower shortage as a result of the World Bank's structural adjustment measures. Counterpart contribution from government is curtailed due to manpower cuts in government agencies. As a result, government response or follow-up to bilateral/multilaterial funded projects as well as coordination and management are not satisfactorily undertaken.

4.3 Constraints

Constraints	Proposed solution
Lack of ice	Construction of 50 ton per day ice plant
Lack of fish landing pier	Construction of fish landing pier near fish plants in Banjul
Lack of trained man power for fish plants	Technical assistance to train in refrigeration, quality control and marine engineering
Riverine communities need access to ice and markets	Provision of insulated ice/fish river transport boats
Fish offal not utilized	Training local women in the production of simple meal from waste fish offal

4.4 Strategies

Gambia fish industry strategies are largely determined by constraints in the natural and financial resources of the fishery sector. They are also tailored to fit in with the aid currently being provided by the EEC.

Protection of inshore fishery grounds by conventional means would cost several hundred thousand dollars in capital expenditure for patrol vessels and aircraft plus the support of a large company of MCS personnel. The recommended strategy of constructing a series of artificial reefs and obstacles to trawling costs very little and should be effective both in protecting grounds and in enhancing coastal fish stocks.

Assistance to the fish processing and export industries tackles the two most pressing constraints: lack of ice and landing facilities and lack of trained personnel. There would appear to be little alternative to the

construction of a loading pier and ice plant. For the training programme a longer more formal exercise would be preferable but time and the pressure of current industry industry needs do not permit. So an on-the-job programme of commercial training has been selected for fish plant staff and engineers.

For fish meal production the alternatives are clear. A proper reduction plant would be cost-prohibitive and the small volumes of fish waste would be inadequate for a full plant. The alternative strategy is therefore to produce meal on a small-scale basis using artisanal methods. Fish pellets may be manufactured in a similar way.

4.5 Budget (3 projects and feasibility study)

Personnel, experts and consultants	$ 20,000
U.N.V. officers	$144,880
National experts and administrative support	$ 33,280
Travel and d.s.a.	$ 42,000
Training	$ 10,000
Sub-contracts food for work	$ 28,000
Equipment	$146,000
Miscellaneous	$ 22,000
TOTAL	$446,160

5. INDICATIVE PROGRAMME FOR SIERRA LEONE

5.1 Description of the Fisheries Industrial System

Figure 5 is a base diagram of the FIS of Sierra Leone. A more detailed description of the components is given below.

5.1.1 Resources

The inland fishery comprising a system of rivers, lakes, estuaries and lagoons has considerable fishery potential, but no comprehensive plan has been prepared for its management and development.

The quantity of fish taken by the inland fishery is unknown, but there are some estimations that go between 1,000 and 10,000 metric tonnes. For this study, we consider a total catch of 5,000 from an estimated stock of 10,000 metric tonnes.

About 50 per cent of the fishermen exploiting the inland fishery resources are part-time or subsistence fishermen. It can be assumed that there are possibilities to expand the inland fishery and increase production.

Since there is actually no comprehensive programme for this fishery, it would be necessary to prepare one that will allow for a gradual expansion of this fishery, providing the services that would be required and putting in place an efficient monitoring system. Already, there is a project that is providing fishing inputs to inland fishermen at some locations. It would be worthwhile to use the experiences gained by this project in formulating a programme for inland fishery development.

The biomass for coastal pelagic species is of the order of 317,000 to 574,000 metric tonnes. Recent surveys (Ssentongo, 1980) put the maximum sustainable yield (MSY) at 100,000 - 150,000 tonnes for coastal pelagics.

The biomass for demersal species is at the level of 49,000 to 105,000 metric tonnes with an estimated sustainable yield of 30,000 tonnes.

Shrimp stock is quite enough to support a total annual catch between 2,000-3,000 metric tonnes without depleting the resources.

The Sierra Leonean waters also have significant stocks of tuna, mainly skipjack and yellowfin. Recent estimations have placed the stock of tuna in 14,000 metric tonnes. At present, tuna is exploited by the Soviet fleet.

Aquaculture seems to offer some potential, particularly in inland areas and some modest attempts have been made to establish fish farms. At present,

aquaculture or fish farming is only a very small part of the fisheries sector although it has been practised in Sierra Leone for close to two decades. It is limited to small-scale rural activities, that integrate fish farming with swamp rice cultivation by farmers in the northern, southern and eastern parts of the country. Between 1976 and 1986, the acreage of ponds cultivated increased from 100 square meters to 500 square meters. Average production is estimated at 2200 kg/hectare/year.

Based on data supplied by the Fisheries Department, it appears that there is already over exploitation of the fisheries resources. This is particularly evident in the case of the industrial fishery. Catch as a percentage of MSY is 130 per cent for pelagic species, 244 per cent for demersal species and 116 per cent for crustaceans.

The data for the artisanal and inland fisheries indicate that both are presently being under exploited. Pelagic species are exploited at 84 per cent of MSY, demersal species at 50 per cent and shrimps at 42 per cent, but since it is impossible to obtain accurate date from the numerous scattered landing sites, this may not necessarily be true. There are few data on aquaculture, so both the MSY and level of production are only rough guesses. It is clear, however, that the potential exists for increased aquaculture production.

5.1.2 Extraction

The fishery sector in Sierra Leone comprises two distinct segments: artisanal, including marine and inland canoes, and industrial; although there are obviously strong links between them.

a) Artisanal sector

In the artisanal fishery there are some 7,000 canoes, of which about 25 per cent are motorized (other sources estimate this proportion to be 10 per cent).

By law, the coastal zone within a 5 mile limit form the sea-shore is exclusively restricted to artisanal fishing. Industrial fishing or trawling is prohibited in order to protect the artisanal sector; thus recognizing the importance of the artisanal fishery and its role in the nation's fish supply.

In 1987, the artisanal fishery produced approximately 45,000 tonnes of fish about 70 per cent of the total national consumption. The coastal small pelagic fish constitutes the bulk of artisanal catch. Within the small pelagic, Sardinella and Ethmalosa (Herring and Bonga) make up to 63 per cent

of the total catch. The artisanal catch has been growing since 1981, and in 1983 had the highest figure. Virtually all production from this fishery is consumed locally 80 per cent in the smoked or dried form.

There have been several efforts in the recent past to make this sector operate with more efficiency and currently there are three major projects for artisanal fishery development under implementation, and a number of minor ones also. A number of societies or co-operatives have also been established in some of the major fishing areas for the purpose of enhancing the activities of the artisanal fishery.

b) Industrial sector

The industrial fleet consists of twenty fishing vessels operated under local registration by the Sierra Fishing Company plus foreign vessels flying the flags of 16 nations.

The vessels in the industrial fishing fleet range from about 88 to 2000 GRT and consist of trawlers, purse seiners, shrimpers, long liners and carrier-motherships.

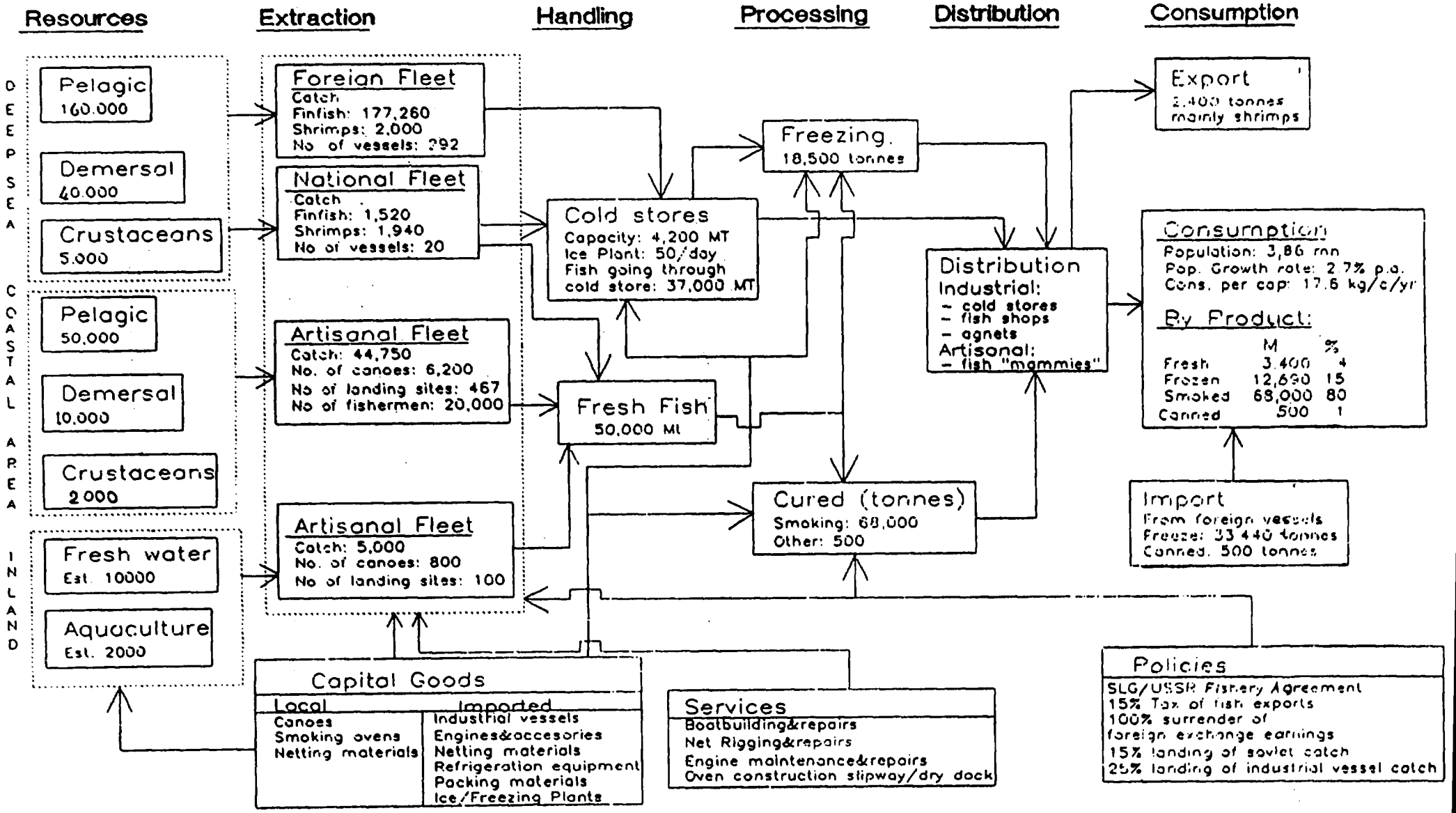
The foreign fleet operates under various forms of joint venture agreements with companies engaged in fisheries activities in Sierra Leone.

In 1987, a total of 200 foreign vessels were licensed to operate Sierra Leone's EEZ in fishing or engaged either in related activities such as carriers, factory ships and transport vessels. Sierra Leone vessels amounted to 10 per cent of the total industrial fleet.

From 1982 to 1987, the operations of the industrial fleet have expanded very rapidly. Under a new regulation, all industrial vessels (local and foreign) are required to land at least 25 per cent of the catch in the country. The total industrial catch was 162,500 tonnes of which about 32,500 tonnes were landed for domestic consumption, in the year 1987.

Dependency on the foreign fleet will not change until such a time that local fishing crew and expertise can be developed.

Figure 5: SIERRA LEONEAN FISHERIES INDUSTRIAL SYSTEM (1987)



5.1.3 Processing

The smoked fish industry in Sierra Leone is collectively a large and developing industry, salting and sun-drying are also used but to a lesser extent. Most of the operation is carried out at artisanal level and located among village fishing communities. It is made in a rudimentary way, and as consequence with a considerable loss in quality of the products. Some of the products processed by artisanal sector are: fresh-dried fish, hard-dried fish, salted fish and sun-dried fish.

However, it is noted that a high percentage of consumers who buy frozen fish, smoke approximately 50 per cent of it before cooking in various vegetable sauces. This is because the smoking process gives the fish a firm texture which does not disintegrate easily when subjected to high temperatures during the cooking process. Also, smoking gives it a flavour that is palatable to most consumers.

At the industrial level, processing is limited today to basic freezing. The Sierra Fishing Company and the Marine Development Company have established processing plants to handle and process shrimp for the European market. They export shrimp head-on and head-off, peeled or unpeeled but in each instance only in the frozen form. At the present time shrimp exports are a good business, due to high average catch rates. However, as mentioned above, the increasing number of shrimp trawlers is producing a reduction in catch.

There is only one enterprise operating in the private sector which is processing smoked fish. It is well organized and the quality of the product is good. However, the production capacity is small due to the limited facilities.

The above inidicates that the bulk of the fish distributed in the country is cured fish, mainly smoked-dried (with two different forms: fresh-dried and hard-dried). Even the frozen fish distributed in the country usually ends up being smoke-dried before final utilization due to handling and distribution problems.

5.1.4 Distribution

Most of the companies do not own cold storage facilities. They depend on immediate distribution of the fish that is supplied to them by their foreign partners. SFC has 2,500 tonnes cold storage capacity at its central plant and has plans to rehabilitate its network of 12 cold stores in the provincial towns. These plans may have already been implemented as of fall 1988.

Fish distribution is through an informal network of agents (for the industrial sector) and through a system of "fish mammies" or "middle persons" as they are otherwise termed to include the men involved in this activity. The "mammies" are women that do everything but go to sea and are often boat or gear owners themselves. They usually unload, sort, and inventory the catch upon its arrival. Also, they often do the first buying on the beach and serve of middlemen to other women who retail the fish.

SFC has a number of fish shops in Freetown that are restricted required to sell fish obtained from SFC only at ceiling prices set by SFC. These prices are set lower than the market clearing price.

This may result from SFC's important political role as partner to the Sierra Leone/Soviet fishing agreement and the need for it to demonstrate it social commitment to supplying fish for public consumption at low prices. The quantity of fish marketed in Freetown through this system is probably a significant part of the total supply and prices for other concerns would at times be influenced by SFC's pricing policy. However, since in general SFC's supply leaves a portion of market demand unsatisfied, there is considerable scope for the interplay of market forces in the non-SFC part of the market.

Prices in the artisanal sector are highly variable, depending on the season, landings and market accessibility. There could be considerable price variation in one day at one landing site. Most of the fish produced by the artisanal sector (about 70 per cent) is marketed in processed form, mainly smoked, while most of the fish produced by the industrial sector is marketed in frozen form. However, retailers may smoke some of this frozen fish before it is distributed to the final consumer.

5.1.5 Consumption

Although per capita consumption of fish has fallen in recent years, Sierra Leone still ranks among the highest fish consumers in West Africa with per capita consumption of 18.3 kg. in 1986 6 per cent below from the previous year. And it is believed that per capita fish availability was even lower in 1987, approximately 17.6 kg/cap. The main causes of reduction are decline in fish imports, stagnant fish production and a high population (growth rate 2.3 per cent per year). Moreover, the distribution of fish is highly skewed in favour of urban consumers and per capita consumption in the rural areas could be below 10 kg. (Fisheries Department Statistics).

However, with the price of meat, pork and other related products gradually getting out of reach to an increasing number of Sierra Leoneans, it is presumed that the demand for fish will increase. The distribution of SFC is limited to 10 towns with cold storage capacities ranging from 10 to 30 metric tons but it has the potential to distribute up to 50 metric tons of frozen fish daily up-country.

5.1.6 Trade

Shrimp continues to be the single most important fish export commodity, in value as well as in volume, 67 per cent of fish exports. However, the volume of shrimp exports has been steadily declining over the last few years. The reason for the decline is that shrimp catch has been decreasing in size and tonnage, but it is important also to note that an important portion of the exports apparently do not pass through official channels. Estimates from the Fisheries Division indicated that some 2,000 metric tonnes of shrimp are produced annually.

In 1987, the reported exports were only 946 metric tonnes from 2000 metric tonnes registered.

The EEC (France, UK, Holland, Belgium, Greece and West Germany) absorb more than three quarters of the fish exports (high value fish) while the African countries only absorb 11 per cent of the exports of the Sierra Leone. These are indications, however, that other African countries could be important markets for other kinds of fish. For instance, Nigeria and Côte d'Ivoire are the major fish importing countries in Africa. Further, there is an increasing trade, specially of cured fish to neighbouring countries such as Guinea and Liberia. These markets should be further explored.

5.1.7 Institutional Framework

The Fisheries Department within the Ministry of Agriculture, Natural Resources and Forestry is the main government institution involved in management of the fisheries resources. The department has the following sections: administrative, research, extension and development (including marine and inland), boat building, fishing and engineering. There are out-stations at all major fishing areas in the country. The department has a research vessel which was provided through a grant from the Government of Denmark (DANIDA) and eight small inshore vessels for training provided by the Government of Japan.

The department is responsible for the implementation of the three artisanal fishery development projects together with foreign donors. Recently, an industrial fishery monitoring unit was established within the department through technical assistance from FAO and a new Fisheries Management and Development Acto was passed into law in May 1988. In June 1987, all industrial fishing vessels were ordered to report to the port in Freetown for inspection and re-certification of their fishing licences. This process is now being carried out twice every year before licences are issued. Licences are issued for a six months period initially and renewable every six months.

The Institute of Marine Biology and Oceanography of Fourah Bay College of the University of Sierra Leone is engaged in fisheries research and works closely with the Fisheries Department. The Coast Guard carries out surveillance activities associated with the enforcement of fisheries regulations. A number of government institutions are involved with the fishery sector in terms of granting import/export licences for fishery inputs and for seafood products, registration of fishing vessels, etc.

The Fisheries Department has not been properly funded at a level necessary to enable it to carry out an effective fisheries programme. MCS activities have been carried out at a very low level. The RV Semaneh, having first been converted to a fishing vessel in the hope of recouping sailing expenses has now been unoperational for four years. Some of the smaller boats too are not operational. Its effectiveness in connection with its responsibilities in the management of three integrated artisanal fishing projects has been impaired because of low pay and missed perdays for Department employees assigned to the projects. Other activities seem also to have suffered.

5.2 Government Objectives

The government has become aware of the substantial contribution its fishery resources could make to social, economic and nutritional goals. The President recently expressed keen interest to develop coastal and offshore fisheries and requested UN assistance.

A production target of 175,000 tons of fish has been set for 1992. A major focus of the fishery development programme will be promoting increased fish catches by nationals. Measures will be taken to increase the amount available for local consumption.

The development objectives for fisheries are as follows:

1. increasing domestic production of fish and other aquatic resources to satisfy the local demand for protein requirements;
2. increasing foreign exchange earnings through the export of surplus fish and shellfish;
3. improving the efficiency of small scale fisheries.

Poor management of the fishery has been a continuing problem for the government but it has started to address the problem as the President has now declared offshore fisheries development to be priority area. In theory, foreign vessels should pay a substantial fee for a license to fish. A fee of $30,000 would yield some $4,500,000 in foreign currency each year from 150 vessels. But in practice, fleet owners and their governments negotiate for concessions and reduced rates on the promise of other benefits in trade or aid. The large Soviet fleet for instance, pays its royalities inkind wiht 15 per cent of their total catch. Also the government has no fishery protection fleet or surveillance aircraft and it can never be sure how many vessels and/or which types are prosecuting the fishery. There is no full time trained fishery inspection service, even if vessels and aircraft were available. So in practice very little is presently being obtained from offshore fishery licences.

5.3 Constraints

Constraints	Proposed solution
Lack of MCS service	Provision of surveillance aircraft and patrol vessels
Lack of fish terminal	Construction of fish pier and trans shipment terminal
Soft currency makes imports of nets and engines difficult	Fishing gear supplies through fish terminal chandlery services
Heavy demands on fuel wood for fish smoking	Improved smoking ovens and planting of fuel wood lot

Inshore fishermen lack protection from foreign trawler incursions	Construction of artificial reefs in inshore fishing grounds with trawling obstacles
No local fresh fish offshore fleet. No ice supply	Establishment of a large ice factory and boatyard to produce small offshore vessels
Waste fish offal not utilised	Establishment of an artisanal fish meal and fish feeds production unit

5.4 Strategies

For Sierra Leone's artisanal fisheries, the excellent FAO and GTZ projects have shown the way via integrated development strategies and the UNIDO FAO Sherbro project will adopt a similar approach. It will be combined with successful participatory activities pioneered by the ILO food for work roads project in the same region.

Protection of inshore fishing grounds will adopt a similar strategy of artificial reefs construction as in Gambia. This will relieve the proposed one-plane, one-vessel MCS service of the need to patrol the inshore grounds regularly.

But the major strategy in the Sierra Leone programme is the ambitious one of establishing an enterprise to provide the following facilities:

Monitoring, control and surveillance service and back-up management of fishery licenses, royalties and fines.
Transshipment facility and bunkering pier.
Ice plant for wet fish fleet.
Drydock, slipway and workshop for vessel repair.
Ship chandlery and spares store including fishery gear for sale to artisanal fishermen in local currency.
Boatyard and sawmill for production of fresh fish fleet vessels.
Management facility for fresh fish fleet.
Artisanal fish meal production unit.

Together these facilities would enable the Government to achieve its two main objectives for the industrial fishery, namely: foreign currency earnings from fishing licenses and tarriffs, and from exports; and increased food fish supplies for domestic consumers. They would also benefit existing national offshore fleets by providing repair and maintenance service facilities, spare parts and fishing equipment.

The strategy is to seek private funding and commercial management for the project. Government has no foreign currency reserves and is at present not acceptable to the IMF to qualify for World Bank assistance. Any external funding would therefore require the insurance of good professional management and financial control. The conditions of the assistance would be discussed at the FAO TCP supported meeting to be held in Freetown in March.

5.5 Budget

5.5.1 National projects

Personnel, experts and consultants (under sub-contracts)	
U.N.V. officers	$175,078
Local experts and administrative support	$ 46,600
Travel, d.s.a. and mission costs	$ 34,722
Sub-contracts	$200,000
Food for work	$ 22,000
Equipment	$239,000
Miscellaneous	$ 20,400
TOTAL	$737,800

5.5.2 Regional projects

Sierra Leone will also benefit from the regional projects including the Industrial Management Skills Project.

Consultants and experts	$ 48,000
Administrative support	$ 10,000
Travel and d.s.a.	$ 26,000
Sub-contracts	$ 57,000
Training	$ 9,000
Equipment	$ 22,000
Miscellaneous	$ 8,000
TOTAL	$180,000

6. INDICATIVE PROGRAMME FOR TOGO

6.1 Description of the Fisheries Industrial System

The base diagram of the FIS of Togo is shown in Figure 6. A description of the main components is given below.

6.1.1 Resources

The continental shelf off Togo's coastline (56 km) is relatively narrow. The seasonal upwelling (of cold waters) brings an increased supply of marine life, in particular pelagic species. However, neither the total resource nor its exact division into species are very well known.

The total biomass suitable for trawling has been estimated at 2,600 tons. The exploitable potential is evaluated at 800 tons per year of which 600 tons is of commercial quality. (Source: CECAF/ECAF SEMES 86/36, 1986)

6.1.2 Extraction

Fishing in Togo takes place both in the sea and in the complex system of lagoons formed by the lakes Togo and Boko. By any measure, artisan fishing is by far the most important fishing activity in Togo (see Table 1). This position has lately further strengthened with the gradual disappearance of Togolese industrial fishing vessels - today only one such vessel remains in operation.

Latest FAO statistics on total catch show for Togo a stabilization around 11,000 tons per year between 1982 and 1986.* At the same time, total catch in the Western Gulf of Guinea, where most of the Togolese fishing takes place, has increased by some 40 per cent. In other words, the other countries fishing in the same waters (mainly Ghana, Côte d'Ivoire, USSR and Benin) have significantly increased their efforts whereas the Togolese fishing activity has stagnated.

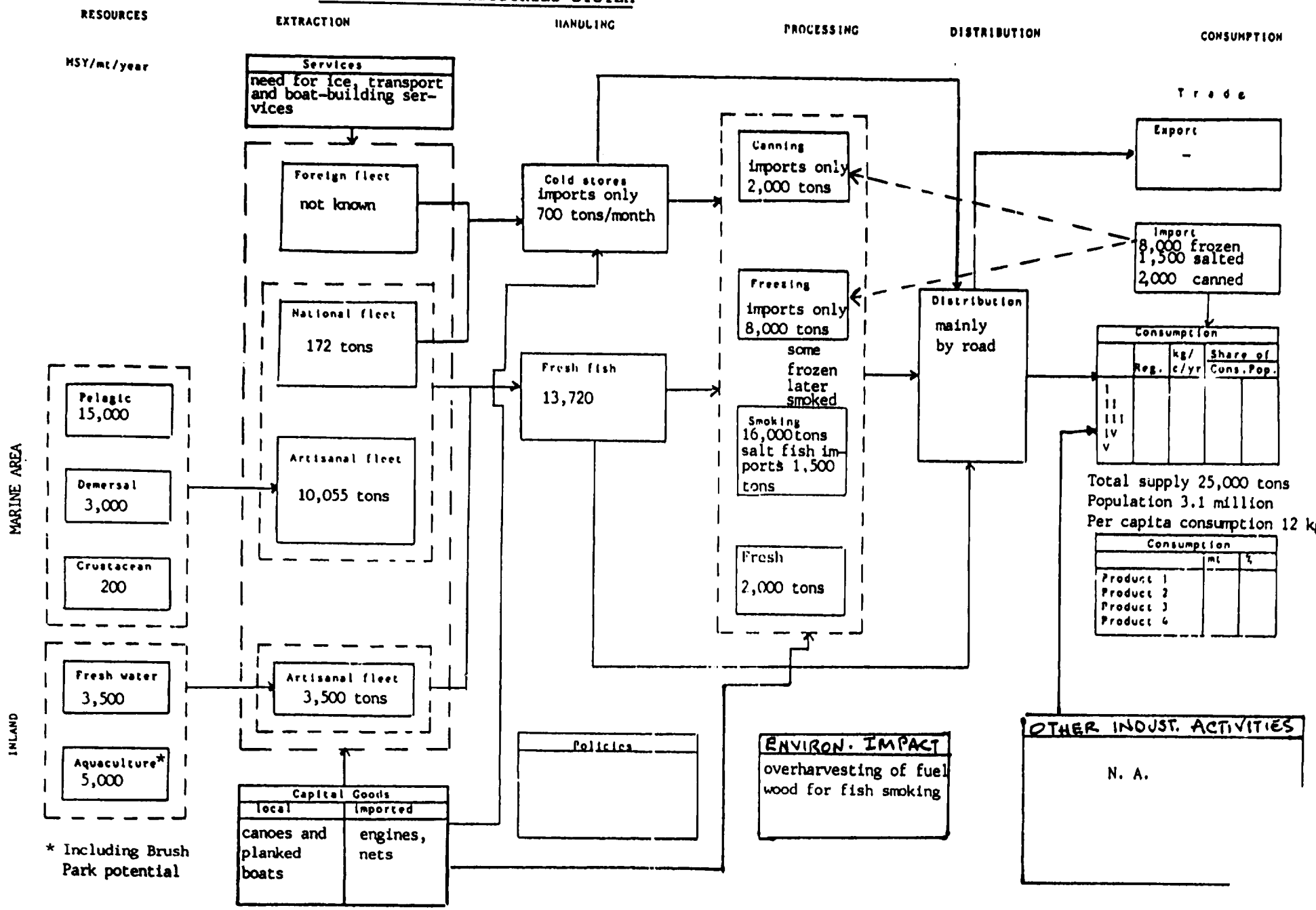
In general, however, it must be concluded that the potentials for increased pelagic or demersal fishing are small or nonexistent in Togolese waters. Deep sea fishing may present a potential. The production from fresh water fisheries is estimated at 2,500 to 3,500 tons per year.**

---

* CECAF Statistical Bulletin no.5: Nominal catches 1974-1986, FAO, Rome, 1988.

** Lachner and Partner, Consulting Company, Etude de la Pêche on Togo, for the Republic of Togo, 1984, Vol. II, p. 6-1.

Figure 6: TOGO FISHERY INDUSTRIES SYSTEM



6.1.3 Processing

According to a study by a German consulting company, approximately 10 per cent of the fresh or frozen fish gets consumed as such; 90 per cent is either smoked or dried. Moreover, 2.2 kg of fresh or frozen fish yields 1.0 kg of smoked or dried product.* No canning or other form of fishery product processing takes place in Togo. Thus, all processing of landed or imported fish can be said to be of artisan type.

6.1.4 Trade

Togo imports a major part of the fish it consumes. Of the fresh or frozen fish roughly one third (or 8,000 Mt) is now imported. In addition, some 7-10 per cent of all smoked, salted or dried products consumed are imported. All canned products, less than 1,000 Mt per year, are imported.

6.1.5 Distribution

Fresh water fish is either consumed fresh near where it is caught or sold to various markets throughout the country as fresh (!) or smoked. Fish from the river Oti is sold mainly at the market at Mango. Because of the distance and lack of salt and firewood for curing and smoking, the fish is generally in a sad (rotten) state when it arrives at the market. Vendors from Ghana, Burkina Faso and Benin buy small quantities of frozen fish, seldom smoked fish, from the cold stores and local markets in the north of Togo for retailing in their own countries.

The often poor conditions of the cold stores, the utilization of ordinary trucks for transportation, the partial thawing of frozen fish between landing and storage and/or during transportation, and frequent breakdowns of refrigeration equipment, trucks etc. all contribute to spoilage and a lowering of quality.

Lack of ice or the application of too little ice is a major factor in the deterioration of the quality of fresh fish. Improper handling also contributes to lower than necessary quality.

Although no direct figures exist for Togo, it has been estimated that as much as 40 per cent of the landed fish spoils before it reaches the final consumer. Perhaps a more realistic spoilage estimate would be 20 per cent.

** Lachner and Partner, 1984, Vol. II, p. 8-4.

6.1.6 Consumption

The consumption of fish and fish products amounts to some 14 kg per person per year, about twice as much as the per capita consumption of meat. This relation corresponds to the relative difference in prices per kilo. However, the consumption of fish has increased twice as far as that of meat despite a nearly 50 per cent faster increase in fish price than in meat prices.* Although the consumption of fish has not increased as fast as nominal incomes, it has increased much faster than real incomes (which may indeed have decreased).

Thus, from a nutritional point of view, there seems to be a case for increasing the consumption of fish products everywhere in Togo with the possible exception of the coastal area. Consumer preferences and/or relative prices also appear to increasingly favor protein intake in the form of fish rather than meat products.

6.1.7 Institutional Framework

Under the 5 year Development Plan (1985-90), more than half of total investments will be allocated for infrastructure improvement; 35 per cent for rural development; 5 per cent for industry and commerce.

Government policy in agriculture is to achieve self sufficiently in food production. Togo has succeeded in attaining self-sufficiency in cereals and vegetables but would like to attain the same for fish, meat and grains. In achieving the targets for the latter, integrated farming systems are being promoted.

Government would like to achieve the following for the fisheries sector:

(a) increase per caput fish consumption particularly in the interior areas;
(b) increase production and productivity of fishery resources while reducing dependence on imported fish;
(c) increase employment in the fisheries sector;
(d) encourage small business enterprises in fish processing; and
(e) improve transportation and marketing of fish to inland areas.

---

* A positive price elasticity must not be inferred from this; income effect and inflation probably account for this controversial result of increased consumption despite increased prices.

6.3 Constraints

Constraints	Proposed Solution
Modest resource	Encouragement of Acadja brush parks and artificial reefs
Lack of indigenous fleet	NGO construction of basic functional offshore vessels
Inland fisheries lack organisation and access to markets	Grouping of fishing villages in integrated project and development of community management systems

6.4 Strategies

Resource limitations and concern for the environment oblige the Government to adopt a cautious strategy for addressing fishery industry development. Large investments in facilities or fleets are not justifiable. Technologies selected for use will be relatively low cost and applicable to the small-scale sector.

Therefore in both marine and inland fisheries the strategy is to encourage the small-scale sector to expand and improve their operations. For the Togolese marine fishermen the project will provide a means of engaging in offshore fishing. This will be with functional craft which will be less costly to build and operate than the conventional imported steel trawlers which are not economically viable in Togo. Local boatbuilders will be trained to produce the craft which will result in local employment and industry in place of the import cost of foreign built steel craft.

For inland fishermen who are also peasant farmers and who are mostly at a subsistence level of existence, an integrated approach is used. This will raise productivity in their agro-industry work as well as fisheries, and it will do both a sound ecological lines to preserve the natural resource potential. This activity will be supported by a regional centre for primary industry development for fishery villages.

If the artificial reefs planned for Gambia and Sierra Leone are successful, similar installations will be considered for Togo.

6.5 Budget

6.5.1 National projects (2)

Personnel	
Experts and consultants	$ 18,000
U.N.V. officers	$ 34,830
Local experts and administrative support	$ 45,000
Travel and d.s.a.	$ 24,170
Sub-contracts (NGO)	$ 36,000
Training and food for work	$ 25,000
Equipment	$115,000
Miscellaneous	$ 9,000
TOTAL	$307,000

6.5.2 Sub-regional projects

Togo will benefit from two sub-regional projects, the primary industry centre and the boats and harbours project which is costed below.

Experts and consultants	$144,000
Travel and d.s.a.	$ 45,000
Training and meetings	$ 26,000
Equipment and materials	$ 30,000
Miscellaneous	$ 5,000
Agency overheads	$ 33,000
TOTAL	$283,000

7. UNIDO FAO FISHERY INDUSTRIES PROGRAMME WEST AFRICA SUB-REGIONAL SUPPORT PROGRAMME

7.1 Background

The UNIDO/FAO fishery industry sector programme of cooperation and development has incorporated an integrated approach. This began with global studies and typology analysing the patterns of industrial development in fisheries. The cooperation continued through the UNIDO Consultation on the Fisheries Industry in Gdansk in 1987 and progressed to field studies to develop indicative programmes. This has led in turn to the compilation of an integrated package of investment and technical assistance programmes for the target countries.

The region first selected as a focus for the programme approach was West Africa, a region rich in fisheries resources but facing enormous economic, environmental and development problems. Participating countries to date have been Guinea, Benin, Togo, Sierra Leone, Gambia and Ghana. Requests for the inclusion of other states have been received and missions may also be sent to Mauritania, Senegal and others in the region.

It was inevitable that the programme approach based on a global typology and analysis of constraints and enhancements would identify problems and tasks of a regional nature. This has been the case in West Africa where most of the coastal states face common problems related to fishery resources and inputs and fish industry development. These problems could be tackled on a country by country basis but this would multiply costs and result in considerable duplication of effort.

It is therefore deemed appropriate and cost-effective to address particular problems on a regional or sub-regional basis. Three groups of fishery industry problems and constraints are identified as regional in character. These are the focus of the sub-regional support programme from which all of the participating countries (6 at present) will benefit.

7.2 Justification

The three issues which affect all of the fishing states in the region are:

i Vessels and harbours for the marine fishing fleets.

ii Integrated development of the inland and rural fishing areas.

iii Management of fisheries and fish industry ventures.

The nature of the common problems in the three areas are detailed below together with the strategies to tackle them. Table 9 provides an overview of the links between the constraints and strategies and the specific projects in the national programmes and the regional support programmes.

7.2.1 Vessels and harbours

Most of West Africa now faces a closely linked dual problem related to fishing boats and harbours or landing places. The artisanal fleet of around 50,000 conoes which lands the bulk of the region's catch is made up of dugout canoes constructed from huge wawa trees. The large trees are almost depleted and a substitute method of construction will have to be found for new vessels. Replacement boats are required at a rate of over 2,500 a year. A start has been made to the development of replacement craft in Senegal where combination dugout/planked boats are being built with a log keel and planked sides.

Development of fully planked boats are not easy because of the lack of harbours. Most canoe fishermen operate from beaches many of which are exposed to heavy sea surf. Surf conditions can prevent boats from going to sea or landing and even during mild surf conditions, launching and landing can be dangerous. In such circumstances, planked boats are vulnerable to damage and to capsizing because of their reduced weight and lighter construction than dugout canoes. Thus the introduction of planked boats makes the need for sheltered harbours or landing sites more urgent.

There is a second consideration which underscores the need for harbours. The West African dugout canoe has reached its ultimate in size but the fishermen need even bigger vessels.

Dugouts of 18 or 20 metres in length are having planks added to the upper gunurales to increase their capacity for nets and fish. Many of the larger canoes are mechanised and carry ice to preserve fish catches. Some operate huge purse seines and even have echo-sounders fitted. The time seems right to introduce the fishermen to larger and more seaworthy vessels. However, it is simply not possible to operate a 20 metre planked boat off a beach, especially an exposed beach. It needs a sheltered harbour in which to anchor or tie up to a jetty.

Harbours are expensive installations. It may however be possible to provide floating breakwaters at some sites. UNIDO is currently negotiating with bilateral donors for commodity aid and floating breakwaters might be supplied under such a programme. This project would co-ordinate their delivery, location and use.

Table 9: HOW PROJECTS ARE LINKED TO CONSTRAINTS AND STRATEGIES

CONSTRAINTS AND STRATEGIES	Technical Assistance Projects: Benin: Sites and Services Project	Benin: Primary Industry Development	Togo: Offshore Fishing Craft	Togo: Primary Industry Development	Sierra Leone: Protection of Fishing Grounds	Sierra Leone: Industry Strategy Meeting	Sierra Leone: Primary Industry Development	Gambia: Fish Export Industry Assistance	Gambia: Protection of Fishing Grounds	Gambia: Fish Meal Production	Regional Projects: Training Centre for P.I. Development	Regional Projects: Boats and Harbours Project	Regional Projects: MST Tools and Organisation Systems	Regional Projects: Industrial Management Skills	Investment Projects: Sierra Leone Fish Terminal and Facilities	Investment Projects: Gambia Pier and Ice Plant
Fuelwood and forestry	*			*			*				*					
Protection of inshore fishing grounds		*			*				*		*					
Management of offshore fisheries					*	*		*	*					*	*	
Africanisation of offshore fisheries			*			*						*		*	*	
Construction of canoes and harbours	*		*				*					*				*
Industrial progress in rural fishing villages		*		*			*			*	*		*			
Organisational structures and management skills		*		*		*	*				*		*	*	*	*
Migratory fishermen issue			*				*				*	*	*			
Development of offshore sector fishery service and processing industries	*		*			*		*		*				*	*	*
Lack of local middle distance fresh fish fishing fleet			*			*		*				*			*	*
Management of soil, water and natural resources		*		*	*		*		*	*	*		*			
Effects of restructuring programmes	←															→

7.2.2 Integrated development of rural fishing areas

All over Africa, isolated fishing villages are stagnating and being by-passed for development. They lack proximity to markets and services and as a result have a subsistence economy. This breeds a survival mentality with a short-term attitude to production systems. As they have a varied economy embracing agriculture and fisheries, both suffer from environmentally destructive practices resulting from the short-term attitudes. Even when shown how harmful these are, the communities can do little to redress matters as they lack the resources either investment or working capital required to facilitate change. Conventional technical assistance projects can make only limited impact in such situations as they focus chiefly on technology change in specific areas. There is general agreement now amongst governments and aid agencies that an integrated approach is essential if depressed rural villages are to break out of their rut of stagnation and become flourishing, productive communities.

There is a growing amount of evidence that the integrated approach can be effective and successful. In Sierra Leone the FAO and GTZ integrated fishery projects have transformed previously stagnating villages into centres of rural fish industry with turnovers of several million dollars equivalent annually. This has been done largely by judicious and sensitive involvement of the local people in all project decisions and activities.

Farther south in Africa, the FAO Agrarian Training Project in Maputo has applied the integrated and participating approach to resource analysis and utilization to maximise production from particular communities. The approach has facilitated change and raised both incomes and protein levels in village diets.

The integrated participatory approach can have a substantial impact on the single most pressing environmental problem in rural Africa - deforestation. This is critical for fishing areas which consume double the average amounts of fuel wood. That is because in addition to domestic requirements, they consume one cubic metre of fuel wood to smoke one tone of fish. The 500,000 or 600,000 tons of fish smoked in West Africa is consuming over 500,000 m^3 of timber each year. By planting woodlots with fast growing species for fuel, rural communities can reduce the pressure on forest land ten-fold, and provide fuel wood for fish smoking at less expense in time and labour, and obtain employment or income in the process.

All these successful approaches to the development of primary industry in rural fishing areas need to be transferred and applied to specific locations. To accomplish that a regional centre is proposed where the technologies and organisational approaches can be demonstrated and people can be trained in their implementation.

/.2.3 Management and organisation

At every level in fisheries in West Africa there is a glaring need to develop and strengthen management skills and corporate behaviour or organisation. This is true in village development, in larger fish industry enterprises and in Government.

The need is now well recognized and both industry and Government personnel are appealing for assistance to improve their performance in this field.

There are two distinct requirements for transfer of FIS management skills in West Africa. The first is the development of appropriate didactic material for the West African fisheries sector, and the second is the implementation of a training programme. Two projects will dc this one for the large scale and one for the small scale sector.

In order to prepare the background material it is necessary to conduct a training needs assessment exercise, and to adapt both general and specialist management training material to the existing conditions and situations. While management schemes and computer models can be very helpful, they are less than useful if they are not user friendly and directly applicable to the prevailing situation. This work must be done beforehand.

Likewise the actual training programmes are better conducted "on the job" so that the principles imported can be applied to real tasks or problems and the results assessed in the light of their effect on the commercial operations. This avoids the danger of the training being just theoretical as can happern in a college setting. It also proves to the trainees how management skills can directly improve their performance and boost a company's profitability.

The two management projects will result in proven, tested material which can continue to be used to upgrade the corporate performance of fish industry and fisheries management personnel in West Africa for many years to come. The material will be prepared in French and English and the final versions will be reproduced and retained by UNIDO for release to future industry training programmes for fisheries in the region.

7.3 Description of the projects

The four sub-regional projects are described briefly below. The full project documents are attached.

7.3.1 Regional centre for Primary Industry Development in rural fishing areas

This project will support the national Primary Industry Projects which are to be located in Benin, Togo, Ghana, Sierra Leone and other countries in the region. As most of the national projects will have very small teams in charge, the centre will provide back-up expertise, information and training. It will be the "brain" and "memory" of the national projects, developing the strategies and compiling data and experience on successful technologies and techniques. In order to keep costs low and to prevent the centre from becoming an "ivory tower" it will be located in a rual fishing area and the buildings will be of village type construction. It will be surrounded with examples of fish ponds, rural fishing equipment, fuel woodlots, fish smoking ovens, solar driers, and examples of combined agro-fishery activities. But it will also utilise local examples of successful participatory projects for training and experience. Nationals from P.I.D. projects will thus be exposed to genuine participatory efforts to aquire experience, skill and sensitivity in this area. The programme costs are $870,000 for three years.

Any extension of the project would cost about half that sum (for 3 more years) but whether an extension should come about is a question that should await the project results and their effect on the participating states. It may well be that significant changes would be called for and so no ongoing funding is envisaged at this point in time. This creates no problem for disposal of facilities as they are of low-cost rural type construction.

7.3.2 Support to harbour construction and boat building for the marine fishing industries of West Africa

This is a 3 year project to provide expertise, co-ordination, information exchange and technical support to national efforts in fishing harbour development and development of planked vessels to replace dugout canoes. It will cost $283,000 and will provide specialist consultants, finance technical meetings and help with design work on the subject. The project will also be responsible for co-ordinating commodity aid which may supply floating breakwaters for exposed beach landing places.

7.3.3 Development of management structures, organisational systems and training materials for the Fishery Industry Sector, West Africa

This project will develop the didactic material to be used in the artisanal and rural fisheries development projects. In doing so it will make use of approaches and methodologies which are proving to be successful in rural and fisheries development in Africa. The models and materials will therefore be practical, realistic and geared towards the industrial development of small-scale fishing communities. Some of the models envisaged such as those used in GTZ and FAO fisheries projects are not yet well docomented and not available in didactic form. As a result, new projects have to go through a long learning phase to aquire a similar degree of success. This project will record, analyse, demonstrate and teach the principles involved in each successful approach to rural fish industry development. The materials produced will be made available in French and English through UNIDO to all West African projects dealing with small-scale fish industries. The project is for 12 months and costs $125,000.

7.3.4 Industrial management skills for the fishery industry sector

This project will develop the materials for the industrial or large-scale sector in fisheries West Africa, and will conduct pilot training programmes in large fishery enterprises in the region. The emphasis will be on commercial management, corporate skills, plant and personnel management, all related to the problems and constraints of the fishery industry sector. In almost no large fishery enterprises in the region has such training been provided. Staff members usually rise to positions of responsibility as a result of their performance and qualifications in specific technical areas such as engineering, processing, book keeping or marketing. In higher positions of responsibility they must make decisions on deploying personnel, organising work, planning future expansion and trouble shooting for inefficiencies. For more of these tasks are they properly equipped. And the staff often perform well as individuals but poorly as a corporate body. World Bank authorities have often identified weaknesses in such areas as being a major cause of industrial failure in the developing world. The project which will last for two years and cost $180,000 will provide the necessary training and will produce material, exercises and methodologies for use in FIS management training throughout West Africa.

7.4 Inputs

Personnel	
Experts	$218,000
Consultants	$234,000
U.N. Volunteers	$ 24,000
National and regional experts	$ 54,000
Administrative support	$ 25,000
Travel and d.s.a.	$157,000
Sub-contracts	$105,000
Training	$205,000
Equipment	$130,000
Premises	$165,000
Publications	$ 39,000
Miscellaneous	$ 44,000
Agency overheads	($160,000)
TOTAL	$1,400,000

0007a

DRAFT
PROJECT DOCUMENT

Country: BENIN

Title: Fishing Industry Sites and Services

Number

Duration 3 years

Sector Agriculture and Natural Resources

Sub-Sector Fisheries

Financing

Host Country Implementing Agency

UNDP $ 148,000

Executing Agency UNIDO or FAO

Estimated Starting Date

Government Inputs 9,800,000 CFA in kind

Brief Description

Facilities would be provided adjacent to Cotonou harbour for the domestic fishing industry. These would provide work-places for over 350 persons, mainly women, and would enable the prosecution of fish-related business with a gross turnover of 500 million CFA or more. The facilities would include provision for 50 or more fish smoking units, an engine repair and servicing workshop, a boat carpentry and smithery shop, and a workshop for refrigeration and construction of ice and fish insulated boxes. The units would be rented to local traders and the proceeds used to maintain facilities and services, as well as to repay borrowing. The project would provide training to the technicians and processors using the facilities.

PART A Context

The artisanal fishing fleet of Benin is now largely concentrated at Cotonou where the vessels have the advantage of an all-weather harbour, a ready market for fish, and the possibility of purchasing fuel, fishing gear and spare parts. At present there are just under 300 mechanised canoes using the port and landing some 5,000 tons of fish a year. This produce is worth over $ 3 million in landed value, and over $ 5 million in processed value.

As there is insufficient room within Cotonou port for fisheries services, the fish smokers and tradesmen have had to move to waste land some distance away and had to operate in very difficult circumstances. The situation is a constraint to efficiency and expansion of the industry and is preventing improvements to the quality of the processed fish. There is general agreement by fishermen, processors and government fishery officers that service facilities are urgently needed to prevent the continued stifling of the industry.

PART B Project Justification

1 Problem to be Addressed; the present situation.

The 288 mechanised canoes in Benin's coastal fishery now use the port of Cotonou as their year-round base as they can enter and leave it regardless of beach surf conditions, and in Cotonou they can always purchase fuel, fishing gear and spare parts. At first the fumeuses and vessel service personnel were permitted to operate within the port, close to the fishing vessels. However the area soon became congested and the port authorities decided to move out all except bona fide fishermen for whom they provided a pier and lock up facilities for storing gear.

As a result, fish smoking now takes place in rather unhygeinic conditions in any corner of waste ground the fumeuses can find. Since they have no guarantee that they will be permitted to stay any length of time in the new locations, the women are reluctant to spend any money erecting proper smoking ovens or sanitary facilities. This results in generally poorer quality of smoked fish, and sub-standard hygeine for fish processing.

Another problem for the fishermen is the distance they have to travel to obtain fuel, gear and services. Unlike the merchant ships and industrial trawlers which can obtain fuel oil, water and repair services in port, the fishing canoes have no on-site sources of provisions. Fishermen have to walk to town and hand carry back with them, their fuel and gear. Drinking water can sometimes be purchased from vendors near the harbour.

The situation is far from satisfactory for an industry which employs over 3,000 persons and produces 5,000 tons of fish worth $ 3 million, landed value and $ 5 million processed value.

2 Expected end of project situation

Close to the harbour a large sanitary service facility would be established, containing at least 50 units equipped with modern chorkor fish smoking ovens and with access to fresh water, drainage, and waste disposal. Workshops serving the fishing fleet, and equipped with all essential tools and equipment, would be included in the area. These would have trained personnel able to service and repair marine engines, planked vessels, refrigeration equipment and insulated fish /ice boxes. Rental payments would total over 600,000 CFA a year, more than enough to maintain the facility and utilities.

In addition, a mobile fuel and water service will bring fuel and water to the fishing harbour for direct sale to the fishermen. The fishermen will be able to have their vessels serviced quickly and efficiently, saving them turn around time and reducind excessive and time consuming labour.

Fish production by the Cotonou based fleet should increase, but more markedly there would be significant improvements in the quality of fish marketed, resulting in reduced losses, longer shelf life, greater protein content and increased earnings for fish workers.

3. Target Beneficiaries

Three distinct target groups will benefit from the project. The first is the fishermen of Cotonou, at present 2,300 in number. The second group is composed of the women fish smokers or fumeuses who process most of the catch. There are about 500 such women, plus another 500 or more vendors who depend entirely upon the fish trade for a livelihood. The women fish merchants play an important and prominant role in the industry. Many of them finance fish catching operations and often help fishermen to purchase their first vessel. Surprisingly these enterprising and industrious women have seldom benefited from an aid project. Most fisheries projects have concentrated on the capture sector, or on more general marketing or quality control studies.

The third target group is the consuming public, in this case the 200,000 or more persons who purchase the fish caught by the Cotonou artisanal fleet. They would benefit in having improved quality fish, both smoked and fresh, due to the use of modern ovens, sanitary premises, insulated ice boxes for fresh fish, and better maintained refrigerated storage.

4 Project Strategy and Institutional Arrangements

The project will work with the Fisheries Department, Ministry of Agriculture, Benin, in close liaison with the port and civic authorities. The project team will report directly to the FAO or UNDP Resident Representative. Technical guidance will be provided by the IDAF regional project or the FAO model fisheries project Benin. One of the APO officers working with the regional or model project may be seconded to act as team leader or co-ordinator.

5 Reasons for assistance fron UNDP/UNIDO/FAO

The Government of Benin is currently struggling with a financial and monetary crisis and is initiating a restructuring exercise as part of an agreement with the IMF. In view of this the Government is not in a position to tackle the port fisheries problems itself, and apart from the supply of counterpart staff and provision of land, will not be able to contribute much financially to the project. The support of UNDP is therefore both timely and appropriate.

6 Special considerations

The FAO IDAF project which is based in Cotonou has considerable experience and knowledge of the technologies involved in fish smoking and servicing the artisanal fishing industry. The FAO model project which is due to terminate at the end of 1989 has trained many marine mechanics and fish smokers.
There should therefore be no problem in obtaining local technicians and instructors to work in the project. There are also a number of APO's and Volunteers who have been associated with the FAO projects who might be able to assist.

7 Co-ordination arrangements

The project imprest will be handled by the Representative of UNDP, UNIDO, or FAO. Expenditures will be agreed upon with the Team Leader and the Fisheries Department in accordance with the terms of the project document. The Representative, the Team Leader, the Director of Fisheries, and the IDAF Manager, or their designated officers will meet regularly to review progress and to
co-ordinate activities.

8 Counterpart support capacity

The Fisheries Department should allocate a full time counterpart to the project, plus as necessary, officers familiar with the technologies involved and the language of the target groups. A number of such officers, both male and female have been working with the FAO model project.

PART C DEVELOPMENT OBJECTIVE

The main development objective is to facilitate the efficient operation and future expansion of the artisanal fishing industry based in Cotonou. This involves the technical servicing and maintenance of the artisanal fishing fleet, and the processing and marketing of their catch.

PART D IMMEDIATE OBJECTIVES, OUTPUTS AND ACTIVITIES

1. Immediate Objective 1

The establishment of a fish processing and technical services complex close to the Cotonou port fishing harbour.

1.1 Output 1

Acquisition and development of an appropriate site, and construction of fish smoking units and marine workshops.

Activities for output 1	To be completed by	Responsible staff
1.1.1 Site aquisition	month 3	project committee
1.1.2 Design work	month 5	technical staff
1.1.3 Buy materials	month 6	team leader
1.1.4 Construction	month 7 - 12	employees
1.1.5 Allocate units	month 13 - 15	team leader

1.2 Output 2

Fifty fish smoking unit operators and their employees identified and trained. Three workshop managers and their employees identified and trained. Operator of fuel and water delivery service identified and trained.

Activities for output 2	To be completed by	Responsible staff
1.2.1 Meetings with industry personnel to explain project.	month 3 - 9	All project staff
1.2.2 Selection of applicants	month 9 - 12	project committee
1.2.3 Allocate units	month 13 - 15	team leader
1.2.4 Training operators	month 16 - 30	team leader

1.3 Output 3

Management team of fishing industry service area appointed and trained.

Activities for output 3	To be completed by	Responsible staff
1.3.1 Determine management structure with authorities	month 6 - 12	team leader
1.3.2 Select staff	month 12 - 18	leader and staff
1.3.3 Train staff	month 18 - 30	team leader
1.3.4 Hand over management responsibility	month 31 - 35	team leader

PART E UTS

a. Government Inputs

National staff

Counterpart Team Leader	36 m months
Fish Processing Officers	72 m months
Marine Mechanic Officer	36 m months
Total	144 m months

Other National Inputs

Release of a one hectare site for lease by the fumeuses and technicians.

Value of site $ 40,000

or 1,200,000 CFA

b. UNDP/UNIDO/FAO Inputs

International staff

Team Leader (APO or UNV)	36 m months

National staff

Fish Smoking Instructress	24 m months
Refrigeration Instructor	12 m months
Marine Mechanic Instructor	12 m months
Boat Repair Instructor	12 m months
Site Construction Foreman	12 m months

Other personnel

Site labourers 30 x 6	180 m months

Training Conducted on site

Equipment and Supplies

Instructors tools and materials	$ 9.000
Construction materials	56,000

Instructors are required in the second year, construction materials and labour required in the first year.

PART F RISKS

There are two possible risks, both rather small in view of the interest expressed by the government and the fisherfolk.

The first risk concerns aquisition of a suitable site near the harbour. There are some suitable pieces of waste foreshore land on the upper part of the beach. Negotiation for a suitable site must be a priority of the project from day one.

The second risk concerns identification of suitable bona fide traders to lease the fish smoking units and workshops. There will be considerable interest but selection must be careful so that only bona fide traders are allocated units. Rentals must be clearly agreed with all in advance.

PART G PRIOR OBLIGATIONS AND PREREQUISITES

a. Prior Obligations

The Project Document will be signed by UNDP, and UNDP assistance to the project will be provided only if the prior obligations stipulated above have been met to UNDP s satisfaction.

b. Prerequisites

The Project Document will be signed by UNDP, and UNDP assistance to the project will be provided, subject to UNDP receiving satisfaction that the prerequisites listed above have been fulfilled, or are likely to be fulfilled. When anticipated fulfillment of one or more prerequisites fails to materialize, UNDP may, at its descretion, either suspend or terminate its assistance.

PART H PROJECT REVIEWS, REPORTI ? AND EVALUATION

a. The project will be subject to tripartite review (joint review by representatives of the government, executing agency and UNDP) at least once every 12 months, the first such meeting to be held within the first 12 months of the start of full implementation. The national project co-ordinator and/or senior project officer of the United Nations executing agency shall prepare and submit to the UNDP Field Performance Evaluation Report (FPER). Additional FPERs may be requested, if necessary, during the project.

b. A project terminal report will be prepared for consideration at the terminal tripartite review meeting. It shall be prepared in draft sufficiently in advance to allow review and technical clearance by the executing agency at least four months prior to the terminal tripartite review.

c. The project shall be subject to evaluation months after the start of full implementation. The organisation, terms of reference and timing will be decided after consultation between the parties involved in the project.

PART I LEGAL CONTEXT

This Project Document shall be the instrument referred to as such in Article I of the Standard Basic Assistance Agreement between the Government of Benin and the United Nations Development Programme, signed by the Parties on .

The Host Country Implementing Agency shall, for the purpose of the Standard Basic Assistance Agreement, refer to the Government Co-operation Agency described in that Agreement.

The following types of revisions may be made to this project document with the signature of the UNDP resident representative only, provided he or she is assured that the other signatories of the project document have no objections to the proposed changes:

a. Revisions in, or addition of, any of the annexes of the project document with the exception of the Standard Legal Text for non-SBAA countries which may not be altered and the agreement to which is a pre-condition for UNDP assistance). (This language is to be added in those cases where the host country has not signed the SBAA);

b. Revisions which do not involve significant changes in the immediate objectives, outputs or activities of a project, but are caused by the rearrangement of inputs agreed to or by cost increases due to inflation; and

c. Mandatory annual revisions which rephase the delivery of agreed project inputs or increased expert or other costs due to inflation or take into account agency expenditure flexibility.

PART J BUDGETS

	Total m/m	Total $	Year 1 m/m	Year 1 $	Year 2 m/m	Year 2 $	Year 3 m/m	Year 3 $
International Experts								
1101 Team Leader APO or UNV	36	36000	12	12000	12	12000	12	12000
National Experts								
1111 Fish Smoking Instr 1	24	7200			12	3600	12	3600
1112 Fish Smoking Instr 2	24	7200			12	3600	12	3600
1113 Refrigeration Instr	12	3600			12	3600		
1114 Mar Mechanic Instr	12	3600			12	3600		
1115 Boat Repair Instr	12	3600			12	3600		
1116 Construction Foreman	12	6000	8	4000	4	2000		
1199 Total		67200		16000		32000		19200
Admin & Support Personnel		5400		1800		1800		1800
Construction Labour		18000		18000				
1401 UN Volunteers (see 11.01)								
1500 Project Travel		3000		1000		1000		1000
1999 Tot Personnel Component		93600		36800		34800		22000
Equipment								
4100 Expendable Equipment*		39000		34000		3000		2000
4200 Non-Expendable		9000		3000		5000		1000
Miscellaneous		6400		2000		2000		2400
9999 Total		148,000		75,800		44,800		27,400

* A further 18,000 may be required as credit advance for the construction of kilns and accessories to be repaid by the individual proprietors. If an APO may be seconded from the IDAF then the revolving loan fund could come from the savings on line 11.01

0008a

DRAFT PROJECT DOCUMENT

COUNTRY BENIN

TITLE Primary Industry Development in Beninois Lagoon Fishing Villages

NUMBER DURATION 3 years

PROJECT SITE Lac Nokoue and Oueme river Valley Benin

SECTOR Agriculture and natural resources UNDP FINANCING $158,000

SUB-SECTOR Fisheries and Rural Industries

HOST COUNTRY IMPLEMENTING AGENCY Ministry of Agriculture and Natural Resources

EXECUTING AGENCY UNIDO

ESTIMATED STARTING DATE

GOVERNMENT INPUTS $7,900,000 cfa (in kind)

BRIEF DESCRIPTION The inland fishing villages of Lac Nokoue and the river basins are the major source of fish protein for the country. The fishermen are skilled in the use of acadja brush parks which are a traditional form of fish husbandry and harvesting. There is little prospects for increasing fish production much beyond present levels. Further economic progress and development will come from diversification of activities and introduction of technologies to improve value added and marketing. The project is to do this working on a broad front with strong environmental and organisational emphasis. Full people's participation is essential at all stages and its encouragemant will be a priority from the beginning. The project is one of a series of similar integrated

efforts in the region which will be supported by a regional training centre. There will be around 5 to 10 target villages with a population of some 8,000 to 12,000 persons.

PART A CONTEXT

The lagoon fisheries of Benin are a unique national source of fish production with both harvesting methods and fishing communities exceptionally well adapted to the environment. The acadja brush parks which fishermen have developed to a high degree, result in a remarkably high yield per hectare. The fishermen live in lake villages whose houses are mostly erected on poles supporting them above the water. Transport canoes carry people and produce through a network of channels between the swampy grasslands surrounding the lagoon.

Until recent years the lagoon was fresh water but it is now saline since the sea channel was opened. Taking advantage of this situation the fishermen requested help to replant mangrove trees and were assisted in this by a GTZ project. The first year's planting was destroyed by record high water levels but the second attempt has been more successful. The project is also helping to plant acadja brush to provide material for the fish enclosures.

Diversification of income sources and production has begun with water transport, animal husbandry, retail stores and tourist services. The people are industrious and enterprising and thus open to other possibilities for development of small scale industry.

Owing to the unique character of the villages, any development activity must be environmentally benign and related to the natural resources and way of life of the lagoon people. But with thoughtful guidance and support the area could develop on similar lines to the "floating markets" of Thailand or the Laguna de Bay communities of the Philippines.

PART B PROJECT JUSTIFICATION

1. Problem to be addressed: the present situation

The Lac Nokoue fisheries of Benin are among the most productive and important in the country, producing some ten or twenty thousand tons of vital fish protein for the nation. Most national and international experts believe that the present production is close to the optimum sustainable yield. Further production increases could only come from improvements to the already remarkably efficient acadja system.

Future economic development must therefore come from activities in non fishery or fishery related areas rather than fishing per

se. Together with FAO, UNIDO has been developing an integrated approach to develop a base for small scale industry in rural fishing communities. This is the strategy of this project, to tackle development on a broad front using appropriate technologies and managerial concepts adapted to the local natural and human resources.

2. Expected end of project situation

At the close of the 3 year project the target villages of Lac Nokoue and Oueme river basin will have a basis for industrial development affording remunerative employment for the growing numbers of village youths who will not be able to become fishermen because there are no remaining areas in the lagoon where new acadja brush parks may be built.

The new sources of income will be in the fields of processing, water transport, tourism, rural crafts, rural energy systems construction and agro-industry or horticulture. They will be environmentally benign with strong emphasis on fuel saving and the reduction of excessive human labour. Organisation and management will have featured strongly in the project and as a result each village will have its own community manager and its production and industry organisation structures.

3. Target beneficiaries

A group of villages in the Lac Nokoue and nearby Oueme river area will be selected as the project target. Depending on size they will total from 5 to 10 villages with a combined population of some 8,000 to 10,000 persons.

Under the kind of integrated project envisaged, the whole community should benefit from the project and this would include women and youths as well as adult males. To achieve this it is absolutely essential that the project team lives in one of the target villages.

4. Project strategy and institutional arrangements

The project imprest will be held by the UNIDO office in Cotonou. All project staff will be based in the main target village. A tripartite committee consisting of U.N. agency officials, government officers from the ministry and project staff will meet when required to settle any major or unforeseen issues. The committee will be chaired by the UNIDO representative in Cotonou.

Technical backstopping will be provided from the regional centre for industrial development of rural fishing villages which will be run by UNIDO in close consultation with FAO, UNDP and bilateral organisations in the region involved in similar

development programme. The regional centre will provide training for both project staff and community managers. The training will focus on people's participation, resource assessment and utilization, organisation and management of primary industries, economic and industrial progress.

Within the target communities, the project team will work with village authorities and power structures which will have been identified at an early stage. Every activity and plan will be fully discussed with the people's representatives and no activity will be started without their approval and pledged cooperation.

5. Reasons for Assistance from UNDP/UNIDO

The kind of industrial progress promoted by the project would not take place without strong outside support as the communities lack capital and management structures or know-how. The present U.N. emphasis on environmental problems, on eliminating rural poverty, on assisting womenfolk and rural youths and on integrated approaches to development all accord with the objectives, strategies and benefits of the project.

6. Special considerations

The approach taken in this proposal is based on several successful models now in use in Africa and Asia in U.N. government and bilateral development efforts. These include the People's Participation model, Shenge & Tombo, Sierra Leone FAO & GTZ; Economic analysis and monitoring of industrial production systems, Latin America & Africa UNIDO; Networking of production of smallholders and training of community managers, Negros, Philippines government; Resource assessment and use planning for rural communities, Maputo, Mozambique, FAC. The models are described in attached papers and will be developed for training purposes at the regional centre.

7. Co-ordination arrangements

It is important that closer and regular liaison be maintained between the project staff and the communities and between the project and the provincial offices, UNIDO/UNDP Cotonou, and central government offices in Cotonou. The tripartite committee will provide guidelines to maintain this liaison at an early meeting.

8. Counterpart support capacity

The Government should provide counterpart officers as designated for the duration of the project. Officers with the expertise in these areas already exist. If as a result of restructuring in accordance with the IMF agreement, the government is unable to provide all of the counterparts requested, the project will consider hiring former technical officers as local staff.

PART C DEVELOPMENT OBJECTIVE

The main objective is to lay the foundation for diversified small scale industrial activities in the target villages and by establishing the first generation of these to create a surplus for investment which through organisation, optimum resource use and technological innovation will lay the base for primary industry and further growth. This is to be accomplished while tackling serious environmental issues including forestry/fuelwood, soil and water conservation, and sanitation.

PART D IMMEDIATE OBJECTIVES OUTPUTS AND ACTIVITIES

1. Immediate Objective 1

The establishment of people's participation structures in the target villages, the assessment of natural and human resources and the planning of development activities

1.1 Output 1 A communication and authority network throughout the target communities, fully representative of the people and able to assess and critique proposals on behalf of the people.

Activities for output 1	To be completed by month	Responsible Staff
1.1.1 Assessment of village authorities	1	Project team plus local social experts
1.1.2 Discussion with village power groups	2	Team leader & government officer
1.1.3 Formation and recognition of community representative groups or committees	3	Tripartite Committee
1.1.4 First discussions on project plans	4	Team leader, government officer & p.p.groups

1.2 Output 2 Resource assessment and analysis of the area. *

Activities for output 2	To be completed by month	Responsible Staff
1.2.1 Study of existing material on the area	1	Team plus local experts
1.2.2 Compilation of data on soil,water,climate vegetation	2	Team plus local experts
1.2.3 Assessment of present & potential production of fish,agro-products and forestry	3	Team plus local experts
1.2.4 Assessment of human skills and labour including men, women and rural youths	2 - 3	Team plus local experts
1.2.5 Production improvement plan with input requirements	4	Project team
1.2.6 Plan submitted to communities	5	Project team

*note: All these activities would be backstopped by the Regional centre

1.3 Output 3 Development Activities plan with work and tool inputs.

Activities for output 3	To be completed by month	Responsible Staff
1.3.1 Community representative agreement to and/or modification of production plan	6	Project team and people
1.3.2 Translation of production plan into preparatory work activities	7	Project team
1.3.3 Agreement with villagers on who will undertake preparatory work and on amounts of food for work to be allocated	8	Project team and people
1.3.4 Preparation of tools list and identification of work sites	8	Project team

2 Immediate Objective 2

Execution of development plan and activities including training, organisation and technological innovation.

2.1 Output 1 Organised communities in agreement with and working on development activities and producing changed work patterns to yield better harvests, more value added and substituting environmental enhancement for environmental degradation.

Activities for output 1	To be completed by month	Responsible Staff
2.1.1 Purchase of project initial supply of tools and small vehicles	1	UNIDO rep and team leader
2.1.2 Construction of village housing for project staff	1 - 3	Team leader, UNIDO rep, Govt. officer, Community leaders
2.1.3 Purchase of tools for village work	7 and on	Team leader & Unido rep.
2.1.4 Ordering of food for work commodities and storage	7 and on	Team leader & UNIDO rep.
2.1.5 Execution of work activities	9 onwards	Villagers and project team
2.1.6 Initiation of improved production systems	12 onwards	Villagers and project team

2.2 Output 2 Simple industrialisation of processing and transport to reduce labour and increase value added:this seen in processing tools and facilities, improved products and economical village owned transport to market.

Activities for Output 2	To be completed by month	Responsible Staff
2.2.1 Identification of labour consuming practices and mechanisation possibilities	3 - 9	Project team and local experts
2.2.2 Introduction of tools and machines and training in their use	10 onwards	Project team
2.2.3 Networking of production for joint marketing	12 onwards	Project team and villagers
2.2.4 Establishment of simple transport facilities, owned and operated by members of the communities	15 - 24	Project team and villagers

2.3 Output 3 Trained community Managers and ongoing development promotion and monitoring of progress

Activities for Output 3	To be completed by month	Responsible Staff
2.3.1 Selection of suitable village candidates for training as managers	3 - 9	Team leader and villagers
2.3.2 Training of selected community managers	12 - 24	Project and Regional centre
2.3.3 Application of management and monitoring systems	12 onwards	Team leader
2.3.4 Installation of community managers with agreed terms of reference for their work and arrangements for their support	24	Team leader and villagers

2.4 Output 4 Project evaluation and recommendations for follow up activities

Activities for output 4	To be completed by month	Responsible Staff
2.4.1 Assessment of production and income increases and degree of industrial progress	30 - 34	Team leader
2.4.2 Meeting with all village authorities to discuss progress and future plans	34	Villagers, project team and Govt. officers
2.4.3 Tripartite review of project	35	UNDP/UNIDO, Govt., leaders and managers
2.4.4 Final report	36	Team leader/ UNIDO

PART E (a) GOVERNMENT INPUTS

National staff

Counterpart team leader	36 man months
Conterpart field officers	108 man months
Allocation of site in target village for project station	1,200,000 cfa
Total value in kind	8,400,000 cfa

Other national inputs

Target villagers inputs

People's Participation committees and village authority supervisors (8x4x3)	96 man months
Labour for project activities given on food for work basis. Additional value of labour 200x6x5,000	6,000,000 cfa
Other inputs, materials and services	1,500,000 cfa
Total value in kind	9,900,000 cfa

(b) UNDP/UNIDO INPUTS

Project staff

Team leader (volunteer)		36 man months
Associate professional officer		36 man months
National expert		36 man months
Vehicles	Motorcycle, mini tractor, trailer	$23,000
	Boat and bycycles	$11,000
Nets, tools, equipment, hardware and seed		
Food for work items (rice and protein)		$ 9,000
Village type staff housing and store		$19,000
Travel expenses and miscellaneous items		$19,000
Total value for U.N. inputs		$148,000

PART F RISKS

The sucess of this ambitious project (one of a series of similar projects in the region) depends on the degree of people's enthusiastic participation; the accurate assessment of resource potential and identification of production systems and technologies; and the development of organisational and managerial skills within the community.

To minimise the risk of failure in each of these fields of activity, the project will use proven successful models and approaches presently in use in Africa by U.N. and bilateral agencies. They are described more fully elsewhere and will be the focus of the regional centre for training and support of primary industrial development in rural fishing villages in West Africa.

A degree a motivation and commitment as well as imaginative response is required of the project team. This has been achieved in similar projects in the region especially where, as in this project, the team lives in the village with the target community.

It should be borne in mind that the risks of not undertaking the project are much greater than any risk of failure to reach goals. At present de-forestation, soil erosion, destructive agricultural practices and water waste or poilution are aggravating the environmental problems to such a degree that they will be much more formidable if action is delayed by some years. Also the poverty trap that the people find themselves in is resulting in poor health, lack of education and general discouragement reflected in migration of youth to urban centres. These negative influences will continue to make matters worse if no remedial action is taken.

PART G PRIOR OBLIGATIONS AND PREREQUISITES

a. Prior obligations

The Project document will be signed by UNDP, and UNDP assistance to the project will be provided only if the prior obligations stipulated above have been met to UNDP's satisfaction.

b. Prerequisites

The Project Document will be signed by UNDP, and UNDP assistance to the project will be provided, subject to UNDP receiving satisfaction that the prerequisites listed above have been fulfilled, or are likely to be fulfilled. When anticipated fulfillment of one or more prerequisites fails to materialise, UNDP may, at its descretion, either suspend or terminate its assistance.

PART H PROJECT REVIEWS, REPORTING AND EVALUATION

a. The project will be subject to tripartite review (joint review by representatives of the government, executing agency and UNDP) at least once every 12 months, the first such meeting to be held within the first 12 months of the start of full implementation. The national project co-ordinator and/or senior project officer of the United Nations executing agency shall prepare and submit to the UNDP Field Performance Evaluation Report (FPER). Additional FPER's may be requested, if necessary, during the project.

b. A project terminal report will be prepared for consideration at the terminal tripartite review meeting. It shall be prepared in draft sufficiently in advance to allow review and technical clearance by the executing agency at least four months prior to the terminal tripartite review.

c. The project shall be subject to evaluation months after the start of full implementation. The organisation, terms of reference and timing will be decided after consultation between the parties involved in the project.

PART I LEGAL CONTEXT

This Project Document shall be the instrument refferred to as such in Article 1 of the Standard Basic Assistance between the Government of and the United Nations Development Programme, signed by the Parties on The Host Country Implementing Agency shall, for the purpose of the Standard Basic Assistance Agreement, refer to the Government Co-operation Agency described in that Agreement.

The following types of revisions may be made to this project document with the signature of the UNDP resident representative only, provided he or she is assured that the other signatories of the project document have no objections to the proposed changes:

a. Revision in, or additiion of, any of the annexes of the project document (with the exception of the Standard Legal Text for non-SBAA countries which may not be altered and the agreement to which is a precondition for UNDP assistance.) (This language is to be added where the host country has not signed the SBAA);

b. Revisions which do not involve significant changes in the immedite objectives, outputs or activities of a project, but are caused by the rearrangement of inputs agreed to or by cost increases due to inflation; and

c. Mandatory annual revisions which rephase the delivery of agreed project inputs or increased expert or other costs due to inflation or take into account agency expenditure flexibility.

PART J BUDGETS

	Total m/m	$	Year 1 m/m/	$	Year 2 m/m	$	Year 3 m/m	$
International Experts (expert support will come from the regional centre)								
Administrative support 3,500 personnel 1399	36	10,000	12	3,200	12	3,300	12	
U.N. Volunteers Team leader 1401	36	42,834	12	14,278	12	14,278	12	14,278
Project travel and UNIDO mission costs 1600		18,166		5,000		5,000		8,166
National experts Village industry officer 1701 5,000	36	15,000	12	5,000	12	5,000	12	
Total personnel component 19-99		86,000		27,478		27,578		30,944
Equipment								
Expendable equipment 41-00		10,000		8,000		1,000		1,000
Non expendable equipment 42-00		24,000		21,000		2,000		1,000
Premises 43-00		19,000		17,000		1,000		1,000
Total equipment component 49-99		53,000		46,000		4,000		3,000
Miscellaneous								
Sundries and food for work 51-00		19,000		2,000		14,000		3,000
Project Total 99 99		158,000		76,610		46,610		34,780

0015a

DRAFT PROJECT DOCUMENT

THE GAMBIA

TITLE Production of animal feed from fish waste

NUMBER DURATION 3 years

PROJECT SITE Banjul and coastal villages Gambia

UNDP finance $110,000

SECTOR Agriculture and natural resources

SUB-SECTOR Fisheries

HOST COUNTRY IMPLEMENTING AGENCY Dept. of Fisheries

EXECUTING AGENCY FAO or UNIDO

ESTIMATED STARTING DATE

GOVERNMENT INPUTS 120,000 dalasis in kind

BRIEF DESCRIPTION Gambia's fish industry produces 19,000 tons of fish a year, which in processing yields over 2,000 tons of offal most of which is thrown away at present. If converted to meal this waste offal could produce hundreds of tons of valuable animal feed, creating income earning possibilities for women and village youth in the process.

The project will establish village level production units for animal feed and fish pellets and will train local people in the production of quality meal. It will also establish local markets for the produce. This will stimulate on going business worth several hundred thousand dollars a year in the fishing communities.

PART A CONTEXT

Fish meal and fish pellet produce

Gambia's chicken and cattle farms are in constant need for protein meal to enhance the animal diet. The country has no fish meal production to meet this need although many tons of fish offal and shrimp heads are dumped by plants in Banjul. Likewise the fish and shrimp culture industry will soon require protein feeds if it is to profit from high value species.

Often attempts to establish a fish meal industry fails largely because it is based on large plant technology which is energy expensive and which requires a constant supply of large quantities of raw material to be economic. While there are fair volumes of fish offals produced in fishing centres they are not sufficient to supply a conventional reduction plant. Also both electricity and diesel fuel are in short supply or expensive.

It is proposed to produce fish meal and feed pellets by a labour intensive and energy cheap method. Fish offal would be collected at designated sites where it would first be chopped to bits and pieces then passed slowly through solar driers/cookers then ground in hand operated mincing machines. During rainy periods the material would be steam cooked over conventional fires. The finer powders would be mixed with rice bran, leaves and other agro-waste to form suitable feed pellets.

PART B PROJECT JUSTIFICATION

1. Problem to be addressed : the present situation

At least 2,000 tons of potentially valuable fish offal is dumped each year when fish is cleaned and processed in the industrial and artisanal sectors of the fishing industry. This waste could be turned into meal for animal feed which is urgntly needed by Gambia's livestock and chicken farmers.

Before that could be achieved, two problems need to be addressed. Firstly, some simple artisanal methods of meal production need to be demonstrated and explained to local people. Secondly the collection of material for processing and of meal for marketing needs to be organised.

Without the above two elements, the fisherfolk of Gambia are losing out on potential income of $100,000 to $300,000 a year and the livestock industry is having to pay that much more for imported meal. Also the new and growing fish farming industry has tc import feed pellets which could also be made locally.

2. Expected end of project situation

Artisanal type fish meal units utilising solar driers, oil drum cookers and hand mincers will be established in Banjul and at key fish landing places along the coast. These will be owned and operated by local people (mainly women) who will be trained in meal production.

Altogether, these artisanal units will be processing over a thousand tons of fish waste and producing several hundred tons of meal for animal feed, generating well over $100,000 in income.

The livestock and chicken farmers of Gambia will be able to reduce their expenditure on expensive imported feeds by using local meal and it will be available to both small and large scale farmers.

In addition to meal production there will be one or more units producing fish feed pellets for aquaculture enterprises, utilising meal powder, leaves and other vegetable or animal additives. This will save the infant fish culture industry the expense of importing feed pellets.

3. Target beneficiaries

The main target beneficiaries are the fishing village womenfolk who will be able to earn cash from meal production. It is hoped that some 400 women will be able to earn on an average about $500 each to supplement their other income.

The second target group will be the consumers of meal and pellets, namely the livestock and fish farms of Gambia who should enjoy reduced feed costs and whose animals will benefit from protein food.

4. Project strategy and institutional arrangements

The project UNV will work closely with fish processing groups in the villages and in Banjul. He will liaise constantly with the Fisheries Department and will come under the direction of the UNIDO or FAO Representative who will handle the project imprest.

5. Reasons for assistance from UNDP/UNIDO/FAO

Transfer of appropriate technology and organisation of supplies and markets are tasks that the U.N. Agencies are well able to undertake. Following successful demonstrations and training, plus the opening up of local markets for the meal, there should be no lack of persons wishing to pursue the business in their villages. At the end of the project the local operators should be able to continue on their own.

6. Special considerations

It is important that the technologies introduced are simple and

low-cost and that the UNV officer is fully conversant with them at a village level.

7. Coordination arrangements

The UNV and his or her counterpart will report directly to the UNIDO or FAO Representative and the Director of Fisheries. No further coordination is necessary except with fisherfolk and processors who produce fish waste.

8. Counterpart support capacity

The Government should provide a project counterpart, preferably trained in fish handling and possibly a female officer as most of the meal producers and trainees will be female.

PART C DEVELOPMENT OBJECTIVES

The main development objective is the establishment of a national small scale industry for production of animal feed from fish waste.

PART D IMMEDIATE OBJECTIVES OUTPUTS AND ACTIVITIES

1 Immediate objective 1

Establishment of demonstration units for meal production.

1.1 Output 1 Two demonstration units for meal production, one in Banjul and one in a fishing village

Activities for output 1	To be completed by month	Responsible staff
1.1.1 Order of half truck and tools	1	UNIDO/FAO rep
1.1.2 Local purchase of drums grinders and drier materials	2	UNV and Agency rep
1.1.3 Assembly of solar driers	3	UNV and helpers
1.1.4 First trials	4	UNV and helpers

1.2 Output 2 Local persons trained in meal production

Activities for output 2	To be completed by month	Responsible staff
1.2.1 Selection of trainees	3 - 5	UNV and counterpart
1.2.2 Training undwer supervision	5 - 7	UNV
1.2.3 Semi commercial operation	8 -12	UNV and trainees

2. Immediate objective 2
Organisation of raw material supplies and fish meal markets

2.1 Output 1 Agreement with processors on supply of offal

Activities for output 1	To be completed by month	Responsible staff
2.1.1 Meetings with processors	4 - 5	UNV and counterpart
2.1.2 Assessment of volumes and fluctuations	4 - 6	UNV
2.1.3 Agreement on charges	5 - 7	UNV and workers
2.1.4 Meetings with meal purchasers	4 - 6	UNV and counterpart
2.1.5 Supply of sample meal	7	UNV
2.1.6 Agreement on prices and collection/delivery	8	UNV and workers

2.2 Output 2 Organised groups of producers

Activities for output 2	To be completed by month	Responsible staff
2.2.1 Establishment of production units	12-24	UNV and counterpart
2.2.2 Assessment of production volumes	12-16	UNV
2.2.3 Network of production formarketing	16-24	UNV and producers

3 Immediate objective 3

Development of fish pellet production

3.1 Output 1 One fully functional fish pellet manufacturing unit

Activities for output 1	To be completed by month	Responsible staff
3.1.1 Discussions with fish farm operators	7 - 11	UNV and counterpart
3.1.2 Determination of pellet composition	8 - 12	UNV counterpart & fish farmers
3.1.3 Trial production	13 - 15	UNV
3.1.4 Test of Trial pellets	16 - 18	Fish farmers
3.1.5 Semi commercial production	19 - 24	UNV and trainees
3.1.6 Operation of unit by local artisans	24 - 36	Trained processors

PART E INPUTS

(a) Government Inputs

National Staff		
Counterpart officer (fish handling and processing)		36 man months
Use of government facilities & expertise	(value)	60,000 dalasis
Total value in kind		120,000dalasis
Other national inputs		
Labour supplied at subsidised rates by local trainee workers (12 x 24 months) additional value of labour		87,000 dalasis
Fish offal supplied free or at subsidised rates		43,000 dalasis
Total value in kind		130,000 dalasis

(b) UNDP/UNIDO FAO Inputs

International staff	
UNV fish meal instructor	36 man months
National staff	
Fish handling officer	36 man months
Other personnel	
Initial labour supply	$ 3,000
Training conducted on site	
Equipment	
Half truck vehicle, solar driers, oil drum cookers, mincers and tools	$19,000
Supplies	
Fish offal, wood fuel, packing material, etc.	$14,000
Total value of UNDP inputs	$109,000

PART F RISKS

The risks inherent in this project are minimal as only artisanal level technologies are used and the produce has a ready market. Fluctuations in the supply of raw material will affect the activity but as the workers will view it as a part time supplemental activity, there should be little difficulty. The project will also have a good environmental effect removing the danger of rotting offal and keeping the fish villages clean.

PART G PRIOR OBLIGATIONS AND PREREQUISITES

a. Prior obligations

The Project document will be signed by UNDP, and UNDP assistance to the project will be provided only if the prior obligations stipulated above have been met to UNDP's satisfaction.

b. Prerequisites

The Project Document will be signed by UNDP, and UNDP assistance to the project will be provided, subject to UNDP receiving satisfaction that the prerequisites listed above have been fulfilled, or are likely to be fulfilled. When anticipated fulfillment of one or more prerequisites fails to materialise, UNDP may, at its descretion, either suspend or terminate its assistance.

PART H PROJECT REVIEWS, REPORTING AND EVALUATION

a. The project will be subject to tripartite review (joint review by representatives of the government, executing agency and UNDP) at least once every 12 months, the first such meeting to be held within the first 12 months of the start of full implementation. The national project co-ordinator and/or senior project officer of the United Nations executing agency shall prepare and submit to the UNDP Field Performance Evaluation Report (FPER). Additional FPER's may be requested, if necessary, during the project.

b. A project terminal report will be prepared for consideration at the terminal tripartite review meeting. It shall be prepared in draft sufficiently in advance to allow review and technical clearance by the executing agency at least four months prior to the terminal tripartite review.

c. The project shall be subject to evaluation months after the start of full implementation. The organisation, terms of reference and timing will be decided after consultation between the parties involved in the project.

PART I LEGAL CONTEXT

This Project Document shall be the instrument refferred to as such in Article 1 of the Standard Basic Assistance between the Government of and the United Nations Development Programme, signed by the Parties on

The Host Country Implementing Agency shall, for the purpose of the Standard Basic Assistance Agreement, refer to the Government Co-operation Agency described in that Agreement.

The following types of revisions may be made to this project document with the signature of the UNDP resident representative only, provided he or she is assured that the other signatories of the project document have no objections to the proposed changes:

a. Revision in, or additiion of, any of the annexes of the project document (with the exception of the Standard Legal Text for non-SBAA countries which may not be altered and the agreement to which is a precondition for UNDP assistance.) (This language is to be added where the host country has not signed the SBAA);

b. Revisions which do not involve significant changes in the immedite objectives, outputs or activities of a project, but are caused by the rearrangement of inputs agreed to or by cost increases due to inflation; and

c. Mandatory annual revisions which rephase the delivery of agreed project inputs or increased expert or other costs due to inflation or take into account agency expenditure flexibility.

PART J BUDGETS

	TOTAL m/m	TOTAL $	YEAR 1 m/m	YEAR 1 $	YEAR 2 m/m	YEAR 2 $	YEAR 3 m/m	YEAR 3 $
International staff								
UN volunteers								
Fish meal instructor 1401	36	42,000	12	14,000	12	14,000	12	14,000
Project travel 1500		11,000		3,000		3,000		5,000
National experts 1701								
Fish handling officer	36	18,000	12	6,000	12	6,000	12	6.000
Total personnel component 19-99		71,000		23,000		23,000		25,000
Equipment								
Expendable 4100 including fish material		14,000		6,000		4,000		4,000
Non expendable 4200 including half truck		19,000		16,000		3,000		
Total equipment component 4999		33,000		22,000		7,000		4,000
Miscellaneous								
Sundries 5100 including local labour and reporting		6,000		2,000		1,000		3,000
Project total 99-99		$110,000		$47,000		$31,000		$32,000

0013a

DRAFT PROJECT DOCUMENT

THE GAMBIA

TITLE Technical assistance to export fishing industry

NUMBER **DURATION** 2 years

PROJECT SITE Banjul Gambia **UNDP finance** $143,000

SECTOR Agriculture and natural resources

SUB-SECTOR Fisheries

HOST COUNTRY IMPLEMENTING AGENCY Fisheries Department

EXECUTING AGENCY FAO

ESTIMATED STARTING DATE

GOVERNMENT INPUTS 210,000 dalasis

BRIEF DESCRIPTION Gambia's export fish industry is currently constrained through lack of ice, landing facilities, skilled labour and quality control regimes. Landing facilities and ice plant are to be provided through an investment project. This project is to provide training technical assistance to the fish plants and fishing fleets. The training will concentrate on refrigeration, quality control and marine engineering for middle level technical staff of fish plants and fishing boats.

PART A CONTEXT

Gambia currently exports from 5,000 to 7,000 tons of fish annually, mainly shrimp and sole. The value of these exports is

now several million dollars and the industry is growing though facing a number of constraints. There is a pressing need for a fish pier and landing facility and for a large ice plant. These are to be supplied under an investment project being promoted by UNIDO. The second major constraint is the areas of refrigeration, quality control, vessel technology and general plant operation. Most fish plants have one good engineer but almost no qualified support staff.

The fish plants also need to introduce management systems for quality control and to train all their employees in basic hygeine, plant cleanliness and fish handling.

The provision of such training and technical support should reduce inefficiencies, improve the volume and quality of production, increase the competence and earnings of fish workers, and boost national fish exports.

PART B PROJECT JUSTIFICATION

1. Problems to be addressed ; the present situation

The fish plants in Banjul, Gambia, which represent the industrial sector of the national fishery process and export 4,000 to 7,000 tons of frozen fish a year, and 400 to 600 tons of frozen shrimp. There is also some salt and smoke curing of fish for export.

A recent U.N. mission reported that the industrial fish companies are experiencing problems with repair and maintenance to their facilities due to lack of technical expertise and spare parts. There have also been quality control problems due to bad handling,thawing and refreezing of fish, all resulting in poor quality products and lower prices.

The fish plant managers have approached the Government and through Government, UNDP and FAO for assistance in training staff and introducing better quality control and maintenance systems.

At present most fish plant workers have no professional training and only the chief plant engineer is qualified. As a result the chief engineers have more work than they can cope with and haveno time or opportunity to train plant staff.

2. Expected end of project situation

The fish export industry of Gambia wil be functioning with greater efficiency and will be producing better quality shipments and greater volumes of produce, increasing the total annual value of fish exports by over a million dollars a year.

The workforce of the processing plants will have been trained in refrigeration and machinery maintenance, quality control and

plant hygeine. The vessel crews will also have been trained in fish handling, in insulation and use of ice, and in maintenance of vessel engines and equipment. This will result for the workforce in better earnings and improved job prospects.

A system of plant management, cleanliness and equipment maintenance will have been introduced to each factory and all staff trained in the procedures. This will add to the control of quality and the market reputation of Gambian fish produce, and will serve to improve and maintain prices.

3. Target beneficiaries

The immediate target group is the industrial fishery workforce in Gambia, both plant and vessel based, some 400 persons.

A secondary target group are young school leavers wishing to work in the fish industry. The project will provide training and its longer term effects will increase employment opportunities in the industry for young people.

The country as a whole will also benefit as foreign exchange earnings from the fish industry increase by some millions of dollars.

4. Project strategy and institutional arrangements

The project team will establish a small training workshop either in the Department of Fisheries, or at a suitable location provided by the fish plants near the harbour. A committee composed of the FAO Representative, the Director of Fisheries and the fish plant Managers will agree on the schedule for training courses and on the times the team will spend in the respective plants, providing technical assistance.

The project imprest will be operated by the FAO Representative who will also order tools and equipment as requested by the team and approved by the counterpart team leader.

5 Reasons for UNDP/FAO Assistance

The project is in response to a long standing request by the industry and the fisheries department for technical assistance in these areas. As FAO has long experience and in-depth expertise on fish processing and quality control, it would be the logical vehicle for assistance.

6. Special Considerations

It would be helpful if the project team came from a tropical country with similar fisheries. A team of english speaking fisheries technicians/instructors may be recruited from UNV applicants in Indonesia, Thailand or similar tropical country with a well established marine fish export industry.

7. Co-ordination arrangements

A working committee composed of team leader, counterpart team leader and fish plant representative will handle most of the work schedules and arrangements. A tripartite committee consisting of the FAO representative, the director of fisheries and plant managerswill meet occasionally to consider majo decisions or amendments to the programme.

8. Counterpart support capacity

The government will supply a counterpart team leader and provide office support for the team as required. Government fishery officers will assist with training courses as and when required subject to the exigencies of the service.

PART C DEVELOPMENT OBJECTIVE

The project development objective is the efficient operation of the Gambian fish export industry and the maximisation of fish export earnings and of employment opportunities within the industry.

PART D IMMEDIATE OBJECTIVES, OUTPUTS AND ACTIVITIES

1. Immediate objectives 1

Technical assistance to the fish processing plants of Gambia.

1.1. Output 1 Repair and maintenance survey of plants and vessels

Activities for output 1	To be completed by month	Responsible staff
1.1.1 Plant and vessel inspection	1 - 3	Project team

1.1.2 Meetings with plant managers	1 - 3	Project team
1.1.3 Summary report on needs	4	Project team
1.1.4 Ordering of materials	4	FAO Representative
1.1.5 In plant work and advice	5 onwards	Project team

2. Immediate objective 2

Training of plant staff and vessel crews

2.1 Output 1 Establishment of project workshop and training programme

Activities for output 1	To be completed by month	Responsible staff
2.1.1 ordering of tools	2	Team leader and FAO rep.
2.1.2 Allocation of premises	3	Government or fish plants
2.1.3 Fitting out of premises	5	Project team
2.1.4 Design of training programme	6	Project team and plant managers
2.1.5 Execution of training programme	7 onwards	Project team

3. Immediate objective 3

Establishment of quality control and maintenance regimes

3.1 Output 1 Survey and analysis of fish handling and quality problems

Activities for output 1	To be completed by month	Responsible staff
3.1.1 Fish plant and vessel inspection	1 - 4	Project team
3.1.2 Discussions with managers	3 - 5	Project team
3.1.3 Identification of problem areas	6	Team and managers
3.1.4 Drafting of Q.C. plan	7 - 8	Project team
3.1.5 Approval by plant managers	9	Plant managers
3.1.6 Training of staff	10 - 20	Project team
3.1.7 Introduction of strict regimes	20	Plant managers

3.2 Output 2 Machinery maintenance schedules

Activities for output 2	To be completed by month	Responsible staff
3.2.1 Collection of equipment data	2 - 5	Project team

3.2.2 Examination of maintenance needs	4 - 7	Project team
3.2.3 Drafting of maintenance schedule	7 - 9	Project team
3.2.4 Approval by plant engineers	10	Plant engineers
3.2.5 Training of staff	11 - 15	Project team
3.2.6 Introduction of regimes	16	Plant managers

4. Immediate objective 4

Longer term training for new entrants to industry

4.1 Output 1 Training programmes for young applicants

Activities for output 1	To be completed by month	Responsible staff
4.1.1 Assessment of training needs and skills required	12	Project team
4.1.2 Assessment of education and skill levels of applicants	14	Project team
4.1.3 Preparation of introductory 3 month training programme	15	Project team
4.1.4 Selection of candidates and preparation of materials	16	Project committee
4.1.5 First entrants course	17 - 20	Project team
4.1.6 Subsequent course	21 - 24	Project team

PART E INPUTS

(a) Government inputs

Counterpart team leader	24 man months
Other national counterparts	24 man months
Premises for project workshop	68,000 dalasis
Use of government facilities	46,000 dalasis
total value in kind	210,000 dalasis

(b) UNDP/FAO inputs

International staff	
Refrigeration instructor (UNV)	24 man months
Quality control instructor (UNV)	24 man months
Marine Engineer instructor (UNV)	24 man months
Travel including FAO hq experts	$11,000
4 wheel drive vehicle	$22,000
Tools and materials	$13,000
Training courses	$10,000
Miscellaneous and reporting	$ 4,000
total value UNDP inputs	$143,160

PART F RISKS

This project has very few risks as the need for training and the candidates for training are all on hand. Both industry and government are motivated to cooperate in ensuring the success of the programme.

Given expert backstopping by FAO Fisheries Industries Division the project should proceed on sound lines. To avoid the risk of weaknesses in training, the project team members selected should be both qualified technicians and experienced instructors.

PART G PRIOR OBLIGATIONS AND PREREQUISITES

a. Prior obligations

The Project document will be signed by UNDP, and UNDP assistance to the project will be provided only if the prior obligations stipulated above have been met to UNDP's satisfaction.

b. Prerequisites

The Project Document will be signed by UNDP, and UNDP assistance to the project will be provided, subject to UNDP receiving satisfaction that the prerequisites listed above have been fulfilled, or are likely to be fulfilled. When anticipated fulfillment of one or more prerequisites fails to materialise, UNDP may, at its descretion, either suspend or terminate its assistance.

PART H PROJECT REVIEWS, REPORTING AND EVALUATION

a. The project will be subject to tripartite review (joint review by representatives of the government, executing agency and UNDP) at least once every 12 months, the first such meeting to be held within the first 12 months of the start of full implementation. The national project co-ordinator and/or senior project officer of the United Nations executing agency shall prepare and submit to the UNDP Field Performance Evaluation Report (FPER). Additional FPER's may be requested, if necessary, during the project.

b. A project terminal report will be prepared for consideration at the terminal tripartite review meeting. It shall be prepared in draft sufficiently in advance to allow review and technical clearance by the executing agency at least four months prior to the terminal tripartite review.

c. The project shall be subject to evaluation months after the start of full implementation. The organisation, terms of reference and timing will be decided after consultation between the parties involved in the project.

PART I LEGAL CONTEXT

This Project Document shall be the instrument refferred to as such in Article 1 of the Standard Basic Assistance between the Government of The Gambia and the United Nations Development Programme, signed by the Parties on
The Host Country Implementing Agency shall, for the purpose of the Standard Basic Assistance Agreement, refer to the Government Co-operation Agency described in that Agreement.

The following types of revisions may be made to this project document with the signature of the UNDP resident representative only, provided he or she is assured that the other signatories of the project document have no objections to the proposed changes:

a. Revision in, or additiion of, any of the annexes of the project document (with the exception of the Standard Legal Text for non-SBAA countries which may not be altered and the agreement to which is a precondition for UNDP assistance.) (This language is to be added where the host country has not signed the SBAA);

b. Revisions which do not involve significant changes in the immedite objectives, outputs or activities of a project, but are caused by the rearrangement of inputs agreed to or by cost increases due to inflation; and

c. Mandatory annual revisions which rephase the delivery of agreed project inputs or increased expert or other costs due to inflation or take into account agency expenditure flexibility.

PART J BUDGETS

	TOTAL m/m	TOTAL $	YEAR 1 m/m	YEAR 1 $	YEAR 2 m/m	YEAR 2 $
International experts (expert backstopping will be provided by FAO hq FII)						
Admin. and support personnel	24	8,280	12	4,000	12	4,280
UN volunteers 1300						
Refrigeration instructor	24	24,960	12	12,480	12	12,480
Quality control instructor	24	24,960	12	12,480	12	12,480
Marine engineer instructor 1401	24	24,960	12	12,480	12	12,480
Project travel including FAO hq Experts 1500		11,000		5,000		6,000
Total personnel component 1999		94,160		46,440		47,720
Training 33-00		10,000		4,000		6,000
Equipment Expendable equipment 41-00		8,000		5,000		3,000
Non expendable equipment (including 4 wheel drive vehicle) 42-00		27,000		25,000		2,000
Miscellaneous and reporting 51-00		3,840		1,840		3,000
Project Total 99-99		143,000		81,280		61,720

0014a

DRAFT PROJECT DOCUMENT

THE GAMBIA

Title: Protection and enhancement of inshore fishing grounds

Number: **Duration:** 3 years

Project Site: Banjul and Coastal Villages - Gambia

Sector: Agriculture & Natural Resources

Sub-Sector: Fisheries

Host Country Implementing Agency: UNDP and cost-sharing

Executing Agency: FAO or UNIDO

Estimated Starting Date:

Government Inputs: 25,000 dalasis (in kind) (in cash)

financing:	
UNDP IPF	$136,000
Other Government	
Grand Total	$136,000

Brief Description: The construction of a series of small artificial reefs to enhance the productivity of inshore waters, to conserve resources of benthic and reef fishes and to prevent offshore trawlers from encroaching on inshore fishing grounds. The project will benefit two thousand small scale fishermen and their communities and will contribute to the long term conservation of inshore fishery resources.

PART A CONTEXT

Gambia relies on fish and fish products both as essential protein food for the population and as a source of foreign exchange from exports. About a million dollars a year is earned from formal fish exports and probably a similar amount from non-formal or traditional cross-border trade in fish products.

About half the annual catch is produced by the small scale coastal fishermen who number about 2,000 and land around 8,000 tons of fish a year. A 12 mile protection zone is reserved for the exclusive use of the artisanal fishermen. This zone covers a marine area of about 360 square miles or just under a thousand square kilometres. It is the most productive aquatic zone, producing four times as much as the fresh water areas, and area for area many times more than the offshore zone. The coastal zone also serves as a nursery ground for some species which later migrate offshore. Chief among these is shrimp which is the most valuable fish export.

Conservation and enhancement of coastal fish stocks is vital to the long term health of the fishery and to the domestic fish

supply. The area needs also to be protected from illegal incursions by offshore trawlers. These presently can take place with impunity because of the the lack of a fleet of surveillance vessels.

One way to enhance the coastal environment is to establish artificial reefs which can provide protection and habitats for young fish, particulary lobster, crab, octopus, snapper, bream and grouper. Other fish will tend to school around such a reef for both protection and feeding.

If reefs have small anchor-like obstacles around them, they will act as physical barriers to illegal trawling. Any trawl net pulled over the area would be torn or snagged and lost. This would act as a more powerful deterrent than a fleet of protection boats which can never patrol all the coast at all times. The stocks of young fish, especially shrimp and sole would then be unmolested and free to grow to maturity. Artisanal gill nets and lines are designed to catch only mature fish.

PART B PROJECT JUSTIFICATION

1. Problem to be addressed; the present situation.

The richest fishing area in Gambia, the 12 mile coastal zone, has been declared to be a protected area by the Government, for the exclusive use of the artisanal fishermen. Unfortunately, due to the lack of enforecment facilities, poaching continues, mostly by offshore trawlers looking for shrimp on the inshore grounds. These illegal incursions are damaging the fixed gear of artisanal fishermen and destroying much juvenile fish and shrimp. The inshore grounds require some form of effective protection and some action to enhance the coastal stocks of fish.

2. Expected end of project situation.

A series of 20 or more artificial reefs plus 60 outlying sea bed obstacles will form a physical obstacle to trawling at strategic points in the inshore zone. Trawlers will be unable to tow their nets over these areas.

The reefs will form habitats for a variety of marine life and afford protection to reef fishes and crustaceans. They will allow more juveniles to grow to maturity and to spawn in safety, thus enhancing both inshore and offshore fish stocks.

Artisanal fishermen will be trained in reef construction and made familiar with the ecological benefits of artificial reefs. This will create a conservation mentality. The effectiveness of sea-bed obstacles in deterring trawlers will encourage fishermen to view the coastal zone as their own resource. Should trawlers find gaps through which they can infiltrate, the fishermen will know how to drop further obstacles in those places.

Both inshore and offshore fish stocks should increase in the long term as a result of the reefs. This should affect many species but primarily high value groups like lobster, shrimp, sole and snapper.

3. Target beneficiaries

The chief beneficiaries are the 2,000 marine small scale fishermen and their communities. Fish consumers will also benefit. A mere 5 per cent improvement in inshore stocks will provide fish protein for a further 20,000 domestic consumers. There will be additional benefits for the offshore trawl fishing due to the survival of more fish, particularly shrimp, to maturity. The shrimp, when mature, move offshore into deeper water where they can be harvested legally by trawlers.

4. Project strategy and institutional arrangements

The project leader will work under the administrative supervision of the UNDP, UNIDO or FAO representative and under the technical guidance of the Fisheries Department. The Department will allocate officers to assist in identifying sites, in negotiations with fishermen, and in acquisition of reef materials.

It is imperative that each community of fishermen is actively involved in the selection of sites. This will involve prolonged discussions with fishermen leaders and exploration of the purpose and effects of the reefs.

5. Reasons for assistance from UNDP/UNIDO/FAO

A reef construction project, requiring as it does, some expert supervision, a transport vehicle and work boat, is best tackled on a national basis. The Government must contribute support staff, legal permission and supplies of raw materials. The fishermen will supply on-site labour and assistance at nominal cost or on a food-for-work basis. UNDP support is requested to supply the team leader, the vehicle and boat, and some operating expenses.

6. Special Considerations

Designs of artificial reefs are available and FAO is able to provide copies of related documents and general guidance through the office of the FAO Representative.

7. Co-ordination arrangements

The project funds will be handled by the representative of FAO, UNDP or UNIDO. Expenditures will be agreed upon with the Team eader and the Department of Fisheries in accordance with the

terms of the project document. The Representative, the Team Leader, and the Director of Fisheries will meet regularly, to review progress and to co-ordinate activities.

8. Counterpart support capacity

The fisheries department should allocate a full-time counterpart to the project plus, as necessary, officers who speak the language of the target fishing communities, officers trained in marine biology and officers who would subsequently construct or monitor artificial reefs after the project is complete.

PART C DEVELOPMENT OBJECTIVE

The main development objective is the wise management and conservation of the coastal fishery resources of Gambia.

A secondary development objective is improved long term fish production by the artisanal fleet, resulting in better incomes for fishing communities and increased supplies of fish protein for domestic consumers.

PART D IMMEDIATE OBJECTIVES, OUTPUTS AND ACTIVITIES

1 Immediate Objective 1

The protection and enhancement of the coastal fishing grounds of Gambia.

1.1 Output 1

20 artificial reefs established in selected strategic locations on coastal fishing grounds.

Activities for output 1		To be completed by	Responsible project staff
1.1.1	Purchase and delivery of truck and workboat	month 1 - 6	UN Agency Representative
1.1.2	Accumulation of reef materials	month 6 - 12	Team Leader
1.1.3	Discussion and selection of sites with local fishermen and government authorities	month 6 - 18	Team Leader and colleagues
1.1.4	Construction of reefs	month 12 - 30	Team Leader and colleagues

1.2 Output 2

60 sea-bed trawling obstacles constructed and planted in strategic locations around the artificial reefs.

Activities for output 2		To be completed by	Responsible project staff
1.2.1	Accumulation of scrap iron, chain, oil drums, rocks and cement	month 6 - 18	Team Leader
1.2.2	Construction of obstacles	month 12 - 24	Team Leader and colleagues
1.2.3	Positioning of obstacles in consultation with local fishermen	month 18 - 30	Team Leader and colleagues

PART E INPUTS

a. Government Inputs

National Staff:

Counterpart Project Officer	36 months
Fishermen liaison officers 4 x 6	24 months
Reef construction and monitoring officers 4 x 6	24 months
TOTAL	84 months

Other national inputs:

Provision of reef materials, rock, sand for concrete blocks, coconut palm logs, scrap iron

VALUE IN KIND 80,000

dalasis

b. UNDP/UNIDO/FAO Inputs

International staff:

Post: 1101 Title: Team Leader (UNV) Total m/m: 28

Required actual date: month 6

Sub Contracts: nil

Training: conducted on site

Equipment and Supplies:	One 5 ton truck	month 6
	One 9 metre workboat	month 8
	diving equipment	month 10
	anchors, chain, shackles, hardware	month 10
	cement, ropes, netting and building materials	month 10

PART F RISKS

There are possibly two risks facing the project, and both are of a minor nature. The first concerns the nature and quantity of materials that the project will be able to accumulate for each reef. This will vary depending on what is available, but may include old car bodies, rocks, pieces of wreckage, old car tyres, oil drums, coconut palm logs and so on. Each reef will have to be designed with the materials at hand. Hollow concrete blocks and short pieces of piping will be assembled on site to form habitats for lobsters, octopus, eels and reef fish. In some cases, pieces of scrap may have to be welded together to form the central core of the reef.

A second risk concerns the fishing communities who must understand the concept and agree to its implementation. No reef should be constructed without the approval and support of the fishermen leaders. This may delay work at some sites but it is not expected to be a major problem. While the fishermen may not grasp the ecological significance immediately, they will readily appreciate the advantage of having some obstacles to bottom trawling in their area.

PART G PRIOR OBLIGATIONS AND PREREQUISITES

a. Prior Obligations

The Project Document will be signed by UNDP, and UNDP assistance to the project will be provided only if the prior obligations stipulated above have been met to UNDP s satisfaction.

b. Prerequisites

The Project Document will be signed by UNDP, and UNDP assistance to the project will be provided, subject to UNDP receiving satisfaction that the prerequisites listed above have been fulfilled, or are likely to be fulfilled. When anticipated fulfillment of one or more prerequisites fails to materialize, UNDP may, at its descretion, either suspend or terminate its assistance.

PART H PROJECT REVIEWS, REPORTING AND EVALUATION

a. The project will be subject to tripartite review (joint review by representatives of the government, executing agency and UNDP) at least once every 12 months, the first such meeting to be held within the first 12 months of the start of full implementation. The national project co-ordinator and/or senior project officer of the United Nations executing agency shall prepare and submit to the UNDP Field Performance Evaluation Report (FPER). Additional FPERs may be requested, if necessary, during the project.

b. A project terminal report will be prepared for consideration at the terminal tripartite review meeting. It shall be prepared in draft sufficiently in advance to allow review and technical clearance by the executing agency at least four months prior to the terminal tripartite review.

c. The project shall be subject to evaluation months after the start of full implementation. The organisation, terms of reference and timing will be decided after consultation between the parties involved in the project.

PART I LEGAL CONTEXT

This Project Document shall be the instrument referred to as such in Article I of the Standard Basic Assistance Agreement between the Government of The Gambia and the United Nations Development Programme, signed by the Parties on .

The Host Country Implementing Agency shall, for the purpose of the Standard Basic Assistance Agreement, refer to the Government Co-operation Agency described in that Agreement.

The following types of revisions may be made to this project document with the signature of the UNDP resident representative only, provided he or she is assured that the other signatories of the project document have no objections to the proposed changes:

a. Revisions in, or addition of, any of the annexes of the project document with the exception of the Standard Legal Text for non-SBAA countries which may not be altered as the agreement to which is a pre-condition for UNDP assistance). (This language

is to be added in those cases where the host country has not signed the SBAA);

b. Revisions which do not involve significant changes in the immediate objectives, outputs or activities of a project, but are caused by the rearrangement of inputs agreed to or by cost increases due to inflation; and

c. Mandatory annual revisions which rephase the delivery of agreed project inputs or increased expert or other costs due to inflation or take into account agency expenditure flexibility.

PART : BUDGETS

	Total m/m	Total $	Year 1 m/m	Year 1 $	Year 2 m/m	Year 2 $	Year 3 m/m	Year 3 $
International Experts								
1101 Team Leader UNV or SSA	28	28000	6	6000	12	12000	10	10000
1199 Total		28000		6000		12000		10000
Admin & Support Personnel								
1300 Driver and Boat Crew		7000	18	1300	36	2800	36	2900
UN Volunteers								
1401 see 1101 above								
1500 Project Travel		3000		600		1200		1200
1999 Total Personnel Component		38000		7900		16000		14100
Equipment								
4100 Expendable Equipment		13000		2000		6000		5000
4200 Non-Expendable Equipment		65000		65000				
Total Equipment Component		78000		67000		6000		5000
Miscellaneous								
5100 Sundries		4000				2000		2000
Maintenance		4000		1000		1500		1500
Food for work		12000		2000		5000		5000
5999 Total Misc. Component		20000		3000		8500		8500
9999 PROJECT TOTAL		136,000		77,900		30,500		27,600

PROJECT REQUEST

from	GOVERNMENT OF THE GAMBIA
to	UNITED NATIONS DEVELOPMENT PROGRAMME
and	UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION

F E A S I B I L I T Y S T U D Y

FISH LANDING PIER AND ICE PLANT

AT BANJUL PORT

starting date	1 February 1990
duration	4 months
cost	UNDP $58,000
Government support costs	$32,000 Dalasis (in kind)

BACKGROUND

Gambia's domestic industrial fishing fleet currently produces about 5,500 tons of exportable fish, mainly high quality demersal fish, sole, shrimp and mackerel. This catch is worth several million dollars on the export market. Most of it is exported frozen.

The fish plants of Banjul wish to increase their production and the Government is keen to see the foreign exchange earnings from fish, increase over the next few years. There is a potential for increasing the supply of exportable fish, both from improved catches and from expanded deliveries of fish from artisanal boats. The latter requires a considerable and regular supply of ice, but given that, it is both feasible and attractive to the artisanal fishermen.

There are no harbour facilities specifically for fishing vessels in the Gambia. Industrial vessels have to utilise quayside facilities as available at the commercial port. Artisanal boats also have no proper handling or landing places except as being developed by EEC at Gunjur.

The fish plants of Banjul are suffering from the lack of a pier which is constraining supplies from both industrial and artisanal vessels. The delays and inefficiences of landing are also affecting fish quality. There is in addition an urgent need for ice by all those involved in the fish business, including fishermen, fish merchants, fish vendors and transporters.

A suitable site exists for the facility, within reach of all the main plants. The Norwegian aid agency, NORAD, which has $7 million currently earmarked for Gambia is willing to put some of this as grant aid towards construction of a pier, provided one other donor or aid agency would also contribute. The ice plant could be funded commercially and eventually handed over to a local company.

PROPOSAL

It is proposed that UNIDO seek a package of funding for the project, part NORAD grant, part UNIDO raised assistance and part commercial loan. The pier is expected to cost $2.4 million, and the ice plant and cold store $0.6 million, totalling $3 million altogether. Finance might be obtained in the order of $1.8 million from NORAD, $0.6 million from UNLDO industrial funds and $0.6 million as a commercial loan to the ice plant enterprise. It may be possible to recoup all or part of the UNIDO contribution from revenues.

A fish terminal management authority would be established to determine landing fees and maintenance procedures. Actual operation would be by a private group and ice plant management and operation by a private firm.

Gross revenues may be in the order of $70,000 dollars or 560,000 dalasis for the pier, based on 1800 landings at $25 per landing/embarking and 2% of the value of approximately 900 tons of fish and shrimp. The ice plant might gross $384,000 or 3,072,000 dalasis for 16,000 tons of block ice. If $40,000 of pier revenues and $40,000 of ice plant revenues could go towards repayment of the UNIDO industrial grant/loan then some $400,000 might be repaid with interest in ten years. It is probable that the facility would stimulate the local offshore fleet and that landing revenues would increase substantially within a few years.

In order to spread the benefits of the ice supply to the riverine fishing communities, it is proposed that the ice plant operate two insulated transport boats and that insulated ice storage boxes be left at each of the larger riverine villages where local fishermen and merchants will be able to purchase ice. For those fishermen wishing to avail themselves of the more lucrative Banjul and export markets, the transport boats could carry fish back to Banjul for marketing there.

ESTIMATED COSTS OF LANDING PIER AND ICE PLANT

Site soundings and design work	190,000
Piling and foundations	430,000
Pier construction	1,450,000
Fresh water supplies, access road, fencing	180,000
Pier management office and store	100,000
sub total	$2,350,000
Ice plant and ice store buildings	170,000
Generators and compressors	180,000
Refrigeration machinery	140,000
Delivery trucks, chutes and trolleys	60,000
2 x insulated river transport boats	90,000
Insulated ice boxes for villages	10,000
sub total	$650,000

ESTIMATED REVENUES

Landing and berthing fees - 1,800 x $25	45,000
Fish catch levy - 2% of value, 3 tons/day	25,000
sub total	$70,000

Less Expenses:

Maintenance	10,000
Wages and water rates	20,000
Balance for capital repayments	$40,000

Ice Plant Revenue: 16,000 tons ice	$384,000

Less Expenses:

Fuel oil	70,000
Rental payment towards fish pier	40,000
Refrigerants, lubricants and chemicals	20,000
Spare parts and maintenance	10,000
Operation of transport boats and vehicles	15,000
Labour and management	60,000
Capital repayment and interest charges	150,000
sub total	$365.000

2. PROJECT OBJECTIVE

To study the feasibility of a proposed fish landing pier and ice plant facility to support the fish processing and export industry.

3. OUTPUTS

3.1 Output 1

A project/investment feasibility study which can be submitted to possible funding sources if the study proves favourable.

3.2 Activities for output 1

	month	responsibility
3.2.1 Preparation of terms of reference	0	UNIDO
Recruitment of consultants	1	UNIDO
Implementation of study	2-3	Consultants
Preparation and submission of report	4	Consultants

4. INPUTS

4.1 National inputs	(in kind)	
Government staff time and facilities	32,000	dalasis
Fish plants staff time and facilities	27,000	dalasis

4.2 UNDP inputs

Consultants:	m. months	$
Pier construction consultant	1.5	$8,000
Ice plant and ice sales consultant	1.0	$6,000
Financial analyst	1.0	$6,000
Travel and expenses		$17,000
Test boring at proposed site		$16,000
Miscellaneous and reporting		$ 5,000
TOTAL		$58,000

5. FOLLOW UP

The study, once accepted by UNIDO and the Government of the Gambia would be submitted to funding sources which have shown interest including NORAD.

INVESTMENT PROPOSAL

GAMBIA

Fish Landing Pier*		$2,700,000
Ice Plant and Cold Store*		$ 800,000
	Total	$3,500,000

Source of Finance

Possibly
- Norad
- Arab Fund
- Commercial Banks

Joint Venture Partner

Required for Ice Plant

Request from
- Gambia Fisheries Department
- Banjul Fish Industries
- Banjul Port Authority

Promotor

UNIDO

* Includes prior mission costs and studies

BACKGROUND

Gambia's domestic industrial fishing fleet currently produces about 5,500 tons of exportable fish, mainly high quality demersal fish, sole, shrimp and mackerel. This catch is worth several million dollars on the export market. Most of it is exported frozen.

The fish plants of Banjul wish to increase their production and the Government is keen to see the foreign exchange earnings from fish, increase over the next few years. There is a potential for increasing the supply of exportable fish, both from improved catches and from expanded deliveries of fish from artisanal boats. The latter requires a considerable and regular supply of ice, but given that, it is both feasible and attractive to the artisanal fishermen.

There are no harbour facilities specifically for fishing vessels in the Gambia. Industrial vessels have to utilise quayside facilities as available at the commercial port. Artisanal boats also have no proper handling or landing places except as being developed by EEC at Gunjur.

The fish plants of Banjul are suffering from the lack of a pier which is constraining supplies from both industrial and artisanal vessels. The delays and inefficiences of landing are also affecting fish quality. There is in addition an urgent need for ice by all those involved in the fish business, including fishermen, fish merchants, fish vendors and transporters.

A suitable site exists for the facility, within reach of all the main plants. The Norwegian aid agency, NORAD, which has $7 million currently earmarked for Gambia is willing to put some of this as grant aid towards construction of a pier, provided one other donor or aid agency would also contribute. The ice plant could be funded commercially and eventually handed over to a local company.

PROPOSAL

It is proposed that UNIDO seek a package of funding for the project, part NORAD grant, part UNIDO raised assistance and part commercial loan. The pier is expected to cost $2.4 million, and the ice plant and cold store $0.6 million, totalling $3 million altogether. Finance might be obtained in the order of $1.8 million from NORAD, $0.6 million from UNLDO industrial funds and $0.6 million as a commercial loan to the ice plant enterprise. It may be possible to recoup all or part of the UNIDO contribution from revenues.

A fish terminal management authority would be established to determine landing fees and maintenance procedures. Actual operation would be by a private group and ice plant management and operation by a private firm.

Gross revenues may be in the order of $70,000 dollars or 560,000 dalasis for the pier, based on 1800 landings at $25 per landing/embarking and 2% of the value of approximately 900 tons of fish and shrimp. The ice plant might gross $384,000 or 3,072,000 dalasis for 16,000 tons of block ice. If $40,000 of pier revenues and $40,000 of ice plant revenues could go towards repayment of the UNIDO industrial grant/loan then some $400,000 might be repaid with interest in ten years. It is probable that the facility would stimulate the local offshore fleet and that landing revenues would increase substantially within a few years.

In order to spread the benefits of the ice supply to the riverine fishing communities, it is proposed that the ice plant operate two insulated transport boats and that insulated ice storage boxes be left at each of the larger riverine villages where local fishermen and merchants will be able to purchase ice. For those fishermen wishing to avail themselves of the more lucrative Banjul and export markets, the transport boats could carry fish back to Banjul for marketing there.

ESTIMATED COSTS

Site soundings and design work	190,000
Piling and foundations	430,000
Pier construction	1,450,000
Fresh water supplies, access road, fencing	180,000
Pier management office and store	100,000
sub total	$2,350,000
Ice plant and ice store buildings	170,000
Generators and compressors	180,000
Refrigeration machinery	140,000
Delivery trucks, chutes and trolleys	60,000
2 x insulated river transport boats	90,000
Insulated ice boxes for villages	10,000
sub total	$650,000

ESTIMATED REVENUES

Landing and berthing fees - 1,800 x $25	45,000
Fish catch levy - 2% of value, 3 tons/day	25,000
sub total	$70,000

Less Expenses:

Maintenance	10,000
Wages and water rates	20,000
Balance for capital repayments	$40,000

Ice Plant Revenue: 16,000 tons ice	$384,000

Less Expenses:

Fuel oil	70,000
Rental payment towards fish pier	40,000
Refrigerants, lubricants and chemicals	20,000
Spare parts and maintenance	10,000
Operation of transport boats and vehicles	15,000
Labour and management	60,000
Capital repayment and interest charges	150,000
sub total	$365.000

0012a

DRAFT PROJECT DOCUMENT

COUNTRY SIERRA LEONE

TITLE Primary Industry Development in the Sherbro Bonthe/Bendu area

NUMBER DURATION 3 years

PROJECT SITE Bendu or Bonthe Sierra Leone

SECTOR Natural Resources UNDP FINANCING $393,000

SUB-SECTOR Fisheries and Rural Industry

HOST COUNTRY IMPLEMENTING AGENCY Ministry of Agriculture and Natural Resources

EXECUTING AGENCY UNIDO

ESTIMATED STARTING DATE

GOVERNMENT INPUTS $4,200,000 Leones (in kind)

BRIEF DESCRIPTION Following on the success of recent integrated rural and fisheries projects executed in Sierra Leone with support from UNDP, FAO, ILO, GTZ and others, the Government has declared Sherbro to be a priority area for similar development. It is a fishery region in the south of the country soon to be connected by an access road to inland markets. This integrated project will develop fisheries and rural industry in the area, utilising experience and successful methodology from similar projects. It will be one of a series of rural and fisheries industry development projects in West Africa to be serviced by a regional training centre.

PART A CONTEXT

Sierra Leone's artisanal fishermen currently produce about 50,000 tons of fish annually, by far the bulk of the domestic catch. From the coastal villages, thousands of tons of smoked fish are transported to inland markets, chiefly around the mining towns. The fish protein supply is of vital importance to the country and the fish industry is the main economic motor in the coastal communities.

The main constraints to development of this sector is the supply of engines and nets, road access to markets and wood fuel supplies for fish smokers. Traditional villages also require to develop organisational and managerial capacities to facilitate development.

Recent coastal village projects at Shenge (FAO) and Tombo (GTZ) have demonstrated the success that can be obtained through people's participation and integrated development efforts. This has resulted in increased production and value added at Shenge where $3 to $5 million is earned annually from the fishery industry and at Tombo which has grown from 5,000 to over 15,000 population and is producing similar quantities of smoked fish.

The success of these two projects mirrors the achievements of other U.N. projects inland dealing with forestry (FAO) and roads (ILO). There also, people's participation and integrated development have gone hand in hand. As a result the EEC will adopt a similar approach in fishing communities close to Freetown, just north and south of the city.

Sherbro island to the south and the adjacent mainland area has been selected by the government as a priority area for integrated development of rural industries based on fisheries but with a strong environmental and social emphasis. The time may be ripe for this as an ILO project is about to complete an access road to Bendu near Bonthe. With access to fishing gear and markets the fishermen of Sherbro should stimulate local industry as in the villages farther north.

PART B PROJECT JUSTIFICATION

1. Problem to be addressed: the present situation

The Bonthe/Sherbro area is rich in human and natural potential having good land, fish, forestry and agriculture resources. Fish is the chief resource and the biggest potential earner. The fish resource is not being exploited fully at present because the fishermen lack nets and equipment and the fish traders do not yet have proper road access into the area. The local people are industrious and progressive but their efforts are currently being frustrated mainly by these two constraints. The lack of fishing gear reflects the national shortage of foreign exchange for

imports. The need for an access road will be met within the next year when the ILO Bendu road is due to be completed.

2. Expected end of project situation

Fish trade from the Bonthe region will have grown to an annual value of over $3 million and this will have generated hundreds of new jobs in fish capture, boat construction,fish smoking, transport, fuelwood supplies and engine repairs as well as secondary jobs in the service sector.

Excessive use of woodfuel will have been reduced by introduction of chorker fish smoking ovens and fuel efficient household stoves. Drinking water supplies will have been augmented and hygeinic operation and maintenance regimes established. Excessive labour in wood collection will have been reduced and jobs created in fuelwood supply and woodlot management. Local enterprises will have been established or expanded to manage the supply of fuel oils, engines and nets, boat timber, hardware, local bricks, locally processed foods and tailored clothing.

Perhaps the most important changes will be in the areas of organisation and environment.

A management structure will have been established in the villages and the region, with full people's participation. This will include trained community managers who will work for each village, networking production and marketing to realise the highest returns.

All activities engaged in will be designed to protect, improve and enhance the environment by conservation and wiser or optimum use of soil and water resources, and by methods of production and harvesting that do not harm the environment in any way. The best examples of this may be the controlled harvesting of forest lands and the related planting of woodlots for fuel and building materials.

The target communities in Sherbro will become industrially active and will generate further small business and industry which will add to the regional wealth and income. The project will be one of the ongoing activities which will be used by the regional UNIDO rural fisheries village industry training centre as an example for regional training purposes.

3. Target beneficiaries

A group of 6 to 12 villages will be chosen, in the Bonthe area, with a total population of some 7,000 to 12,000 persons as the target. The project will include all persons in the villages as potential beneficiaries and not just fish industry related

workers. Women, young people and other artisans will be assisted to participate in wealth creation and local development.

The project team will be based in one of the main target villages, probably Bendu or Bonthe.

4. Project strategy and institutional arrangements

The team will be based in one of the main target villages and they will work closely with the leaders of each target community so that all villages are fully informed of all activities and have ample time and opportunity to amend or expand elements as they see fit. No activity will be started without the agreement and support of the communities concerned.

The project imprest will be operated in Freetown by the UNIDO representative and cash disbursements made for local expenditures through arrangements with a bank or office in Bonthe or Matru.

5. Reasons for Assistance from UNDP/UNIDO

It is essential that the Sherbro fishermen obtain fishing gear and equipment if they are to increase production and this the project will be able to supply on similar lines to the Shenge and Tombo projects which imported gear from abroad and supplied it to local fishermen for payment in local currency. Organisation of people's participation based local enterprises is desired along the lines of other successful UNDP projects. The U.N. and its agencies also have the expertise required in applying appropriate technologies, in developing rural industry, and in forestry and fisheries.

6. Special considerations

The approach taken in this proposal is based on several successful models now in use in Africa and Asia in U.N. government and bilateral development efforts. These include the People's Participation model, Shenge & Tombo, Sierra Leone FAO & GTZ; Economic analysis and monitoring of industrial production systems, Latin America & Africa UNIDO; Networking of production of smallholders and training of community managers, Negros, Philippines government; Resource assessment and use planning for rural communities, Maputo, Mozambique, FAO. The models are described in attached papers and will be developed for training purposes at the regional centre.

7. Co-ordination arrangements

It is important that closer and regular liaison be maintained between the Project and the local Paramount Chief and between the Project and UNDP/UNIDO Freetown, and the various government offices. The tripartite committee will provide guidelines to maintain this liaison at an early meeting.

8. Counterpart support capacity

The Government should provide counterpart officers as designated for the duration of the project. Officers with the expertise in these areas already exist. If as a result of restructuring in accordance with the IMF agreement, the government is unable to provide all of the counterparts requested, the project will consider hiring former technical officers as local staff.

PART C DEVELOPMENT OBJECTIVE

The main objective is to lay the foundation for diversified small scale industrial activities in the target villages and by establishing the first generation of these to create a surplus for investment which through organisation, optimum resource use and technological innovation will lay the base for primary industry and further growth This is to be accomplished while tackling serious environmental issues including forestry/fuelwood, soil and water conservation, and sanitation.

PART D IMMEDIATE OBJECTIVES OUTPUTS AND ACTIVITIES

1. Immediate Objective 1

The establishment of people's participation structures in the target villages, the assessment of natural and human resources and the planning of development activities

1.1 Output 1 A communication and authority network throughout the target communities, fully representative of the people and able to assess and critique proposals on behalf of the people.

Activities for output 1	To be completed by month	Responsible Staff
1.1.1 Assessment of village authorities	1	Project team plus local social experts
1.1.2 Discussion with village power groups	2	Team leader & government officer
1.1.3 Formation and recognition of community representative groups or committees	3	Tripartite Committee
1.1.4 First discussions on project plans	4	Team leader, government officer & p.p.groups

1.2 Output 2 Resource assessment and analysis of the area. *

Activities for output 2	To be completed by month	Responsible Staff
1.2.1 Study of existing material on the area	1	Team plus local experts
1.2.2 Compilation of data on soil,water,climate vegetation	2	Team plus local experts
1.2.3 Assessment of present & potential production of fish,agro-products and forestry	3	Team plus local experts
1.2.4 Assessment of human skills and labour including men, women and rural youths	2 - 3	Team plus local experts
1.2.5 Production improvement plan with input requirements	4	Project team
1.2.6 Plan submitted to communities	5	Project team

*note: All these activities would be backstopped by the Regional centre

1.3 Output 3 Development Activities plan with work and tool inputs.

Activities for output 3	To be completed by month	Responsible Staff
1.3.1 Community representative agreement to and/or modification of plans	6	Project team and people

1.3.2 Translation of production plan into preparatory work activities	7	Project team
1.3.3 Agreement with villagers on who will undertake preparatory work and on amounts of food for work to be allocated	8	Project team and people
1.3.4 Preparation of tools list and identification of work sites	8	Project team

2 Immediate Objective 2

Execution of development plan and activities including training, organisation and technological innovation.

2.1 Output 1 Organised communities in agreement with and working on development activities and producing changed work patterns to yield better harvests, more value added and substituting environmental enhancement for environmental degradation.

Activities for output 1	To be completed by month	Responsible Staff
2.1.1 Purchase of project initial supply of tools and small vehicles	1	UNIDO rep and team leader
2.1.2 Construction of village housing for project staff	1 - 3	Team leader, UNIDO rep, Govt. officer, Community leaders
2.1.3 Purchase of tools for village work	7 and on	Team leader & Unido rep.
2.1.4 Ordering of food for work commodities and storage	7 and on	Team leader & UNIDO rep.
2.1.5 Execution of work activities	9 onwards	Villagers and project team
2.1.6 Initiation of improved production systems	12 onwards	Villagers and project team

2.2 Output 2 Supply of nets, engines and equipment for local fishing canoes

Activities for out put 2	To be completed by month	Responsible Staff
2.2.1 Ordering nets, engines and equipment	1 and 13 and 25	Team leader, Unido rep. & gov.tech.officers

2.2.2 Receipt of orders	4 and 17 and 29	Team leader and UNIDO
2.2.3 Sale of gear and engines to local bona fide fishermen	5 onwards	Project team in liaison with village committees
2.2.4 Identification of group or person to manage local gear store	24 - 30	Project team and local committees
2.2.5 Establishment of local fishing gear retail store	30 - 36	Project team

2.3 Output 3 Simple industrialisation of processing and transport to reduce labour and increase value added:this seen in processing tools and facilities, improved products and economical village owned transport to market.

Activities for Output 3	To be completed by month	Responsible Staff
2.3.1 Identification of labour consuming practices and mechanisation possibilities	3 - 9	Project team and local experts
2.3.2 Introduction of tools and machines and training in their use	10 onwards	Project team
2.3.3 Networking of production for joint marketing	12 onwards	Project team and villagers
2.3.4 Establishment of simple transport facilities, owned and operated by members of the communities	15 - 24	Project team and villagers

2.4 Output 4 Trained community Managers and ongoing development promotion and monitoring of progress

Activities for Output 4	To be completed by month	Responsible Staff
2.4.1 Selection of suitable village candidates for training as managers	3 - 9	Team leader and villagers
2.4.2 Training of selected community managers	12 - 24	Project and Regional centre
2.4.3 Application of management and monitoring systems	12 onwards	Team leader
2.4.4 Installation of community managers with agreed terms of reference for their work and arrangements for their support	24	Team leader and villagers

2.5 Output 5 Project evaluation and recommendations for follow up activities

Activities for output 5	To be completed by month	Responsible Staff
2.5.1 Assessment of production and income increases and degree of industrial progress	30 - 34	Team leader
2.5.2 Meeting with all village authorities to discuss progress and future plans	34	Villagers, project team and Govt. officers
2.5.3 Tripartite review of project	35	UNDP/UNIDO, Govt., leaders and managers
2.5.4 Final report	36	Team leader/ UNIDO

PART E (a) GOVERNMENT INPUTS

National staff

Counterpart team leader	36 man months
Technical field officers	72 man months
Land for project site	600,000 leones
Use of government facilities	800,000 leones
Total value in kind	4,200,000 leones

Other national inputs

Target villagers inputs

People's Participation committees and village authority supervisors (8x4x3)	96 man months
Labour for project activities given on food for work basis. Additional value of labour 200x6x5,000	6,000,000 cfa
Other inputs, materials and services	1,500,000 cfa
Total value in kind	9,900,000 cfa

(b) UNDP INPUTS

Project staff

Team leader (volunteer)	36 man months
Rural technician (volunteer)	36 man months

Marine mechanic	36 man months
Administrative support (to UNDP/UNIDO)	72 man months
National experts	72 man months
Total value of above	$208,600
Expendable equipment including supplies of fishing gear	$ 60,000
Non expendable equipment including boat, motor cycle, marine engines	$ 74,000
Premises - village style housing	$ 27,000
Miscellaneous items including food for work	$ 19,400
Total value for U.N. inputs	$389,000

PART F RISKS

The sucess of this ambitious project (one of a series of similar projects in the region) depends on the degree of people's enthusiastic participation; the accurate assessment of resource potential and identification of production systems and technologies; and the development of organisational and managerial skills within the community.

To minimise the risk of failure in each of these fields of activity, the project will use proven successful models and approaches presently in use in Africa by U.N. and bilateral agencies. They are described more fully elsewhere and will be the focus of the regional centre for training and support of primary industrial development in rural fishing villages in West Africa.

A degree a motivation and commitment as well as imaginative response is required of the project team. This has been achieved in similar projects in the region especially where, as in this project, the team lives in the village with the target community.

It should be borne in mind that the risks of not undertaking the project are much greater than any risk of failure to reach goals. At present de-forestation, soil erosion, destructive agricultural practices and water waste or pollution are aggravating the environmental problems to such a degree that they will be much more formidable if action is delayed by some years. Also the poverty trap that the people find themselves in is resulting in poor health, lack of education and general discouragement reflected in migration of youth to urban centres. These

negative influences will continue to make matters worse if no remedial action is taken.

PART G PRIOR OBLIGATIONS AND PREREQUISITES

a. Prior obligations

The Project document will be signed by UNDP, and UNDP assistance to the project will be provided only if the prior obligations stipulated above have been met to UNDP's satisfaction.

b. Prerequisites

The Project Document will be signed by UNDP, and UNDP assistance to the project will be provided, subject to UNDP receiving satisfaction that the prerequisites listed above have been fulfilled, or are likely to be fulfilled. When anticipated fulfillment of one or more prerequisites fails to materialise, UNDP may, at its descretion, either suspend or terminate its assistance.

PART H PROJECT REVIEWS, REPORTING AND EVALUATION

a. The project will be subject to tripartite review (joint review by representatives of the government, executing agency and UNDP) at least once every 12 months, the first such meeting to be held within the first 12 months of the start of full implementation. The national project co-ordinator and/or senior project officer of the United Nations executing agency shall prepare and submit to the UNDP Field Performance Evaluation Report (FPER). Additional FPER's may be requested, if necessary, during the project.

b. A project terminal report will be prepared for consideration at the terminal tripartite review meeting. It shall be prepared in draft sufficiently in advance to allow review and technical clearance by the executing agency at least four months prior to the terminal tripartite review.

c. The project shall be subject to evaluation months after the start of full implementation. The organisation, terms of reference and timing will be decided after consultation between the parties involved in the project.

PART I LEGAL CONTEXT

This Project Document shall be the instrument refferred to as such in Article 1 of the Standard Basic Assistance between the Government of Sierra Leone and the United Nations Development Programme, signed by the Parties on 21 December 1977.
The Host Country Implementing Agency shall, for the purpose of the Standard Basic Assistance Agreement, refer to the Government Co-operation Agency described in that Agreement.

The following types of revisions may be made to this project document with the signature of the UNDP resident representative only, provided he or she is assured that the other signatories of the project document have no objections to the proposed changes:

a. Revision in, or additiion of, any of the annexes of the project document;

b. Revisions which do not involve significant changes in the immedite objectives, outputs or activities of a project, but are caused by the rearrangement of inputs agreed to or by cost increases due to inflation; and

c. Mandatory annual revisions which rephase the delivery of agreed project inputs or increased expert or other costs due to inflation or take into account agency expenditure flexibility.

PART J BUDGETS

	Total m/m	$	Year 1 m/m/	$	Year 2 m/m	$	Year 3 m/m	$
International Experts (expert support will come from the regional centre)								
Administrative support 6,000 personnel 1399	72	18,000	24	6,000	24	6,000	24	
U.N. Volunteers								
Team leader 1401	36	49,026	12	16,324	12	16,324	12	16,324
Rural technicians 1402	36	49,026	12	16,324	12	16,324	12	16,324
Marine mechanic 1403 16,324 Project travel and UNIDO mission costs	36	49,026	12	16,324	12	16,324	12	
1600		21,922		6,000		6,000		9,922
National experts								
Fish smoking officer	36	10,800	12	3,600	12	3,600	12	3,600
Agro industry officer 3,600	36	10,800	12	3,600	12	3,600	12	
Total personnel component 19-99		208,600		68,226		68,226		72,148
Equipment								
Expendable equipment 41-00		60,000		30,000		20,000		10,000
Non expendable equipment 42-00		78,000		44,000		20,000		14,000
Premises 43-00		27,000		23,000		3,000		1,000
Total equipment component 49-99		165,000		97,000		43,000		25,000
Miscellaneous								
Sundries and food for work 51-00		19,400		4,400		8,000		7,000
Project Total 99 99		393,000		169,626		119,226		104,148

DRAFT PROJECT DOCUMENT

SIERRA LEONE

Title: Protection and enhancement of inshore fishing grounds

Number: Duration: 3 years

Project Site: Freetown and Coastal Villages - Sierra Leone

Sector: Agriculture & Natural Resources

Sub-Sector: Fisheries

Host Country Implementing Agency:		UNDP and cost-sharing financing:	
Executing Agency:	FAO or UNIDO	UNDP IPF	$136,000
Estimated Starting Date:		Other Government	
Government Inputs:	2,000,000 Leones (in kind) (in cash)	Grand Total	$136,000

Brief Description: The construction of a series of small aftificial reefs to enhance the productivity of inshore waters, to conserve resources of benthic and reef fishes and to prevent offshore trawlers from encroaching on inshore fishing grounds. The project will benefit two thousand small scale fishermen and their communities and will contribute to the long term conservation of inshore fi iery resources.

PART A CONTEXT

Sierra Leone relies on fish and fish products both as essential protein food for the population and as a source of foreign exchange from exports. Several million dollars a year are earned from formal fish exports and probably a similar amount from non-formal or traditional cross-border trade in fish products.

About half the annual catch is produced by the small scale coastal fishermen who number about 20,000 and land around 50,000 tons of fish a year. A 5 mile protection zone is reserved for the exclusive use of the artisanal fishermen. This zone covers a marine area of about 750 square miles or about two thousand square kilometres. It is the most productive aquatic zone, producing four times as much as the fresh water areas, and area for area many times more than the offshore zone. The coastal zone also serves as a nursery ground for some species which later migrate offshore. Chief among these is shrimp which is the most valuable fish export.

Conservation and enhancement of coastal fish stocks is vital to the long term health of the fishery and to the domestic fish

supply. The area needs also to be protected from illegal incursions by offshore trawlers. These presently can take place with impunity because of the the lack of a fleet of surveillance vessels.

One way to enhance the coastal environment is to establish artificial reefs which can provide protection and habitats for young fish, particulary lobster, crab, octopus, snapper, bream and grouper. Other fish will tend to school around such a reef for both protection and feeding.

If reefs have small anchor-like obstacles around them, they will act as physical barriers to illegal trawling. Any trawl net pulled over the area would be torn or snagged and lost. This would act as a more powerful deterrent than a fleet of protection boats which can never patrol all the coast at all times. The stocks of young fish, especially shrimp and sole would then be unmolested and free to grow to maturity. Artisanal gill nets and lines are designed to catch only mature fish.

PART B PROJECT JUSTIFICATION

1. Problem to be addressed; the present situation.

The richest fishing area in Sierra Leone, the 5 mile coastal zone, has been declared to be a protected area by the Government, for the exclusive use of the artisanal fishermen. Unfortunately, due to the lack of enforecment facilities, poaching continues, mostly by offshore trawlers looking for shrimp on the inshore grounds. These illegal incursions are damaging the fixed gear of artisanal fishermen and destroying much juvenile fish and shrimp. The inshore grounds require some form of effective protection and some action to enhance the coastal stocks of fish.

2. Expected end of project situation.

A series of 20 or more artificial reefs plus 60 outlying sea bed obstacles will form a physical obstacle to trawling at strategic points in the inshore zone. Trawlers will be unable to tow their nets over these areas.

The reefs will form habitats for a variety of marine life and afford protection to reef fishes and crustaceans. They will allow more juveniles to grow to maturity and to spawn in safety, thus enhancing both inshore and offshore fish stocks.

Artisanal fishermen will be trained in reef construction and made familiar with the ecological benefits of artificial reefs. This will create a conservation mentality. The effectiveness of sea-bed obstacles in deterring trawlers will encourage fishermen to view the coastal zone as their own resource. Should trawlers find gaps through which they can infiltrate, the fishermen will know how to drop further obstacles in those places.

Both inshore and offshore fish stocks should increase in the long term as a result of the reefs. This should affect many species but primarily high value groups like lobster, shrimp, sole and snapper.

3. Target beneficiaries

The chief beneficiaries are the 20,000 marine small scale fishermen and their communities. Fish consumers will also benefit. A mere 5 per cent improvement in inshore stocks will provide fish protein for a further 120,000 domestic consumers. There will be additional benefits for the offshore trawl fishing due to the survival of more fish, particularly shrimp, to maturity. The shrimp, when mature, move offshore into deeper water where they can be harvested legally by trawlers.

4. Project strategy and institutional arrangements

The project leader will work under the administrative supervision of the UNDP, UNIDO or FAO representative and under the technical guidance of the Fisheries Department. The Department will allocate officers to assist in identifying sites, in negotiations with fishermen, and in acquisition of reef materials.

It is imperative that each community of fishermen is actively involved in the selection of sites. This will involve prolonged discussions with fishermen leaders and exploration of the purpose and effects of the reefs.

5. Reasons for assistance from UNDP/UNIDO/FAO

A reef construction project, requiring as it does, some expert supervision, a transport vehicle and work boat, is best tackled on a national basis. The Government must contribute support staff, legal permission and supplies of raw materials. The fishermen will supply on-site labour and assistance at nominal cost or on a food-for-work basis. UNDP support is requested to supply the team leader, the vehicle and boat, and some operating expenses.

6. Special Considerations

Designs of artificial reefs are available and FAO is able to provide copies of related documents and general guidance through the office of the FAO Representative.

7. Co-ordination arrangements

The project funds will be handled by the representative of FAO, UNDP or UNIDO. Expenditures will be agreed upon with the Team Leader and the Department of Fisheries in accordance with the

terms of the project document. The Representative, the Team Leader, and the Director of Fisheries will meet regularly, to review progress and to co-ordinate activities.

8. Counterpart support capacity

The fisheries department should allocate a full-time counterpart to the project plus, as necessary, officers who speak the language of the target fishing communities, officers trained in marine biology and officers who would subsequently construct or monitor artificial reefs after the project is complete.

PART C DEVELOPMENT OBJECTIVE

The main development objective is the wise management and conservation of the coastal fishery resources of Sierra Leone.

A secondary development objective is improved long term fish production by the artisanal fleet, resulting in better incomes for fishing communities and increased supplies of fish protein for domestic consumers.

PART D IMMEDIATE OBJECTIVES, OUTPUTS AND ACTIVITIES

1 Immediate Objective 1

The protection and enhancement of the coastal fishing grounds of Sierra Leone.

1.1 Output 1

20 artificial reefs established in selected strategic locations on coastal fishing grounds.

Activities for output 1		To be completed by	Responsible project staff
1.1.1	Purchase and delivery of truck and workboat	month 1 - 6	UN Agency Representative
1.1.2	Accumulation of reef materials	month 6 - 12	Team Leader
1.1.3	Discussion and selection of sites with local fishermen and government authorities	month 6 - 18	Team Leader and colleagues
1.1.4	Construction of reefs	month 12 - 30	Team Leader and colleagues

1.2 Output 2

60 sea-bed trawling obstacles constructed and planted in strategic locations around the artificial reefs.

Activities for output 2		To be completed by	Responsible project staff
1.2.1	Accumulation of scrap iron, chain, oil drums, rocks and cement	month 6 - 18	Team Leader
1.2.2	Construction of obstacles	month 12 - 24	Team Leader and colleagues
1.2.3	Positioning of obstacles in consultation with local fishermen	month 18 - 30	Team Leader and colleagues

PART E INPUTS

a. Government Inputs

National Staff:

Counterpart Project Officer	36 months
Fishermen liaison officers 4 x 6	24 months
Reef construction and monitoring officers 4 x 6	24 months
TOTAL	84 months

Other national inputs:

Provision of reef materials, rock, sand for concrete blocks, coconut palm logs, scrap iron

VALUE IN KIND 80,000 dalasis

b. UNDP/UNIDO/FAO Inputs

International staff:

Post: 1101 Title: Team Leader (UNV) Total m/m: 28

Required actual date: month 6

Sub Contracts: nil

Training: conducted on site

Equipment and Supplies:

One 5 ton truck	month 6
One 9 metre workboat	month 8
diving equipment	month 10
anchors, chain, shackles, hardware	month 10
cement, ropes, netting and building materials	month 10

PART F RISKS

There are possibly two risks facing the project, and both are of a minor nature. The first concerns the nature and quantity of materials that the project will be able to accumulate for each reef. This will vary depending on what is available, but may include old car bodies, rocks, pieces of wreckage, old car tyres, oil drums, coconut palm logs and so on. Each reef will have to be designed with the materials at hand. Hollow concrete blocks and short pieces of piping will be assembled on site to form habitats for lobsters, octopus, eels and reef fish. In some cases, pieces of scrap may have to be welded together to form the central core of the reef.

A second risk concerns the fishing communities who must understand the concept and agree to its implementation. No reef should be constructed without the approval and support of the fishermen leaders. This may delay work at some sites but it is not expected to be a major problem. While the fishermen may not grasp the ecological significance immediately, they will readily appreciate the advantage of having some obstacles to bottom trawling in their area.

PART G PRIOR OBLIGATIONS AND PREREQUISITES

a. Prior Obligations

The Project Document will be signed by UNDP, and UNDP assistance to the project will be provided only if the prior obligations stipulated above have been met to UNDP s satisfaction.

b. Prerequisites

The Project Document will be signed by UNDP, and UNDP assistance to the project will be provided, subject to UNDP receiving satisfaction that the prerequisites listed above have been fulfilled, or are likely to be fulfilled. When anticipated fulfillment of one or more prerequisites fails to materialize, UNDP may, at its descretion, either suspend or terminate its assistance.

PART H PROJECT REVIEWS, REPORTING AND EVALUATION

a. The project will be subject to tripartite review (joint review by representatives of the government, executing agency and UNDP) at least once every 12 months, the first such meeting to be held within the first 12 months of the start of full implementation. The national project co-ordinator and/or senior project officer of the United Nations executing agency shall prepare and submit to the UNDP Field Performance Evaluation Report (FPER). Additional FPERs may be requested, if necessary, during the project.

b. A project terminal report will be prepared for consideration at the terminal tripartite review meeting. It shall be prepared in draft sufficiently in advance to allow review and technical clearance by the executing agency at least four months prior to the terminal tripartite review.

c. The project shall be subject to evaluation months after the start of full implementation. The organisation, terms of reference and timing will be decided after consultation between the parties involved in the project.

PART I LEGAL CONTEXT

This Project Document shall be the instrument referred to as such in Article I of the Standard Basic Assistance Agreement between the Government of Sierra Leone and the United Nations Development Programme, signed by the Parties on 21 December 1977.

The Host Country Implementing Agency shall, for the purpose of the Standard Basic Assistance Agreement, refer to the Government Co-operation Agency described in that Agreement.

The following types of revisions may be made to this project document with the signature of the UNDP resident representative only, provided he or she is assured that the other signatories of the project document have no objections to the proposed changes:

a. Revisions in, or addition of, any of the annexes of the project document with the exception of the Standard Legal Text for non-SBAA countries which may not be altered and the agreement to which is a pre-condition for UNDP assistance). (This language is to be added in those cases where the host country has not signed the SBAA);

b. Revisions which do not involve significant changes in the immediate objectives, outputs or activities of a project, but are caused by the rearrangement of inputs agreed to or by cost increases due to inflation; and

c. Mandatory annual revisions which rephase the delivery of agreed project inputs or increased expert or other costs due to inflation or take into account agency expenditure flexibility.

PART J BUDGETS

	Total m/m	Total $	Year 1 m/m	Year 1 $	Year 2 m/m	Year 2 $	Year 3 m/m	Year 3 $
International Experts								
1101 Team Leader UNV or SSA	28	28000	6	6000	12	12000	10	10000
1199 Total		28000		6000		12000		10000
Admin & Support Personnel								
1300 Driver and Boat Crew		7000	18	1300	36	2800	36	2900
UN Volunteers								
1401 see 1101 above								
1500 Project Travel		3000		600		1200		1200
1999 Total Personnel Component		38000		7900		16000		14100
Equipment								
4100 Expendable Equipment		13000		2000		6000		5000
4200 Non-Expendable Equipment		65000		65000				
Total Equipment Component		78000		67000		6000		5000
Miscellaneous								
5100 Sundries		4000				2000		2000
Maintenance		4000		1000		1500		1500
Food for work		12000		2000		5000		5000
5999 Total Misc. Component		20000		3000		8500		8500
9999 PROJECT TOTAL		136,000		77,900		30,500		27,600

E. Galama/mz
17 October 1989

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

(IDF/Denmark?)

D r a f t

Project Document

Title: Pre-feasibility studies for fish industry terminal and -complex in Freetown

Number: US/SIL/89/xxx Country: Sierra Leone

Total UNIDO budget: US$ 212,800
(excluding support cost)

Estimated starting date: January 1990 Planned duration: 10 months

Backstopping branch: Feasibility Studies Branch (PE-code: J14101)
in cooperation with PDSU and IO/T

Government Implementing Agency: Ministry of Agriculture, Natural Resources and Forestry (MANRF)

Official Request: Letter from MANRF Date: 23 June 1989

Endorsement by UNDP: Letter from ResRep Date: 19 July 1989

I. BACKGROUND AND JUSTIFICATION

(a) Background

Agriculture remains the mainstay of most of the population, contributing about 40 percent of GDP and employing around 65 percent of the labor force. The present Government has announced in December 1986 a "green revolution" programme, aiming to achieve food self-sufficiency within three years, and costing US$ 200 mln, with virtually all funding coming from external sources. UNDP, FAO and World Bank have already started some of the projects under this programme.

Sierra Leone's Atlantic coastline should be capable of supporting a quite substantial fishing industry, but development of the sector has so far been disappointing. The largest fishing company is Sierra Fisheries, formerly owned by the prominent Local businessman, Jamil Said Mohammed. Its fleet of 28 vessels, including 15 shrimpers, provides the local market through a series of retail outlets. The country's fish stocks have also been exploited by foreign vessels operating under licence and by poachers. Sierra Leone has no effective navy and its territorial waters are almost impossible to police.

The pressure on the government to maximise foreign exchange receipts has resulted in changes in the organization of the sector. In the 1987 budget it was announced that the entire fleet of Sierra fisheries and all foreign vessels had been anchored for inspection by the authorities to establish their capacity and agree on licences, royalties and foreign exchange surrender obligations. In January 1988 the Government passed a Fishing Management and Development Act, which gave it exclusive management control over the country's fishing zones. With provisions for hefty fines on offenders and the seizure of fishing vessels and gear, the act is intended to put a stop to unauthorized fishing, but lack of effective policing means that poaching continues unabated. A recent survey by domestic and Soviet fishing experts revealed that up to 2,500 kg of fish can be caught every 30 minutes in Sierra Leone's territorial waters, the main concentration being the shallow coastal waters. The potential is attracting the poachers, together with the knowledge that the government is unable to patrol its coastal waters effectively.

There is now a growing concern that the waters are already being overfished illegally by foreign companies. The USSR is said to have 30 trawlers, fishing under an agreement signed in 1976, but many foreign companies are known to be operating. The local company, Sierra Fishing Company, based at Kissy dockyard in Freetown, is the country's major supplier of fish and is well placed to take full advantage of the country's fishing potential. Conservationists are quick to point out the dangers of overfishing for the long term future of the industry, however, there is mounting pressure on the government to address more seriously the issue of poaching.

(b) Justification

Sierra Leone has one of the richest marine fishing reserves in all of West Africa. The estimated sustainable yield is over 300,000 tons per annum worth over 200 mln US dollars. At present some 80 percent of the potential is being harvested, mainly by foreign fishing fleet. National regulations require that the foreign caught fish be transshipped in Freetown, but as there are no transshipment facilities, this can not be reinforced. 150 - 200 fishing vessels are licenced to fish in Sierra Leone waters, but there is a considerable amount of illegal fishing also. This cannot be controlled at present by the Government, which does not have a monitoring, control and surveillance services.

The marine resource is made up of four major groups of species: sardines, tunas, demersal species and shellfish. The sardines and mackerels are most plentiful and are caught by mid- water trawls and purse seines. Several deep sea longline vessels are licensed to fish for tuna, but there are also some illegal tuna seiners operating in the area. Demersal fish include snappers, bream, grouper, sole, threadfin and ray. Shrimp are the main shellfish group but there are also fair quantities of lob-ster, crab and molluc. In addition to the four main groups there are some large pelagics like baracuda and celaphods, chiefly squid.

Government policy is to maximise foreign currency earnings and to supplement the national fish food supply from the offshore fishery. At present the country is getting very little of either. This is due to poor management and lack of facilities. Poor management of the fishery has been a continuing problem for the Government but in recent years it has started to address the problem and the President has now declared offshore fisheries development to be the priority area. In theory, foreign vessels should pay a substantial fee for a licence to fish. But in practice, fleet owners and their Governments negotiate for concessions and reduced rates on the promise of other benefits in trade or aid. The large Soviet fleet for instance, pays its royalties in kind with 15 percent of their total catch. Also the Government has no fishery protection fleet or surveillance aircraft and it can never be sure how many vessels and/or which types are prosecuting the fishery. There is no full time trained fishery inspection service, even if vessels and aircraft were available. So in practice very little is presently being obtained from offshore fishery licenses.

In July 1989 a UNIDO/FAO mission was undertaken to formulate a programme for technical assistance to the fishery industry. They identified that in order to enable the Government to maximise the benefits of the fishery resources in terms of foreign exchange and exports, protein food and employment the following facilities should be developed:

1. Monitoring control and surveillance (MCS) of Sierra Leone fishing waters;
2. Transshipment terminal and bunkering pier; dry dock and vessel hoist, wooden boat yard with sawmill and ship chandlery store; fresh fish inshore/offshore fleet;
3. Ice plant and cold stores;
4. Artisanal fish meal production unit.

ad 1)

Monitoring control and surveillance of Sierra Leone fishing waters

Like most other maritime nations, Sierra Leone has a 200 mile EEZ or exclusive economic zone within which foreign vessels may fish only under license. By international convention, foreign fishing vessels have to be clearly marked so as to be individually identifiable. They have to be willing to submit to boarding and inspection by officers of the country in whose zone they are operating. As in the case of Sierra Leone a royalty may be payable on all fish taken, in addition to the license fee.

To police and enforce such a fishing zone regime, necessitates the use of surveillance aircraft. Vessel patrols are much less effective due to their slow speed though a patrol vessel is essential if boarding and at-sea inspection is to be carried out. While sea patrols can intensify policing and carry out arrests, they may not be so vital to an MCS service. The reason is that air surveillance can identify vessels in breach of regulations, and by submitting photographic and navigational evidence, can charge the owners or operators through international courts. Normally political pressure and publicity is sufficient to bring offenders into line without the need to arrest the vessel at sea (which is a difficult action in any case, even with a fast patrol vessel).

It is proposed that as part of the package for the fishery industry a twin engine surveillance aircraft with photographic and navigational equipment be provided, as well as a fast ocean going patrol boat. The aircraft would be maintained and operated by a professional group on contract to the fish terminal enterprise. Government security and fisheries personnel would be in complete charge of the surveillance programme and would designate officers to accompany every flight. An MCS advisor would be supplied initially to train observers in vessel identification, in patrol planning and in the procedures for dealing with violations by foreign vessels.

It is expected that the investment costs and operational costs could easily be covered by increased income from licenses and royalties as well as the fines to offenders of the law. The patroille services have also been discussed with Mano River Union (MRU), which represents the common interests of Liberia, Guinea Conakry and Sierra Leone. The MRU is very keen to share in the aerial surveillance of fishing waters if the patrols could be extended to Guinean and Liberian waters. Financially this would make the surveillance more attractive, because of cost sharing.

ad 2)

Transshipment terminal and bunkering pier, dry dock and vessel hoist, wooden boat yard with saw mill and ship chandlery store, fresh fish inshore/offshore fleet

The proposal centres on the construction of a fish terminal and pier and the development of their facilities for processing, transshipping and storage of fish, and for repair, maintenance and bunkering of vessels. The best available site for the terminal is at Kissy Bay where Sierra Leone Fisheries Company is located and there is a large fuel depot. The area was surveyed by FAO in 1978 and the survey report is still largely valid. The terminal should be constructed by the Government and could be leased to the users. These facilities are urgently needed because, although the Fishing Management and Development Act regulates that all the fish should be transshipped in Sierra Leone. It is at present not possible to enforce this Act due to lack of facilities in the country.

Presently some 70 national vessels operate from local companies like the Sierra Fishing Company and Okeke Enterprises. All these companies suffer from the lack of repair and maintenance facilities and adequate landing/bunkering facilities. Furthermore there is a need to improve and increase the national fleet in order to prosecute the offshore fishery. The fresh fish middle distance fleet of vessels wood be simple wooden decked boats capable of staying at sea for 3 to 5 days. It would be the natural step up in progression from the planked motorised canoe. UNIDO has developed various designs for modern wooden boats, being built according new technologies, and presently being used in Indonesia.

The leap to an offshore sophisticated freezer vessel is a colossal one in terms of both costs and technology. At present there is a lack of boatyards to produce the middle distance vessels. The vessels will be around 20 metres length with 240 hp. engine with winch and echo sounder, radiotelephone and insulated fish hold. The vessels would be fitted out for pair trawling, ring net fishing and other multi-purpose activities. The weekly catchery would average 15 tons with vessel capacity of 25 tons and 10 crew members: captain, engineer, mate and deckhands. The saw mill is supposed to produce plywood and other wood products for the wooden boats. It could also produce wood products for other sectors. The shipchandlery could supply spares and other supplies for the fishfleet.

ad 3)

Ice plant and cold storage

The facilities in the port should include cold storage facilities to store the fresh fish before processing or transshipment. The production of large quantities of ice would enable the development of a fleet of wet fish or fresh trawlers and seiners. At present this is only available within small companies for their own vessels. Having the freezing facilities on board would increase too much the costs.

ad 4)

Artisanal fish meal production unit

Sierra Leone chicken farms and cattle farms are in constant need of protein meal to enhance the diet of their animals. The country has no fish meal production to meet this need although many tons of fish offal and shrimp heads are dumped by plants in Freetown. The new and growing fish culture industry will soon require protein fish feed if it is to profit from high value species.

There was an earlier attempt to establish a fish meal industry. It failed largely because it was based on large plant technology which is energy expensive and which requires a constant supply of large quantities of raw materials to be economic. While there are fair volumes of fish offal produced in Freetown they are not sufficient to supply a convential reduction plant. Also both electricity and diesel fuel are in short supply or expensive.

It is proposed to produce fish meal and feed pellets by a labour intensive and energy cheap method. Fish offal would be delivered on site where it would first be chopped small then passed slowly through a solar drier/cooker, then ground in hand operated mincing machines. During rainy periods the material would be mixed with rice bran, leaves and other agro-waste to form suitable feed pellets. The whole venture should employ about 50 persons, mostly women, and depending on supplies, produce about ten to fourty tons of meal a month. It would be best operated as a subsidary to the main fish terminal enterprise, but located elsewhere, possibly beside the boat construction yard.

With all the above mentioned facilities Government foreign exchange earnings from the offshore fishery would increase by serveral million dollars; furthermore local fish supplies would be augmented, hunderds of additional fishery related jobs would be created and the artisanal fleet would have the opportunity to exploit the near offshore waters. All of the facilities could be provided under the proposed investment project, which would be managed professionally by a commercial group or terms to be agreed with the Government at a national fishery industry policy and strategy workshop which is being arranged with support from FAO after the pre-feasibility studies have been finished. It is foreseen that half of the total investment costs is paid by the Government and the other half by private companies. The Government earnings would come from increased royalties and fines on foreign fishing fleets, tarriffs on transshipped fish and on rent to the terminal, dock dues and taxes. The private sector would get its revenues from sale of ice and cold storage space, increased processing and sale of fish, docking, repair and bunkering of vessels, construction of wooden boats and production of fish meal. Provisional contacts with private developers, merchant banks and fishing groups have indicated serious interest. The key to further action is the policy meeting and the outcome of the pre-feasibility studies.

II. THE PROJECT

(a) Project objective

(i) To increase the foreign exchange earnings, augment the local fish supplies, create employment in fishery related sector through the promotion of investments in the fishery industry. This should be done by analysis of the establishment of a fish industry terminal and complex in Freetown and preparation of four feasibility studies for the different facilities in the fishery complex;

(ii) to enable the Government and entreprises to decide on investments in specific facilities of the fish industry terminal and complex.

(b) Output

A minimum of four pre-feasibility studies for the following facilities of the fish industry terminal and complex:

1. Monitoring control and surveillance of Sierra Leone fishing waters;
2. Transshipment terminal and bunkering pier; dry dock and vessel hoist, wooden boat yard with sawmill and ship chandlery store; fresh fish inshore/offshore fleet;
3. Ice plant and cold stores;
4. Artisanal fish meal production unit.

(c) Activities

The project will be implemented by a consulting company assisted by local government officials and eventually staff from entreprises. For each of the pre-feasibility studies the consulting company will undertake the activities specified in the attached terms of references. It will collect in the field information and data on economic, financial and technical aspects as necessary in order to prepare the four pre-feasibility studies in accordance with UNIDO's "Manual for the Preparation of Industrial Feasibility Studies". Allthough four pre-feasibility studies are to be made, they have to be made as a package for an intergrated investment proposal and thus an evaluation should be made for all 4 pre-feasibility studies together. The reports should be presented at a Seminar on Sierra Leone's Fishery Industrial Development Strategy which is going to be organized separately from this project by FAO.

(d) Inputs

(i) Government inputs

- assignment of at least five national staff or representatives of potential investors to cooperate with the subcontractor in implementing the project;

- provide office accomodation to the consultants in Freetown, together with local transport and office supplies and equipment required in the carrying out of the functions of the subcontractor;
- provide data relevant to the project as required by the subcontractors.

(ii) UNIDO inputs

		US$
16-00	staff member of FEAS Branch and PDSU to discuss project proposal in the field and attend two weeks seminar organized by FAO and Sierra Leone's Fishery Industrial Development Strategy.	9,800
21-00	subcontracter to prepare at least four pre-feasibility studies and make overall evaluation and recommendations for follow-up investment. The sub-contractor should also attend the follow-up seminar	200,000
51-00	Sundries	3,000
	Total:	212,800

III. REPORTING AND EVALUATION REQUIREMENTS, EXPECTED FOLLOW-UP

The subcontractor will prepare a report including the four pre-feasibility studies and according schedule as mentioned in the terms of references. This report will be used as an input to the Seminar on Sierra Leone's Fishery Industrial Development Strategy, which is going to be organized and funded by FAO.

INVESTMENT PROPOSAL

SIERRA LEONE

FISHERY INDUSTRY TERMINAL AND COMPLEX

TOTAL **$18,000,000**

DEVELOPMENT OF SIERRA LEONE'S OFFSHORE FISHING INDUSTRY

Sierra Leone has one of the richest marine fishing zones in all of West Africa. The estimated sustainable yield is over 300,000 tons per annum worth over 200 million dollars. At present some 60 per cent of the resource is being harvested, chiefly by foreign fishing fleets. National regulations require that foreign caught fish be trans-shipped in Freetown but as there are no trans-shipment facilities, this can not be enforced. Some 150 - 200 foreign vessels are licensed to fish in Sierra Leone waters but there is a considerable amount of illegal fishing also. This cannot be controlled at present as the Government does not have a monitoring, control and surveillance service.

The marine resource is made up of four major groups of species - sardines, tunas, demersal species and shellfish. The sardines and mackerels are most plentiful and are caught by midwater trawls and purse seines. Several deep sea longline vessels are licensed to fish for tuna but there are also some illegal tuna seiners operating in the area. Demersal fish include snappers, bream, grouper, sole, threadfin and ray. Shrimp are the main shellfish group but there are also fair quantities of lobster, crab and molluscs. In addition to the four main groups there are some large pelagics like barracuda and celaphods, chiefly squid.

Government policy is to maximise foreign currency earnings and to supplement the national fish food supply from the offshore fishery. At present the country is getting very little of either. This is due to poor management and lack of facilities.

Poor management of the fishery has been a continuing problem for the government but in recent years it has started to address the problem and the President has now declared offshore fisheries development to be a priority area. In theory, foreign vessels should pay a substantial fee for a license to fish. A fee of $30,000 would yield some $4,500,000 in foreign currency each year from 150 vessels. But in practice, fleet owners and their governments negotiate for concessions and reduced rates on the promise of other benefits in trade or aid. The large Soviet fleet for instance, pays its royalties in kind with 15% of their total catch. Also the government has no fishery protection fleet or surviellance aircraft and it can never be sure how many vessels and/or which types are prosecuting the fishery. There is no full time trained fishery inspection service, even if vessels and aircraft were available. So in practice very little is presently being obtained from offshore fishery licenses.

Lack of facilities prevents the country from benefiting from two other sources of income from offshore fishing, - trans-shipment and repair or bunkering. By law all foreign caught fish should be trans-shipped in Freetown but as no facilities exist this cannot be insisted on. If facilities did exist, an export tarriff of say $30 a ton would yeild $2,400,000 a year off the 80,000 plus tons currently being caught by foreign vessels. To this could be added a similar amount for handling charges.

The docking, repair and bunkering of 150 ships could, if facilities were established, yeild some one or two millions in revenue plus employment for hundreds of Sierra Leoneans.

So there is a potential foreign currency revenue of around ten million dollars a year available to Sierra Leone if proper management and adequate facilities were to be provided.

The measures would also serve to benefit the national offshore fishing fleet. Some 70 vessels operate from local companies like the Sierra Fishing Company and Okeke Enterprises. All of these companies suffer from the lack of repair and maintenance facilities and adequate landing/bunkering facilities.
In addition, at sea they face competition from unlicensed foreign vessels taking advantage of the lack of a protection service.

An additional benefit would be coservation of the marine resource. The government could, given good management, know how much of each species was being harvested, know when catches were declining, and be in a position to implement measures to prevent over-fishing of particular stocks.

The following proposal then is designed to meet the need for effective management offshore, comprehensive services and facilities on land, and control of both fishing fleets and fish exports to yeild the maximum foreign currency earnings for the government and the industry, plus substantial employment for local people and increased supply of fish protein for the population.

The proposal centres on construction of a fish terminal and pier and the development there of facilities for processing, trans-shipping and storage of fish, and for repair, maintenance and bunkering of vessels. The best available site for the terminal is at Kissy Bay where Sierra Fisheries Company is located and there is a large fuel depot. Land for the facilities would have tc be reclaimed from a large shallow area (up to 2 metres) by the shore and a long landing and bunkering pier would be required, extending outwards.

The area was surveyed by FAO in 1978 when a similar development was proposed and the survey report is still largely valid. The Sierra Company access road could be extended to the new site. Ample fresh water supplies are available as is electricity, but owing to fluctuations in the city supply the project should have its own generators. Water depth at the far end of the pier would be sufficient for the largest offshore trawlers or seiners.

The commercial facilities which could be established in stages would comprise:-

a fish processing plant, 20 - 100 tons per day capacity
an ice plant and store, 50 - 100 tons per day, 500 tons storage
cold storage facilities for 2,000 - 6,000 tons fish
fork lift trucks, discharging cranes and conveyors.

A dry dock for vessels of 40 to 75 metres
A six cradle synchro - lift for vessels up to 35 metres
A marine repair and maintenance workshop
A ship chandlery store
A fourth berth vessel bunkering station.

The pier, fish terminal, access road and bare buildings would cost in the region of 6 to 8 million dollars. For reasons which will be explained below, a sum of 0.5 to 1.0 million dollars should be added to this to finance the initial 2 - 3 years operation of aerial surveillance of offshore fishing fleets.

Commercial facilties will cost a further 5 or 6 million dollars and will require about a million dollars operating capital initially. Depending on volume of business they would provide employment for several hundred Sierra Leoneans.

Sierra Leone has no foreign currency reserves and is not presently in a position to do business with the World Bank. It is therefore proposed that the whole venture be financed externally from commercial sources and that both construction and operation (for 5 years or more) be part of a turnkey project.

The venture should also finance the purchase of a twin engine surveillance aircraft to be operated under contract by a commercial group with government MCS fishery officers in technical charge.

Revenue would accrue to the government from six or more sources, all of it in foreign currency. The largest single earner would be improved returns from license fees and fines for illegal fishing. Part of this should ultimately be used to finance the surveillance service but initially this would be undertaken by

the project. The enterprise would pay an annual rent for the facility and this could go directly towards amortisation of the capital debt. Further revenues would be realised from a tarriff on trans-shipped fish, from a tax on the enterprise, from port charges on visiting vessels, and from the profits on the sale of fuel oil, stores and water.

The Government income then could rise to the following annual figures depending on volume of business:

	Million Dollars		
Fishing licenses, royalties and fines	4.0	-	5.0
Rent of fish terminal and pier	1.0	-	2.0
Tarriff on trans-shipped fish	0.7	-	2.3
Tax on enterprise	0.3	-	0.7
Port charges on vessels	0.25	-	0.75
Profits on sale of fuel oil, food etc.	0.75	-	1.25
Total possible foreign exchange earnings to government	7.0	-	12.0

A further source of income, this in local currency would be from fish landed for local consumption as part of the licensing and joint venture agreements. Landings of say 400 tons per month would realise around 8 million Leones at current rates.

The enterprise, by providing processing facilities and large quantities of ice, would make possible the development of a fleet of wet fish or fresh trawlers and seiners. This is not feasible at present as neither ice nor processing facilities are available except within small companies, for their own vessels. Practically all trawlers therefore have to be equipped with freezing facilities, adding greatly to their cost. Wet fish vessels operating shorter trips would be less sophisticated craft and more within the financial reach of local entrepreneurs.

If deemed useful, in addition to supporting the air patrols of fishing fleets, the enterprise could maintain and operate a fast deep sea patrol boat under the direction of Sierra Leone fishery officers. But this would double the surveillance costs.

The enterprise itself would earn money from repair of vessels, sale of ice and gear, and from trans-shipment services. But the largest single earner would be fish processing. In order to ensure supplies, the enterprise should be allowed to operate some fresh fish vessels. Without that activity, it is doubtful if

the venture could be commercially viable. When fully operational, the enterprise costs and earnings might be in the region of:

COSTS	(IN MILLION $)	EARNINGS	
Capital repayments & interest charges	1.5	Processing & sales of pelagics	1.9
Fuel oil	1.4	Processing & sales demersal & shellfish	1.9
Pier and terminal rentals	1.3	Transshipment services	0.8
Local labour costs	1.2	Boatyard vessel sales	0.75
Materials and supplies	0.8	Ship chandlery & spares	0.65
Management	0.7	Cold storage	0.6
Boatyard expenses	0.6	Vessel repairs	0.6
Spare parts	0.5	Fresh fish catch demersal & shellfish	0.5
Freon gas,oils and chemicals	0.4	Fresh fish catch pelagic	0.5
Maintenance	0.4	Vessel docking	0.4
Taxes	0.3	Fish meal sales	0.4
Water dues	0.1	Ice sales	0.3
Est. Total	$9.2m	Est. Total	$9.5m

The above is only a rough calculation to be used as a guide. The government should note that many of the enterprise activities are of a marginal nature but are essential components of the total package. No company should be granted the lease which did not agree to provide the whole range of services.

DEVELOPMENT OF A NATIONAL FRESH FISH MIDDLE DISTANCE FLEET

If Sierra Leone is eventually to prosecute the offshore fishery with a truly national fleet, then it must start to develop this expertise among its own fishermen and boatowners. One obvious first step would be the establishment of a fresh fish middle distance fleet of vessels. These would be simple wooden decked boats capable of staying at sea for 3 to 5 days. It would be the natural step up in progression from the planked motorised canoe. The leap to an offshore sophisticated freezer vessel is a colossal one in terms of both costs and technology.

There are two very obvious constraints to the development. One is the lack of ice and on-shore processing facilities, and the other is the lack of boatyards to produce the middle distance vessels.

The fish port venture as described would have the capability of supplying ice and processing fish on-shore for a fresh fish fleet. It is proposed that the venture also establish a boatyard nearby and begin to construct vessels of around 20 metres length 240 h.p. at the rate of 2 or 3 a year.

The vessels could be leased initially to local fishermen to work under supervision for the first year or two. Money earned during this period could form part payment for the vessels which would eventually be owned by the fishermen. In this way a cadre of inshore/offshore fishermen and boatowners would be developed and these ultimately might progress to still larger vessels to prosecute offshore waters.

The boatyard, with a small sawmill facility would provide employment and train local shipwrights and marine engineers.

Specification of the wet fish vessels would be approximately:
20 x 6.3 x 2 metres 240 bhp with winch and echo sounder radio telephone and insulated fish hold
The vessels would be fitted out for pair trawling, ring net fishing and other multi-purpose activities.

Approximate capital and operational costs.

Vessel hull		$130,000
Engine and winch		$110,000
Echo sounder and radio telephone vhf		$ 5,000
Fishing gear and rigging		$ 35,000
	Total	$280,000

Annual operating costs

15,000 gallons fuel		$ 30,000
200 tons ice		$ 8,000
gear and spares		$ 20,000
port dues		$ 5,000
overhaul		$ 15,000
crew share		$ 32,000
lease or loan repayment		$120,000
	Total	$230,000

Annual fish production

400 tons sardines/mackerels		$100,000
220 tons demersal species		$110,000
50 tons squid/shellfish		$ 50,000
by catch trash fish		$ 30,000
	Total	$290,000

Weekly catches average 15 tons
Vessel capacity 25 tons
Crew: Captain, Engineer, Mate and 7 Deckhands.

Wooden vessel Boatyard, cost and earnings:

Generators, power saws, planers, lathe and drills		$250,000
Hydraulic cranes, fork lift, steam box, tools		$ 50,000
Wood store, workshop store, workshop and office		$ 70,000
Construction cradles and approach road		$ 30,000
	Total	$400,000

Annual operating costs (3 vessel production)

Timber		$ 90,000
Nails and fastenings		$ 30,000
Vessel machineries and gear		$270,000
Fuel oil		$ 50,000
Maintenance		$ 15,000
Management		$ 35,000
Labour		$ 50,000
Capital repayment		$160,000
	Total	$700,000

Earnings

Sale of 3 vessels, complete	Total	$740,000

SIERRA LEONE
FISH MEAL AND FISH FEED PELLET PRODUCTION

Sierra Leone chicken farms and cattle farms are in constant need of protein meal to enhance the diet of their animals. The country has no fish meal production to meet this need although many tons of fish offal and shrimp heads are dumped by plants in Freetown. The new and growing fish culture industry will soon require protein fish feeds if it is to profit from high value species.

There was an earlier attempt to establish a fish meal industry. It failed largely because it was based on large plant technology which is energy expensive and which requires a constant supply of large quantities of raw material to be economic. While there are fair volumes of fish offal produced in Freetown they are not sufficient to supply a conventional reduction plant. Also both electricity and diesel fuel are in short supply or expensive.

It is proposed to produce fish meal and feed pellets by a labour intensive and energy cheap method. Fish offal would be delivered on site where it would first be chopped small then passed slowly through a solar drier/cooker, then ground in hand operated mincing machines. During rainy periods the material would be mixed with rice bran, leaves and other agro-waste to form suitable feed pellets.

The whole venture should employ about 50 persons, mostly women, and depending on supplies, produce about ten to forty tons of meal a month. It would be best operated as a subsiduary to the main fish terminal enterprise, but located elsewhere, possibly beside the boat constrction yard.

Artisanal production of feed meals from fish waste

Capital costs

Land preparation		$ 30,000
Building and store		$ 70,000
Solar driers and cookers		$ 40,000
Crushers, mixers, grinders		$ 25,000
Racks and containers		$ 15,000
	Total	$180,000

Operational costs

Transport and cost of raw material		$ 50,000
Labour and management		$120,000
Fuel and maintenance		$ 10,000
Additives and packaging		$ 8,000
Land rental		$ 12,000
	Total	$200,000

Revenues

20 tons of fish pellets at 1,750		$ 35.000
480 tons of meal at 750		$360,000
	Total	$395,000

MONITORING CONTROL AND SURVEILLANCE OF SIERRA LEONE FISHING WATERS

Like most other maritime nations, Sierra Leone has a 200 mile EEZ or exclusive economic zone within which foreign vessels may fish only under license. By international convention, foreign fishing vessels have to be clearly marked so as to be individually identifiable. They have to be willing to submit to boarding and inspection by officers of the country in whose zone they are operating. As in the case of Sierra Leone a royalty may be payable on all fish taken, in addition to the license fee.

To police and enforce such a fishing zone regime, necessitates the use of surveillance aircraft. Vessel patrols are much less effective due to their slow speed though a patrol vessel is essential if boarding and at-sea inspection is to be carried out. While sea patrols can intensify policing and carry out arrests, they may not be so vital to an MCS service. The reason is that air surveillance can identify vessels in breach of regulations, and by submitting photographic and navigational evidence, can

change the owners or operators through international courts. Normally political pressure and publicity is sufficient to bring offenders into line without the need to arrest the vessel at sea (which is a difficult action in any case, even with a fast patrol vessel).

It is proposed that as part of the financial package for the fish terminal, money be provided to purchase a twin engine surveillance aircraft with photographic and navigational equipment. The aircraft would be maintained and operated by a professional group on contract to the fish terminal enterprise. Government security and fisheries personnel would be in complete charge of the surveillance programme and would designate officers to accompany every flight. An MCS advisor would be supplied initially to train observers in vessel identification, in patrol planning and in the procedures for dealing with violations by foreign vessels.

As a second option, a fast ocean going patrol boat could also be supplied. Whether this option is taken up might depend on an analysis of cost/benefits and whether it might also be financed together with the fish terminal loan.

Option one:

A twin engine surveillance aircraft	$500,000	
Photographic and navigational equipment	$ 60,000	
Operation for 1,000 hours/year at $200 per hour	$200,000	per annum
Management, maintenance and professional support	$ 60,000	per annum
Cost of three years operation	$780,000	
Plus capital cost	$560,000	
Total	$1,340,000	

Option two:

Additional: one fast ocean going patrol vessel, approx. 22 x 6 x 1.5 2 x 250 hp	$650,000	
Operation for 220 days/year	$ 75,000	
Management maintenance and professional support	$ 75,000	
Cost of three years operation	$450,000	
Plus capital cost	$650,000	
Total	$1,100,000	
Total, options 1 and 2	$2,440,000	

N.B. The total capital cost plus three years operational costs

including technical assistance amount to only one half of one year's potential income from licenses and royalties alone. Also, one successful arrest per year could meet the annual capital repayment of both the vessel and the aircraft.

There is a third possibility which would reduce the aerial surveillance costs by about half and also subsidise the capital repayments or interest charges for the aircraft.

The Mano River Union which represents the common interests of Liberia, Guinea Conakry and Sierra Leone is very keen to share in the aerial surveillance of fishing waters if the patrols could be extended to Guinean and Liberian waters.

If for example, of 4 patrol days per week, one was allocated to Liberia, one to Guinea and two to Sierra Leone, then the neighbouring countries might avail themselves of the service for a modest cost-only charge. National officers from the other states would accompany the aircraft crew on flights over their waters and could also be assisted by the T.A. professional advisors.

At the most, the cost of service for one day a week, to Liberia and to Guinea would be $65,000 per year for operational costs and $28,000 for a share of capital repayments and interest charges. This would total $93,000 each per year, - a remarkably low fee for such a service. Even one successful arrest per year would more than meet the cost.

The idea has been discussed with MRU officials at their office in Freetown. It was warmly received and the Union wishes to pursue the possibility in depth at the policy and planning conference for fisheries to be held in Freetown later this year.

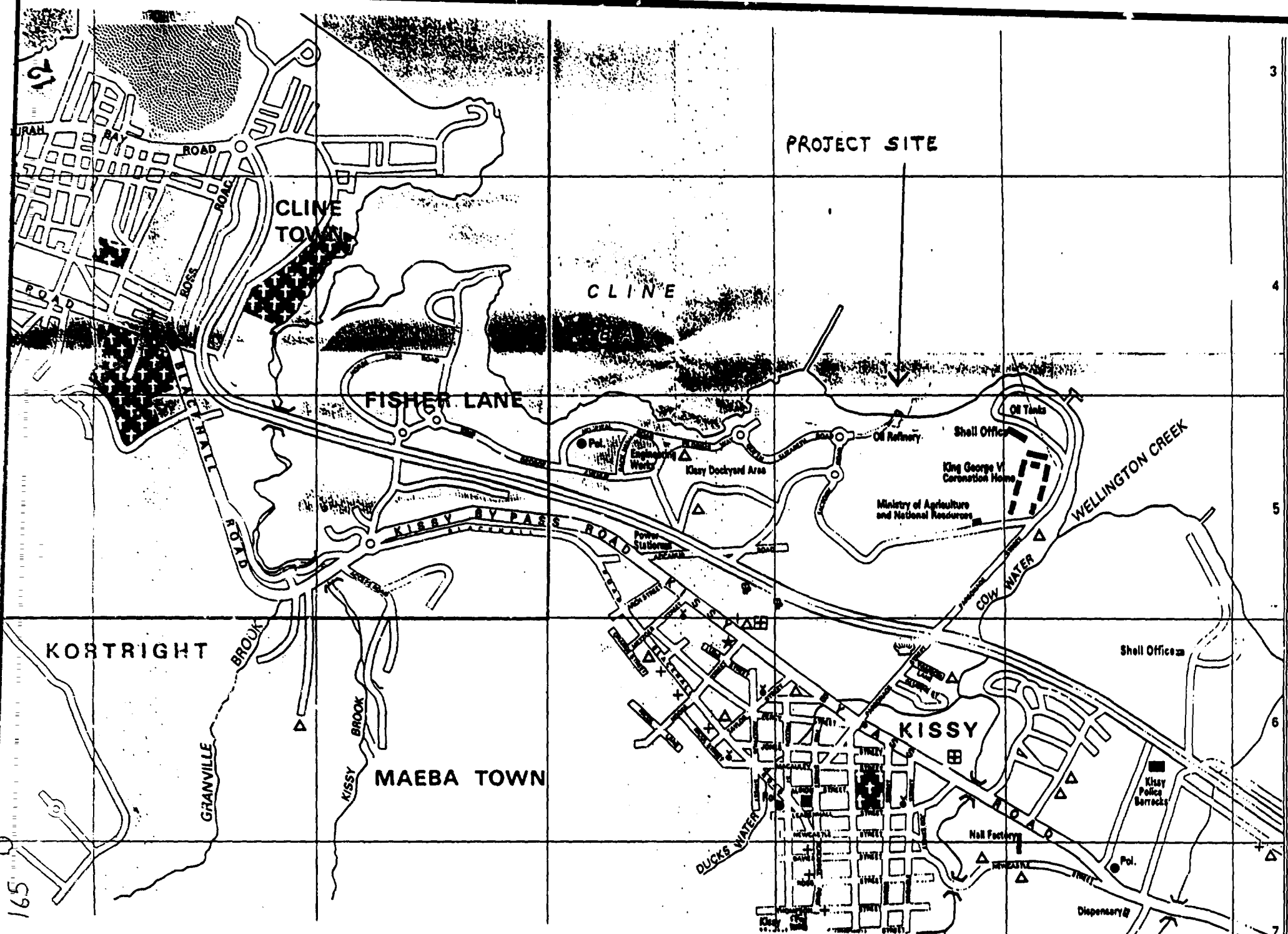
SUMMARY OF ESTIMATED INVESTMENTS OPERATIONAL COSTS, REVENUES, EMPLOYMENT AND CAPITAL REPAYMENTS BY ACTIVITIES AND FACILITIES IN U.S. $

ENTERPRISE	CAPITAL INVESTMENT	OPERATING COSTS
Trans shipment facility	180,000	450,000
Ice plant and ice store	260,000	220,000
Slipway and vessel repair	650,000	650,000
cold storage service	580,000	400,000
Processing service demersal & shellfish	450,000	460,000
Processing service pelagic	310,000	250,000
Processing and sale demersal & shellfish	850,000	1,020,000
Processing and sale pelagic	520,000	420,000
Bunkering facility	80,000	70,000
Chandlery and spares	150,000	550,000
Boat construction yard	400,000	620,000
Fresh fish fleet demersal & shellfish	580,000	350,000
Fresh fish fleet pelagic	620,000	290,000
Fish feed and meal unit	180,000	200,000
Fish distribution unit	190,000	150,000
Sub total	6,000,000	6,100,000
Capital repayments and interest charges		1,520,000
Rent of fish terminal		1,300,000
Taxes		280,000
Totals	6,000,000	9,200,000
GOVERNMENT		
Fish port terminal	10,000,000	100,000
M.C.S. service	2,000,000	420,000
Revenuee from royalties		2,400,000
Estimated capital repayment & interest charges		3,320,000
Totals	12,000,000	2,920,000

ANNUAL REVENUES	LOCAL EMPLOYMENT	END PRODUCT (annual)
820,000	20	30 - 50,000 tons trans shipped
300,000	12	17,000 tons ice
900,000	38	100 vessels slipped and repaired
600,000	18	84,000 tons/day storage
640,000	30	1,000 tons demersal and shellfish processed
320,000	20	2,000 tons pelagic processed
1,860,000	30	600 tons demersal and shellfish sold
980,000	20	1,200 tons pelagic sold
100,000	10	500 vessel bunkerings
650,000	8	Nets, gear and spare parts
750,000	24	3 vessel a year
520,000	18	1,000 tons mixed fish
460,000	22	1,800,000 tons pelagic
400,000	50	500 tons meal
200,000	30	1,600 tons of fish distributed
9,500,000	350	
3,000,000 *1	30	On shore management of fishing industry guaranteeing export fish control and local fish protein supplies
600,000 *2	30	Off shore management of fishery ensuring resource conservation and maximum royalty and license yields
3,800,000		
7,400,000	410	

*1 Port rental 1,300,000 Trans shipment fees 1,700,000

*2 Licenses 140,000 MRU lease 160,000 Fines 300,000


PROJECT SITE
CLINE TOWN
CLINE
FISHER LANE
KISSY BY PASS ROAD
KORTRIGHT
MAEBA TOWN
KISSY
WELLINGTON CREEK
COW WATER
DUCKS WATER
GRANVILLE
KISSY BROOK
BROOK
ROAD
Oil Refinery
Shell Office
Oil Tanks
Kissy Dockyard Area
Ministry of Agriculture and National Resources
Power Stations
Nail Factory
Kissy Police Barracks
Dispensary
Pol.
3
4
5
6
7

0010a

DRAFT PROJECT DOCUMENT

TOGO

TITLE Primary Industry Development in Togolese Rural Fishing Villages

NUMBER DURATION 3 years

PROJECT SITE Plateau Region, Togo
A group of selected villages around the convergence of the Anie and Mono rivers

SECTOR Rural development UNDP FINANCING $158,000

SUB-SECTOR Related Industry

HOST COUNTRY IMPLEMENTING AGENCY Ministry of Rural Development

EXECUTING AGENCY UNIDO

ESTIMATED STARTING DATE

GOVERNMENT INPUTS $4,500,000 cfa (in kind)

BRIEF DESCRIPTION Many rural villages in the Plateau river basins are stagnating through lack of industrial development. Thousands of families live at a bare subsistence level and as a result they have no surplus income to invest in labour and tools which would raise their productivity. Fish is the single most important product they have but it is only one of several products necessary to survival.

By application of a number of successful models and approaches developed by UNIDO, FAO and others the integrated development of these rural villages is to be started. Oraganisations and people's participation are essential elements of the project which will be backstopped regionally. By the end of the 3 years activity the target villages should all be above subsistence

level and enjoying the improved livlihoods resulting from increased productivity, reduced wasteful labour practices and introduction of basic tools, machines, marketing and processing methods.

PART A CONTEXT

The Republic of Togo has over a million persons living in the inland rural areas, many of them in small villages which practice traditional fishing and agriculture with very little industrialisation. The Plateau region has half a million people in four prc .nces around the basins of the Anie, Mono and Ogou rivers. Fishing is only one of several economic activities undertaken by the river and lake basin communities, though it is probably the biggest single activity in terms of protein and cash earnings.

Many of the riverine and lake communities live at a bare subsistence level. There is no surplus income for investment in tools, boats, machines, animals for traction or facilities which would raise production and provide some added value. Also lacking and urgently needed is the organisation and management structures and skills which would enable the communities to pool resources, to engage in complementary industrial activities and to network produce for marketing in more effective ways.

There is now near unanimous agreement among development and aid agencies that these rural communities will develop if their whole economies can be stimulated and sustained by integrated efforts based on full people's participation. Several successful examples of these integrated efforts are now functioning in West Africa. UNIDO, FAO and other U.N. Agencies and bilateral organisations are supporting and expanding this approach.

The strategy for developing primary industry in rural fishing communities reflected in this project document is part of a regional approach developed by UNIDO and FAO and based on a number of successful elements and models presently being applied in Africa and Asia.

PART B PROJECT JUSTIFICATION

1. Problem to be addressed: the present situation

The rural villages of Togo in riverine and lake basins are suffering from industrial and economic stagnation due to their low productivity and poor organisation. Much labour is wasted

or spent in time consuming efforts to fetch water and firewood long distances and to till fields and transport produce without proper tools or vehicles. The lack of long term security and the need to survive prevents any long term planning and results in practices which are detrimental to soil, forest cover, water supplies and fish conservation. The lack of transport facilities and organisation prevents the people from obtaining a good cash price for their produce on the few occasions when there is a surplus to sell.

Without intervention and assistance, these depressed rural communities will continue to stagnate and to have a generally destructive effect on their environment. The young people who are able to do so will leave the villages to search for employment in the towns and cities. Government is doing what it can with current resources to provide services and encourage production but only a concerted effort will lift whole communities out of their poverty trap and put them on the road to rural industry.

2. Expected end of project situation

At the end of the 3 years activity, the target villages will have an industrial base and organisation that did not exist before. Total production will have risen in every village and in some by as much as one hundred per cent in value terms and the surplus income will be partly invested in means to further raise production and added value.

The labour cost of collecting fuel wood and water will have been reduced and tools to reduce excessive labour in fishing and farming will have been introduced. Production increases will come from more efficient use of labour and from more productive use of land and water.

Cash incomes will have improved through better handling of fish and agricultural produce, through networking of produce for cooperative marketing and through sharing of low-cost transport to market centres.

Small service industries will have started, providing transport, processing, construction and other forms of skilled labour and mechanised services. Appropriate technologies in farming, fishing, food preservation, transport and mechanical work will have been introduced according to particular community needs.

Community managers will have been trained to spearhead production increases and network marketing and processing. A system of

decision making based on people's participation and involving indigenous village authorities will have been developed to provide the organisational basis for industrial progress.

3. Target beneficiaries

A group of selected villages in the riverine/lake area of Plateau region totalling 8 - 16 communities, 6,000 - 9,000 persons. One village will be chosen as the project base from which the others will be served. Selection will be made on the basis of appropriateness, need and interest. Each village must have some fishery activity and be currently un-served by any major development project. No village would be included without the full agreement and interest of the elders or leaders.

4. Project strategy and institutional arrangements

The project imprest will be held by the UNIDO office in Lome. All project staff will be based in the main target village. A tripartite committee consisting of U.N. agency officials,government officers from the rural development ministry and project staff will meet when required to settle any major or unforeseen issues. The committee will be chaired by the UNIDO representative in Lome.

Technical backstopping will be provided from the regional centre for industrial development of rural fishing villages which will be run by UNIDO in close consultation with FAO, UNDP and bilateral organisations in the region involved in similar development programme. The regional centre will provide training for both project staff and community managers. The training will focus on people's participation, resource assessment and utilization, organisation and management of primary industries, economic and industrial progress.

Within the target communities, the project team will work with village authorities and power structures which will have been identified at an early stage. Every activity and plan will be fully discussed with the people's representatives and no activity will be started without their approval and pledged cooperation.

5. Reasons for Assistance from UNDP/UNIDO

The kind of industrial progress promoted by the project would not take place without strong outside support as the communities lack capital and management structures or know-how. The present U.N.

emphasis on environmental problems, on eliminating rural poverty, on assisting womenfolk and rural youths and on integrated approaches to development all accord with the objectives, strategies and benefits of the project.

6. Special considerations

The approach taken in this proposal is based on several successful models now in use in Africa and Asia in U.N. government and bilateral development efforts. These include the People's Participation model, Shenge & Tombo, Sierra Leone FAO & GTZ; Economic analysis and monitoring of industrial production systems, Latin America & Africa UNIDO; Networking of production of smallholders and training of community managers, Negros, Philippines government; Resource assessment and use planning for rural communities, Maputo, Mozambique, FAO. The models are described in attached papers and will be developed for training purposes at the regional centre.

7. Co-ordination arrangements

It is important that closer and regular liaison be maintained between the project staff and the communities and between the project and the regional centre, UNIDO/UNDP Lome, and government offices in the Plateau region and in Lome. The tripartite committee will provide guidelines to maintain this liaison at an early meeting.

8. Counterpart support capacity

The Ministry of Rural Development should allocate liaison officers to the project, both in Lome and in the Plateau region where it maintains agricultural extension offices.

PART C DEVELOPMENT OBJECTIVE

The main development goal is to raise the target group of rural fishing villages above the subsistence level and on till production and value added increases provide them with a surplus for investment which through organisation, optimum resource use and technological innovation will lay the base for primary industry and further growth. This is to be accomplished while tackling serious environmental issues including forestry/fuelwood, soil and water conservation, and sanitation.

PART D IMMEDIATE OBJECTIVES OUTPUTS AND ACTIVITIES

1. Immediate Objective 1

The establishment of people's participation structures in the target villages, the assessment of natural and human resources and the planning of development activities

1.1 Output 1 A communication and authority network throughout the target communities, fully representative of the people and able to assess and critique proposals on behalf of the people.

Activities for output 1	To be completed by month	Responsible Staff
1.1.1 Assessment of village authorities	1	Project team plus local social experts
1.1.2 Discussion with village power groups	2	Team leader & government officer
1.1.3 Formation and recognition of community representative groups or committees	3	Tripartite Committee
1.1.4 First discussions on project plans	4	Team leader, government officer & p.p.groups

1.2 Output 2 Resource assessment and analysis of the area. *

Activities for output 2	To be completed by month	Responsible Staff
1.2.1 Study of existing material on the area	1	Team plus local experts
1.2.2 Compilation of data on soil,water,climate vegetation	2	Team plus local experts
1.2.3 Assessment of present & potential production of fish,agro-products and forestry	3	Team plus local experts
1.2.4 Assessment of human skills and labour including men, women and rural youths	2 - 3	Team plus local experts
1.2.5 Production improvement plan with input requirements	4	Project team
1.2.6 Plan submitted to communities	5	Project team

*note: All these activities would be backstopped by the Regional centre

1.3 Output 3 Development Activities plan with work and tool inputs.

Activities for output 3	To be completed by month	Responsible Staff
1.3.1 Community representative agreement to and/or modification of production plan	6	Project team and people
1.3.2 Translation of production plan into preparatory work activities	7	Project team
1.3.3 Agreement with villagers on who will undertake preparatory work and on amounts of food for work to be allocated	8	Project team and people
1.3.4 Preparation of tools list and identification of work sites	8	Project team

2 Immediate Objective 2

Execution of development plan and activities including training, organisation and technological innovation.

2.1 Output 1 Organised communities in agreement with and working on development activities and producing changed work patterns to yield better harvests, more value added and substituting environmental enhancement for environmental degradation.

Activities for output 1	To be completed by month	Responsible Staff
2.1.1 Purchase of project initial supply of tools and small vehicles	1	UNIDO rep and team leader
2.1.2 Construction of village housing for project staff	1 - 3	Team leader, UNIDO rep, Govt. officer, Community leaders
2.1.3 Purchase of tools for village work	7 and on	Team leader & Unido rep.
2.1.4 Ordering of food for work commodities and storage	7 and on	Team leader & UNIDO rep.
2.1.5 Execution of work activities	9 onwards	Villagers and project team
2.1.6 Initiation of improved production systems	12 onwards	Villagers and project team

2.2 Output 2 Simple industrialisation of processing and transport to reduce labour and increase value added: this seen in processing tools and facilities, improved products and economical village owned transport to market.

Activities for Output 2	To be completed by month	Responsible Staff
2.2.1 Identification of labour consuming practices and mechanisation possibilities	3 - 9	Project team and local experts
2.2.2 Introduction of tools and machines and training in their use	10 onwards	Project team
2.2.3 Networking of production for joint marketing	12 onwards	Project team and villagers
2.2.4 Establishment of simple transport facilities, owned and operated by members of the communities	15 - 24	Project team and villagers

2.3 Output 3 Trained community Managers and ongoing development promotion and monitoring of progress

Activities for Output 3	To be completed by month	Responsible Staff
2.3.1 Selection of suitable village candidates for training as managers	3 - 9	Team leader and villagers
2.3.2 Training of selected community managers	12 - 24	Project and Regional centre
2.3.3 Application of management and monitoring systems	12 onwards	Team leader
2.3.4 Installation of community managers with agreed terms of reference for their work and arrangements for their support	24	Team leader and villagers

2.4 Output 4 Project evaluation and recommendations for follow up activities

Activities for output 4	To be completed by month	Responsible Staff
2.4.1 Assessment of production and income increases and degree of industrial progress	30 - 34	Team leader
2.4.2 Meeting with all village authorities to discuss progress and future plans	34	Villagers, project team and Govt. officers

2.4.3 Tripartite review of project	35	UNDP/UNIDO, Govt., leaders and managers
2.4.4 Final report	36	Team leader/ UNIDO

PART E (a) GOVERNMENT INPUTS

National staff

Counterpart officers for technical and liaison duties as required	72 man months
Use of Government offices, facilities, vehicles and materials	900,000 cfa
Total value in kind	4,500,000 cfa

Other national inputs

Target villagers inputs

People's Participation committees and village authority supervisors (8x4x3)	96 man months
Labour for project activities given on food for work basis. Additional value of labour 200x6x5,000	6,000,000 cfa
Other inputs, materials and services	1,500,000 cfa
Total value in kind	9,900,000 cfa

(b) UNDP/UNIDO INPUTS

Project staff

Team leader (volunteer)	36 man months
Associate professional officer	36 man months
National expert	36 man months
Vehicles Motorcycle, mini tractor, trailer	$23,000
Boat and bycycles	$11,000
Nets, tools, equipment, hardware and seed	
Food for work items (rice and protein)	$ 9,000
Village type staff housing and store	$19,000
Travel expenses and miscellaneous items	$19,000
Total value for U.N. inputs	$158,000

PART F RISKS

The sucess of this ambitious project (one of a series of similar projects in the region) depends on the degree of people's enthusiastic participation; the accurate assessment of resource potential and identification of production systems and technologies; and the development of organisational and managerial skills within the community.

To minimise the risk of failure in each of these fields of activity, the project will use proven successful models and approaches presently in use in Africa by U.N. and bilateral agencies. They are described more fully elsewhere and will be the focus of the regional centre for training and support of primary industrial development in rural fishing villages in West Africa.

A degree a motivation and commitment as well as imaginative response is required of the project team. This has been achieved in similar projects in the region especially where, as in this project, the team lives in the village with the target community.

It should be borne in mind that the risks of not undertaking the project are much greater than any risk of failure to reach goals. At present de-forestation, soil erosion, destructive agricultural practices and water waste or pollution are aggravating the environmental problems to such a degree that they will be much more formidable if action is delayed by some years. Also the poverty trap that the people find themselves in is resulting in poor health, lack of education and general discouragement reflected in migration of youth to urban centres. These negative influences will continue to make matters worse if no remedial action is taken.

PART G PRIOR OBLIGATIONS AND PREREQUISITES

a. Prior obligations

The Project document will be signed by UNDP, and UNDP assistance to the project will be provided only if the prior obligations stipulated above have been met to UNDP's satisfaction.

b. Prerequisites

The Project Document will be signed by UNDP, and UNDP assistance to the project will be provided, subject to UNDP receiving satisfaction that the prerequisites listed above have been

fulfilled, or are likely to be fulfilled. When anticipated fulfillment of one or more prerequisites fails to materialise, UNDP may, at its descretion, either suspend or terminate its assistance.

PART H PROJECT REVIEWS, REPORTING AND EVALUATION

a. The project will be subject to tripartite review (joint review by representatives of the government, executing agency and UNDP) at least once every 12 months, the first such meeting to be held within the first 12 months of the start of full implementation. The national project co-ordinator and/or senior project officer of the United Nations executing agency shall prepare and submit to the UNDP Field Performance Evaluation Report (FPER). Additional FPER's may be requested, if necessary, during the project.

b. A project terminal report will be prepared for consideration at the terminal tripartite review meeting. It shall be prepared in draft sufficiently in advance to allow review and technical clearance by the executing agency at least four months prior to the terminal tripartite review.

c. The project shall be subject to evaluation months after the start of full implementation. The organisation, terms of reference and timing will be decided after consultation between the parties involved in the project.

PART I LEGAL CONTEXT

This Project Document shall be the instrument refferred to as such in Article 1 of the Standard Basic Assistance between the Government of Togo and the United Nations Development Programme, signed by the Parties on
The Host Country Implementing Agency shall, for the purpose of the Standard Basic Assistance Agreement, refer to the Government Co-operation Agency described in that Agreement.

The following types of revisions may be made to this project document with the signature of the UNDP resident representative only, provided he or she is assured that the other signatories of the project document have no objections to the proposed changes:

a. Revision in, or additiion of, any of the annexes of the project document (with the exception of the Standard Legal Text for non-SBAA countries which may not be altered and the agreement to which is a precondition for UNDP assistance.) (This language

is to be added where the host country has not signed the SBAA);

b. Revisions which do not involve significant changes in the immedite objectives, outputs or activities of a project, but are caused by the rearrangement of inputs agreed to or by cost increases due to inflation; and

c. Mandatory annual revisions which rephase the delivery of agreed project inputs or increased expert or other costs due to inflation or take into account agency expenditure flexibility.

PART J BUDGETS

	Total m/m	Total $	Year 1 m/m/	Year 1 $	Year 2 m/m	Year 2 $	Year 3 m/m	Year 3 $
International Experts (expert support will come from the regional centre)								
Administrative support personnel 13-99	72	18,000	24	6,000	24	6,000	24	6,000
U.N. Volunteers								
Team leader 14-01	36	34,830	12	11,610	12	11,610	12	11,610
Project travel and UNIDO mission costs 16-00		18,170		6,000		6,000		6,170
National experts								
Village industry offficer 17-01	36	15,000	12	5,000	12	5,000	12	5,000
Total personnel component 19-99		86,000		28,610		28,610		28,780
Equipment								
Expendable equipment 41-00		10,000		8,000		1,000		1,000
Non expendable equipment 42-00		24,000		21,000		2,000		1,000
Premises 43-00		19,000		17,000		1,000		1,000
Total equipment component 49-99		53,000		46,000		4,000		3,000
Miscellaneous								
Sundries and food for work 51-00		19,000		2,000		14,000		3,000
Project Total 99-99		158,000		76,610		46,610		34,780

0009a

DRAFT PROJECT DOCUMENT

COUNTRY TOGO

TITLE Development of offshore artisanal fishing craft

NUMBER DURATION 3 years

PROJECT SITE Lome harbour TOGO UNDP inputs $149,000

SECTOR Rural development

SUB-SECTOR Fisheries

HOST COUNTRY IMPLEMENTING AGENCY Fisheries department /NGO (EGESA) *

EXECUTING AGENCY UNIDO or FAO

ESTIMATED STARTING DATE

GOVERNMENT INPUTS Dept. fisheries 4,500,000 CFA
N.G.O. 16,000,000CFA

BRIEF DESCRIPTION Togolese fishermen require larger boats to prosecute offshore waters. They are able to operate from Lome port. Conventional deep sea vessels are too expensive and sophisticated for their purposes. They require simple functional decked vessels which can carry fish on ice and remain at sea for several days. The project will construct such a vessel, training boatbuilders on the job, and will train a captain and crew in its operation. The trained crew will eventually own the vessel, paying for it from catches. The project will construct further vessels from the proceeds from previous vessel catches.

*Echanges Generaux et Savoir-Faire, BP 4296 Lome

PART A CONTEXT

Togo is a net importer of fish, the 13,000 tons of fish obtained from its own fishing fleets being insufficient to meet national demand for fish protein. Most of the local boats are owned and operated by migrant fishermen, mostly Ghanian. The indigenous Togolese fishermen are growing in numbers and in skill. Some are now operating large canoes fitted with propulsion engines and echo sounders. The next step for them would be a fully decked vessel with inboard engine. They have the advantage of operating from a section of Lome harbour which frees them of the restrictions imposed on fishermen who must operate from the beach. The harbour is well equipped with a fish market and has adequate depth of water for larger displacement fishing craft. The Government wishes to encourage indigenous fishermen to increase their participation in the marine fishery and to expand to offshore waters if possible.

PART B PRCJECT JUSTIFICATION

1. Problem to be addressed; the present situation

Apart from a few steel trawlers, the bulk of the Togolese fishing fleet is composed of wooden dugout canoes which fish from the beaches and from Lome harbour. The canoe fishermen are partly Ghanian migrant fishermen and partly Togolese.

Recent developments in Lome have shown that the younger Togolese fishermen are readily adopting new technolcgies which include modern nets, inboard and outboard engines, echo-sounders and insulated ice boxes. This group is as progressive as any along the coast.

The marine fishing resource in Togo has obvious geographic limitations but there still remains some offshore fishing ground (up to 200 miles out) which is not being fully harvested. The reason is two-fold. Firstly the dugout canoes have limitations in size and range which confine them largely to the near shore waters (up to 20 or 30 miles offshore). Secondly it has become obvious that powerful steel trawlers of European design are too expensive and over-equipped for the fisheries of the smaller coastline contries like Benin and Togo.

There is therefore a need for functional vessels larger than the traditional canoes and yet much lower in cost than the steel trawlers. These intermediate craft would be wooden vessels of modest power similar in principal to some that are found in large numbers in the fisheries of Asia and the far east where conditions are not unlike those of West Africa.

The project is designed to produce such craft and to train local boatbuilders in their construction and local fishermen in their operation.

2. Expected end of project situation

At the end of the three years the project will have produced two offshore artisanal vessels and will have started work on a third.

The vessels will have been sold to local fishermen on an arrangement by which the proceeds of the sale fund the construction of the following vessels. The payments may have been staggered over the project period so the fishermen could repay as they earned.

A team of young boatbuilders will have been trained in vessel construction to the point where some of them may be able to set up business on their own in response to the demand from other fishermen for similar boats.

Two vessel crews will have been trained on the operation and maintenance of the vessels and on the practice of offshore fishing. They will have become joint owners of their vessel and will therefore be earning more than they could as mere deckhands or employees.

The new boats will have opened the way for other progressive fishermen to go after they have reached the limits of operation of a dugout canoe. The offshore fishing grounds will now be harvestable by inshore fishermen.

There will be a slight increase to the marine fish catch which will be welcomed by the market which has at present to import additional fish from abroad to meet local demand.

3. Target Beneficiaries

There are two main target beneficiaries : the Togolese fishermen and the Togolese boat builders. Both will benefit from an expansion of their opportunities.

Two other groups who will benefit in a small way from increased fish supplies are the local merchants and smokers (mostly women) and the local consumers.

4. Project strategy and institutional arrangements

The project will be supervised and controlled by the FAO or UNIDO representative in co-operation with the government fisheries department. It will be run by a local NGO, the Exchanges Generaux et Savoir-Faire which has acquired the services of an experienced boatbuilder/masterfisherman.

5. Reason for assistance from UNDP/UNIDO/FAO

The development and training work envisaged would not take place without some outside assistance. The NGO is keen to promote the activity and willing to support it as much as it can from its own resources. The U.N. assistance is required for materials, for trainees food and for general expenses and instructors support.

6. Special considerations.

The performance of the ngo EGESA to date has been very encouraging. It is vital to the success of this project that the EGESA boatbuilder/masterfisherman remains with the organisation or is replaced by an equally competent professional.

7. Co-ordination arrangements

The Project imprest will be handled by the FAO or UNIDO office in Lome. Disbursements will be made as required on the basis of receipts and documentation from the NGO in accordance with the project document.

Any debatable points will be discussed and agreed to by a tripartite committee consisting of the Agency Representative, the Director of Fisheries and the Chief of the NGO.

8. Counterpart Support Capacity

A liaison officer is required from the department of fisheries, ministry of rural development, to assist in contacts between the project and the local fishermen and port authorities.

PART C DEVELOPMENT OBJECTIVE

The project objective is to provide an offshore fishing capacity

to the Togolese artisanal fishermen and to train the fishermen and support industry personnel for this.

PART D IMMEDIATE OBJECTIVES, OUTPUTS AND ACTIVITIES

1. Immediate objectives 1

To construct a functional offshore fishing vessel and to train local boatbuilders in the process.

Output 1 One complete offshore fishing vessel and a trained group of boatbuilders.

Activities for Output 1	To be completed by month	Responsible Project Staff
1.1 Purchase of equipment and tools	1 - 2	UN Agency Rep & NGO
1.2 Detailed materials list and vessel plans	2 - 3	NGO staff
1.3 Purchase of materials	3 - 4	UN Agency Rep
1.4 Selection of trainees	2 - 4	Tripartite Committee
1.5 Construction of vessel and training of boat builders	4 -16	NGO staff

2. Immediate objective 2

To commission vessel and to train local fishermen in its use, and facilitate the eventual purchase by the fishermen.

Output 2 One fully operating offshore vessel owned and crewed by local fishermen.

Activities for output 2	To be completed by month	Responsible Project Staff
2.1 Selection of trainee fishermen	12 - 16	Tripartite committee
2.2 Commissioning and outfitting vessel	16 -18	NGO and Fisheries Department
2.3 Shakedown cruise	19	NGO
2.4 Training cruises	20	NGO
2.5 Commercial operation	21 onwards	Fishermen and NGO
2.6 Sale and purchase arrangements agreed and effected	21 - 24	Tripartite committee

3. Immediate objective 3

To construct further vessels and train more boatbuilders and fishermen.

Output 3 Additional offshore vessels and trained personel

Activities for output 3	To be completed by month	Responsible Project Staff
3.1 Income received from fish sales/repayments from first vessel	22 - 36	NGO and UN Agency
3.2 Purchasing of materials for second vessel	22 - 30	NGO and UN Agency
3.3 Construction of second vessel	23 - 33	NGO
3.4 Commissioning of second vessel	34	NGO and Fisheries Dept
3.5 Training of second vessel crew	35	NGO
3.6 Start to construction of third vessel	36	NGO

PART E INPUTS

A Government inputs

Naticnal support staff

Liaison Officer (as required during)	36 months	
Field and Technical staff members (various) to assist in technical and liaison areas (as required during)	36 months	
Total	72 months	
Use of government vehicles and premises (approx. value)	900,00C	cfa
Total value in kind	4,500,000	cfa

Other national inputs

NGO staff

Project director	36 months	
Boatbuilder/masterfisherman	36 months	
other support staff	72 months	
Total	144 months	
Use of NGO site and premises	900,000	cfa
Use of NGO transport and facilities	700,000	cfa
Total value in kind	16,000,000	cfa

B UNDP/UNIDO/FAO Inputs

Staff

Consultants : 3 man months Naval architects/masterfishermen

Support to NGO staff	$36,000 support
Administration staff	$12,000 support to UN agency office

Training

Food support for trainees	$12,000

Equipment and Supplies: machinery and tools for boat

Construction	$38,000 non expendable
Timber, nails, paint and hardwars for boat construction	$24,000
Miscellaneous items and reporting	$ 3,000
UNDP Total inputs	$149,000

PART F RISKS

There is no doubt on the ability of Togolese fishermen to adopt new technology or on the capacity of the boatbuilders to learn new construction techniques.

Risks associated with the project pertain rather to the successful performance of the new functional vessel. This will relate to two factors : seaworthiness and cost.

The vessels must be able to perform offshore with modern fishing gear (trawls, seines, gill nets) and to bring the catch back in good condition. Secondly the vessels must be of low cost and not expensive to operate. It is essential that the NGO be allowed to produce such craft and not pressured into building more expensive units. However the money allocated is sufficient only for simple functional boats.

PART G PRIOR OBLIGATIONS AND PREREQUISITES

a. Prior obligations

The Project document will be signed by UNDP, and UNDP assistance to the project will be provided only if the prior obligations stipulated above have been met to UNDP's satisfaction.

b. Prerequisites

The Project Document will be signed by UNDP, and UNDP assistance to the project will be provided, subject to UNDP receiving

satisfaction that the prerequisites listed above have been fulfilled, or are likely to be fulfilled. When anticipated fulfillment of one or more prerequisites fails to materialise, UNDP may, at its descretion, either suspend or terminate its assistance.

PART H PROJECT REVIEWS, REPORTING AND EVALUATION

a. The project will be subject to tripartite review (joint review by representatives of the government, executing agency and UNDP) at least once every 12 months, the first such meeting to be held within the first 12 months of the start of full implementation. The national project co-ordinator and/or senior project officer of the United Nations executing agency shall prepare and submit to the UNDP Field Performance Evaluation Report (FPER). Additional FPER's may be requested, if necessary, during the project.

b. A project terminal report will be prepared for consideration at the terminal tripartite review meeting. It shall be prepared in draft sufficiently in advance to allow review and technical clearance by the executing agency at least four months prior to the terminal tripartite review.

c. The project shall be subject to evaluation months after the start of full implementation. The organisation, terms of reference and timing will be decided after consultation between the parties involved in the project.

PART I LEGAL CONTEXT

This Project Document shall be the instrument refferred to as such in Article 1 of the Standard Basic Assistance between the Government of Togo and the United Nations Development Programme, signed by the Parties on
The Host Country Implementing Agency shall, for the purpose of the Standard Basic Assistance Agreement, refer to the Government Co-operation Agency described in that Agreement.

The following types of revisions may be made to this project document with the signature of the UNDP resident representative only, provided he or she is assured that the other signatories of the project document have no objections to the proposed changes:

a. Revision in, or additiion of, any of the annexes of the project document (with the exception of the Standard Legal Text for non-SBAA countries which may not be altered and the agreement to which is a precondition for UNDP assistance.)

(This language is to be added where the host country has not signed the SBAA);

b. Revisions which do not involve significant changes in the immedite objectives, outputs or activities of a project, but are caused by the rearrangement of inputs agreed to or by cost increases due to inflation; and

c. Mandatory annual revisions which rephase the delivery of agreed project inputs or increased expert or other costs due to inflation or take into account agency expenditure flexibility.

PART J BUDGETS

	TOTAL		YEAR 1		YEAR 2		YEAR 3	
International Experts	m/m	$	m/m	$	m/m	$	m/m	$
11-01 Consultants	3	18,000	1	6,000	1	6,000	1	6,000
Admin & support personnel								
UNIDO /UNDP office		12,000		4,000		4,000		4,000
Support to NGO office		36,000		12,000		12,000		12,000
Project travel		6,000		2,000		2,000		2,000
Total personnel component		72,000		24,000		24,000		24,000
Training								
33-00 Food for inservice trainees		12,000		4,000		4,000		4,000
Equipment								
41 Expendable equipment		38,000		20,000		10,000		8,000
42 Non-expendable equipment		24,000		12,000		8,000		4,000
49-99 Sub total		62,000		32,000		18,000		12,000
Miscellaneous								
51-00 Sundries		3,000		1,000		1,000		1,000
99-99 Project total		149,000		61,000		47,000		41,000

0016a

DRAFT
PROJECT PROPOSAL

AREA DEVELOPMENT OF PRIMARY INDUSTRY IN RURAL FISHING COMMUNITIES WEST AFRICA

REGION West Africa

PROJECT Regional Centre for Primary Industry Development in Rural Fishing Areas

ESTIMATE COST $870,000
(establishment and 3 year operation)

EXECUTING AGENCY UNIDO

DONOR To be submitted to Nordic Countries

LOCATION Ghana or Sierra Leone

BRIEF DESCRIPTION This will be a rural training and technical support centre for the industrial development of fisheries communities in rural areas of West Africa. It will be based in a rural fisheries area and will use existing successful projects as examples for training purposes. The training and methodology will be based on four successful approaches or development tools currently in use, namely:
Resource assessment, analysis and utilisation (Maputo)
People's participation and local enterprise (Shenge/Tombo)
Production management and area development (Negros)
Economic analysis and monitoring (Peru/Guinea)

The object of the Centre is to transfer and spread successful approaches to basic industry development to projects throughout the Region. It will serve projects currently requested by several countries in West Africa.

TECHNICAL SUPPORT AND TRAINING CENTRE
part of
A REGIONAL PROGRAMME TO LAY THE BASIS FOR DEVELOPMENT OF PRIMARY INDUSTRY IN RURAL FISHING COMMUNITIES

PART A CONTEXT

Rural fishing communities in the least developed countries form a significant proportion of the primary producers in those regions. Like the farming communities, they have limited access to natural resources, technology, communications and services and lack the institutions or organisation which would promote and sustain higher levels of productivity. Yet they comprise a human resource of considerable potential and are surrounded by land and water resources which could yeild substantial harvests.

There is now near unanimous agreement among development and aid agencies that these rural communities will develop if their whole economies can be stimulated and sustained by integrated efforts based on full people's participation. It has been pointed out that "transformation of agricultural production could come about if strong structural linkages were established between agriculture and industry and if significant increases were achieved in productivity levels in both sectors". A recent review by FAO of integrated fishery projects identified as key success factors, people's participation linked to development of management capabilities, and fullest use of all human and natural resources to fuel the economic engine of industrial progress.

The UNIDO FAO fisheries industries mission to West Africa has identified a twin strategy for development in that region. For coastal communities where fish is by far the dominant income generator, a programme of sites and services to raise production and quality, and facilitate access to markets. For inland, estuary and lagoon communities where fish, though the most important, is only one of a range of produce, an integrated programme to maximise production and add value, and generate incomes to a level which will create local markets and services.

PART B PROJECT JUSTIFICATION

1. Problem to be addressed ; the present situation

The rural fishing communities of West Africa, especially those lake, lagoon and riverine villages, depend on the production of

food, fuel, building materials and cash crops to maintain their livelihood. Fish per se may form anything from 90% to 10% of the production of individual households. But practically all households depend on an array of economic and subsistence activities that draw on the spectrum of resources available. Any attempt to raise the total economic value of their activities from a single sectoral base will result in failure and disparities not to mention unbalanced utilisation of resources. An integrated area approach is called for.

The integrated approach must involve analysis of natural and human resources and in a participating approach with the communities, decide on the most appropriate mix of produce and technologies for each area or community. Examples of successful use of this approach are the GTZ integrated fisheries projects in Benin and Sierra Leone, NGO fish processing work in Togo, UNIDO growth centres and ILO construction of roads and wells in rural areas in the region. These are all impact projects based on people's participation and designed for sustainability. The FAO integrated fisheries project in Shenge, Sierra Leone, has raised the value of local fish production from less than one to over four million dollars a year. Village people interviewed expressed the unsolicited comment that what they liked about the project was not just the income generated, but the fact that everyone in the community benefited from the project.

Programmes and projects for West Africa should therefore be based on proven approaches and successful models. The following proposals for integrated development of primary industry in rural fishing communities are based on four such models. The models which are presently in use, deal with four vital activities essential to integrated project success.

These are: 1. Resource assessment and planning
2. People's participation and local enterprise
3. Production management systems and area development
4. Economic analysis, project viability and monitoring

Training technology transfer and small scale industrialisation are essential components of the programme, particularly management training which is of key importance in developing the organisational competence and stuctures without which little progress is possible.

The four models will serve as guides and patterns for regional strategies and for individual project design and execution. Briefly they can be summarised as follows:

RESOURCE ASSESSMENT AND PLANNING This is the "Maputo" model which was developed at the Agrarian Training Centre Mozambique by an imaginative team led by A. Jaqin of FAO. The model is focussed on nutritional, energy and housing needs and utilises all the best available data on soil types, climate, rainfall and production coefficients for particular crops or animals. In these respects it follows approved methodologies for resource

assessment and production planning. But what makes the Maputo model unique is its imaginative use of hands-on models and visual displays. Scale models and symbols are so matched to enable calculations and assessments of alternatives and scenarios without recourse to computers or calculators. Rather as the "cuisinaire" system of coloured blocks enables a child to grasp the principles of advanced calculus, so the Maputo model can be appreciated by illiterate peasants, though it can also be used like a computer by university graduates. Students trained in its use have constructed village models on site and with their help enabled village leaders to appreciate and enter into the resource assessment and production planning activity.

It is recommended that this powerful didactic tool be developed for West Africa and that national community managers be trained in resource assessment and production planning using the model on a regional, national and community level.

PEOPLES PARTICIPATION AND LOCAL ENTERPRISE This is the "Shenge" model developed in Sierra Leone for integrated fisheries development, though other similar projects might have been taken as models, such as the GTZ Tombo project.

From the start it was determined at Shenge to identify the village power structures and authority figures - tribal, religious, economic, social and government, and to involve them as far as possible in the project activities. No work was to be undertaken without the agreement and support of the community as represented by its influential groups and individuals. This necessitated patience and took time to achieve, but once the participation was realised it largely ensured success because of the expressed commitment of the people.

The local involvement then laid the basis for a further goal of the project, namely the "localisation" or privatisation (for want of a better word) of all project activities so that on disengagement at the conclusion of the external support, the economic activities would continue under local ownership and management. The particular structure of individual enterprises varied enormously but in each case it was local people who had ownership and management.

In Shenge and its twelve associated villages, fish production was increased to over 14,000 tons with a landed value of $2.8 million and a processed (smoked) value of over $4 million. Local boat building and engine maintenance workshops were established, plus a cooperative fuel depot, a gear store and numerous advanced "chorkor" style fish ovens. Service industries were able to grow in the new atmosphere of economic activity. These included fuelwood supplies, transport (land and water), foodstalls, hairdressers, tailors, and even a guesthouse and restuarant of remarkable quality.

The Shenge model should be used as a guiding example in people's participation and enterprise development. It would be

particularly appropriate in the Bonthe/Sherbro area where conditions are very similar and the soon completion of an access road and bridge will stimulate trade and commerce.

PRODUCTION MANAGEMENT SYSTEMS AND AREA DEVELOPMENT A key to increased production and added value is the introduction of management on an area basis so that small producers can share the costs of harvesting, processing and marketing faciliies. It demands a degree of organisation and cooperation which can grow and be strengthened as the benefits of lower costs and greater revenues are realised.

The project may use the "Negros" model for this aspect of its work. In the island of Negros thousands of peasant families were left impoverished when the collapse of the sugar market left them without even the meagre cash incomes they had received from the huge local sugar plantations. Each family however had a small vegetable garden, a few fruit trees and some pigs, ducks or chickens. It was decided to augment their household productions under as area development programme which would be networked by local community managers.

Each community selected its candidate for training and cooperated in the resource inventory. It was discovered that the combined production of the households could support a slaughterhouse and ham processing plant, duck, chicken and egg marketing outlets, flour mills, fruit driers and cooperative market outlets for baked foods, fermented fish, shellcraft, carpentry items and homemade dresses and shirts. Local tricycle type transport was promoted as well as other service industries. The graduation of trained community managers was treated as a "fiesta" occasion by the communities whose participation in the system and in the area development had given them an independence and income level they could never hope to have from the sugar plantations.

A similar area development and management system adapted for West Africa could be a splendid complement to and link between the resource assessment and planning work a the people's participation and enterprise development.

ECONOMIC ANALYSIS, PROJECT VIABILITY AND MONITORING Assessment of the viability and economic benefits of given production systems is a complex matter and requires consideration of all costs and benefits including foreign exchange elements, government revenues, loans and depreciation. For primary industries, a method developed by UNIDO is proving to be both useful and adaptable. It was developed first for oils and fats industries and is now being applied to fisheries and to agriculture mechanisation.

The attraction of the MEPS model is its versatility, and the speed with which it can provide a general analysis of a variety of production systems and alternatives. It can be used for a peasant or artisanal industry as well as a highly developed one, and can be adapted to any kind of production system whether

primary,secondary or service in nature.

The MEPS model has been used to obtain a general economic picture of the artisanal and industrial fisheries of West Africa, and to develop alternatives for improved production in both sectors. It is proposed that the same tool be used to evaluate individual systems as they are established by projects, and to monitor their progress. It is a simple matter once the data is in place to modify it as costs and production coefficients change and thus to obtain regular up to date analyses of project performance.

It will greatly assist the Governments which have industrial or commercial fisheries, to see at a glance the range of costs and benefits accruing from any changes to the structure of the industry.

Adaptation and refinement of the model would be one of the tasks of the regional project which would also provide training in its use to national personnel.

The four models to be used as tools and methodologies for project work are complementary and supportive of each other. They are models which have proved themselves in development work for both small and large scale industries and for fisheries and other primary industries.

2. Expected end of project situation

At the end of the 3 year project there would be a regional training facility supporting integrated development projects throughout West Africa. The centre will have developed the application of successful approaches to rural fisheries and industrial development in didactic tools and training methods for workers in field projects.

Under the regional programme umbrella a series of small rural fisheries industry development projects will have been established. The particular content of each project would vary with the resources, needs and constraints in the particular area. But each project would have the following commonalities.

AREA A rural fishing area, -riverine, lake, swamp, lagoon or estuary, with a total population of no more than 10,000 persons. (This the Shenge project found to be the maximum size to serve. The Tombo project village grew from 4,000 to 15,000 in population and this brought considerable problems to the project, straining its resources)

It is likely that this size of project area would be grouped in about 6 to 12 villages. The project should be based in the central or most strategically located village.
STAFFING It is simply not cost effective to base expensive expatriate professional staff at each project. At the most, one

national coordinator might be supplied. The field project staff then would be made up of national and regional experts to be trained by the regional programme, volunteers, A.P.O.s and TCDC experts. Several of the more advanced developing countries have expressed interest in supporting such projects in LDCs and they may be invited to participate if they can supply appropriate expertise.

The end result of each field project vis a vis individual target villages is illustrated in the following table:

RESULT OF FISH/AGRO/INDUSTRY INTEGRATED PROJECT FIRST PHASE
HYPOTHETICAL RURAL FISHING COMMUNITY
200 HOUSEHOLDS - 1,000 PERSONS

Present production			Initial project target production		
Commodity		Value $	Commodity		Value $
Fish	25tons	12,000	Fish	38tons	18,000
			Fish products Value added		7,000
Cereals	30tons	9,000	Cereals	45tons	13,500
			Milled cereals Value value		4,000
Meat	5tons	4,000	Meat	6tons	4,500
Vegetables	6tons	3,000	Vegetables	8tons	4,000
Fruit & nuts	6tons	3,000	Fruit & nuts	8tons	4,000
Fuelwood	800m^3	4,000	Fuelwood	1,200m^3	6,000
Thatch and woven work (house constr.)		4,000	Thatch and woven work		6,000
Transport (boat, animal & foot)		2,000	Transport (boat, tricycle, bicycle, mini-tractor)		5,000
Labour (for payment in-kind 4,000 days)		4,000	Charcoal		2,500
All other		5,000	Processed foods		2,500
			Flowers and plants		2,200
			Tourist services		2,800
			Woodwork items		2,000
			Mechanic workshop		5,000
			Labour 2,000 days		2,000
			All other		9,000
	TOTAL	50,000		TOTAL	100,000

Explanation:- The above illustrates a rural fishing community living at subsistence level and on the right production increases brought about through integrated project support and training. Ten such villages in a single project would see total production value rise from 0.5 to over 1.0 million dollars. Some of the value increase serves to generate and sustain other mini industries in the supply and service areas.

The production increases are facilitated by :
a) reducing excessive labour requirements in water and fuel collection
b) conversion from slash and burn agriculture to cultivation and sustainable agro/forestry
c) more rational use of resources and introduction of basic technologies
d) introduction of management systems to community production
e) promotion of value added work on primary produce wherever possible
f) more effective marketing and distribution of excess produce
This first phase then raises the communities above subsistence level and lays the basis for simple mechanisation and development of rural industry. Money begins to circulate within the villages and starts to fuel the economic motor of an integrated economy.

3. Target Beneficiaries

The ultimate target beneficiaries are the hundreds of thousands of rural fisherfolk living in villages which have so far failed to develop much beyond subsistence level existence. This includes all of the village people, men, women and young folk.

The immediate target group are those persons actively involved in the development of basic industry in rural fishing communities, including technical and development officers of fisheries, agro-industry, community and rural development ministries or departments.

A major focus of training effort will be on village or community managers who will be young persons of reasonable education, nominated by their villages, who will ultimately be responsible for village production organisation and who will be paid by the villages from the surplus earned from new or increased products and better marketing.

4. Project strategy and institutional arrangements

The project will report to UNIDO and to nominated officers in each participating country who will probably be from fisheries, natural resource or rural development ministries.

Around months 18 and 35 of the project life the national liaison officers mentioned above will attend a tripartite review of the centre and the project activities.

5. Reasons for assistance

It has become evident to most development organisations and national governments that some serious environmental, social and economic development problems require a regional programme

approach. It is also clear that renewed emphasis and attention need to be given to management and organisation skills and to proven, successful approaches to rural and fisheries development. These all require and justify external assistance.

6. Special considerations.

The regional programme would need to be fully bilingual or else there would have to be one for francophone and one for english speaking countries. The regional office would have one expatriate professional director plus a number of regional or national experts and possibly some A.P.O's and volunteers. It should be located within reach of an airport and telecommunications, but away from urban environments. A river, lake or estuary site would be suitable. The regional office would contain the training centre for the project personnel and a resource centre for information on fisheries and agro-industry technologies.

It is also essential that the training centre be located in a rural fisheries situation. The building should be of local construction wiht natural cooling and ventilation. Good quality local timber, thatch, woven panels and/or kimberley brick would be preferable to concrete and iron, to create the atmosphere in which the trainees will eventually work. The accommodation and kitchen facilities, while clean and comfortable, would be of a similar construction.

7. Coordination arrangements

Each field project in the programme would liaise directly with the centre for technical support and guidance and for training of its personnel.

This will involve travel by centre staff and by trainee workers from the projects. The travel costs is significant but because the centre is in a rural setting with village type buildings and its own catering facility , the cost of accommodating trainees will be low.

8. Counterpart support capacity

Each participating country would be invited to supply a counterpart officer to the centre. The centre would provide accommodation for all counterparts free of charge.

PART C DEVELOPMENT OBJECTIVE

1.The successful lifting of rural fishing communities above the subsistence level and their organisation to maximise production and added value and lay the foundation for industrial progress.

2. The reversal of environmental degradation and cessation of destructive agriculture, fishery and forestry practices. The optimum utilisation of soil, water, forest, agricultural and fishery resources to maximise product value while conserving and enhancing the resource for the future.

3. The creation of an "enterprise" climate by judicious promotion of people's participation, land and water tenure, appropriate forms of ownership and cooperation, and opportunities for economic advancement.

PART D IMMEDIATE OBJECTIVES Outputs and Activities

1. Immediate Objective 1

Establishment of the regional training centre and its didactic tools

1.1 Output 1 One regional centre in a suitable rural location
with appropriate didactic tools and facilities

Activities for output 1	To be completed by month	Responsible staff
1.1.1 Hire of (Maputo FAO) consultant A.Jaquin	1	UNIDO Consultant and national officers
1.1.2 Selection of site and design of village type buildings and teaching aids	3	
1.1.3 Purchase of materials and contracting with local labour	5	Consultant and local team
1.1.4 Completion of buildings	10	Project manager and local team
1.1.5 Completion of training models	12	Project manager and local team

2. Immediate Objective 2

Preparation and execution of training programme

2.1 Output 1 Training programme and activities and courses held

Activities for output 1	To be completed by month	Responsible staff
2.1.1 Compilation of didactic material related to training models	6 - 12	Consultant and Project manager
2.1.2 Arrangements with local successful projects to visit and study methods	8 - 12	Project manager
2.1.3 Receipt and selection of training applicants from field projects	10 onwards	Project manager and field project leaders
2.1.4 Schedule of courses	12 onwards	Project manager
2.1.5 Execution of courses	14 onwards	Project manager

3. Immediate objective 3

Technical assistance to field projects

3.1 Output 1 Analysis of resources, organisation of people's particiapation and field staff trained in MEPS and NEGROS models

Activities for output 1	To be completed by month	Responsible staff
3.1.1 Training of key field project staff	12 - 36	Project manager
3.1.2 Application of Maputo and Shenge approaches	14 - 36	Field project teams
3.1.3 Backstopping and support of organisation and analysis	15 - 36	Project team
3.1.4 Field visits to assist in particular problems	12 - 36	Project team
3.1.5 Sharing of experience with other projects and trainees	24 - 36	Regional and national project teams

PART E INPUTS

(a) Host Government Inputs

Provision of land for project site		value in kind	$20,000
Provision of local labour and materials at cost price		additional value in kind	$10,000
National counterpart officer	36 man months	value	$12,000
		Total value contribution in kind	$42,000

Other participating government inputs

National counterparts	4 x 36	value in kind	$48,000

(b) Donor Inputs

Project Manager	30 man months	$218,000
Regional expert	24 man months	$ 36,000
UNV (rural development) (with APO support if appropriate)	24 man months	$ 24,000
Consultants		$ 36,000
	Sub total	$314,000
Travel		$ 70,000
Equipment		$ 50,000
Training centre		$165,000
Training courses		$180,000
Vehicles (1 jeep, 1 minibus)		$ 50,000
Miscellaneous		$ 26,000
	Total	$870,000
% for U.N. overheads		$113,000

PART F RISKS

To avoid excessive risks the centre is deliberately sited in a rural area and built of local village type materials. This reduces the building cost from about $650,000 to $165,000.

There is the risk that at the end of the 3 years there may not be a donor to continue the work of the centre. This risk is reduced by keeping operational costs low ($195,000 per year). That cost could be further reduced if field projects met the training costs of their personnel.

But the real risk is in the failure of the field projects being supported to reach their development goals. To minimise this the Centre uses ONLY successful methods, currently in use, and utilises actual projects as training examples to make the training as practical and effective as possible.

PART G PRIOR OBLIGATIONS AND PREREQUISITES

a. Prior obligations

The Project document will be signed by UNDP, and UNDP assistance to the project will be provided only if the prior obligations stipulated above have been met to UNDP's satisfaction.

b. Prerequisites

The Project Document will be signed by UNDP, and UNDP assistance to the project will be provided, subject to UNDP receiving satisfaction that the prerequisites listed above have been fulfilled, or are likely to be fulfilled. When anticipated

fulfillment of one or more prerequisites fails to materialise, UNDP may, at its descretion, either suspend or terminate its assistance.

PART H PROJECT REVIEWS, REPORTING AND EVALUATION

a. The project will be subject to tripartite review (joint review by representatives of the government, executing agency and UNDP) at least once every 12 months, the first such meeting to be held within the first 12 months of the start of full implementation. The national project co-ordinator and/or senior project officer of the United Nations executing agency shall prepare and submit to the UNDP Field Performance Evaluation Report (FPER). Additional FPER's may be requested, if necessary, during the project.

b. A project terminal report will be prepared for consideration at the terminal tripartite review meeting. It shall be prepared in draft sufficiently in advance to allow review and technical clearance by the executing agency at least four months prior to the terminal tripartite review.

c. The project shall be subject to evaluation months after the start of full implementation. The organisation, terms of reference and timing will be decided after consultation between the parties involved in the project.

PART I LEGAL CONTEXT

This Project Document shall be the instrument refferred to as such in Article 1 of the Standard Basic Assistance between the Government of and the United Nations Development Programme, signed by the Parties on The Host Country Implementing Agency shall, for the purpose of the Standard Basic Assistance Agreement, refer to the Government Co-operation Agency described in that Agreement.

The following types of revisions may be made to this project document with the signature of the UNDP resident representative only, provided he or she is assured that the other signatories of the project document have no objections to the proposed changes:

a. Revision in, or additiion of, any of the annexes of the project document (with the exception of the Standard Legal Text for non-SBAA countries which may not be altered and the agreement to which is a precondition for UNDP assistance.) (This language is to be added where the host country has not signed the SBAA);

b. Revisions which do not involve significant changes in the immedite objectives, outputs or activities of a project, but are caused by the rearrangement of inputs agreed to or by cost increases due to inflation; and
c. Mandatory annual revisions which rephase the delivery of agreed project inputs or increased expert or other costs due to inflation or take into account agency expenditure flexibility.

PART J BUDGETS

	TOTAL		YEAR 1		YEAR 2		YEAR 3	
	m/m	$	m/m	$	m/m	$	m/m	$
International staff								
Project manager 11-01	30	218,000	6	42,000	12	86,000	12	90,000
Regional experts 11-02	24	36,000	8	12,000	8	12,000	8	12,000
Consultants 11-50	6	36,000	4	24,000	2	12,000		
Admin. & support personnel 13-00		15,000		5,000		5,000		5,000
UNV (rural Dev.) 14-01	24	24,000	12	12,000	12	12,000		
Project travel 15-00		70,000		25,000		25,000		20,000
Total personnel component 19-99		399,000		120,000		152,000		127,000
Training 33-00		180,000		20,000		80,000		80,000
Equipment								
Expendable 41-00		25,000		5,000		10,000		10,000
Non expendable 42-00		75,000		60,000		10,000		5,000
Premises 43-00 (material and labour)		165,000		150,000		10,000		5,000
Total equipment component 49-99		265,000		215,000		80,000		20,000
Miscellaneous 51-00								
Sundries and reporting		26,000		2,000		8,000		16,000
TOTAL 99-00		870,000		357.000		270,000		243,000
13% U.N. overheads		113,000						

0017a

PROJECT CONCEPT

UNIDO

REGIONAL TECHNICAL ASSISTANCE

AND CO-ORDINATION PROGRAMME

WEST AFRICA

Support to harbour construction and boat building for the marine fishing industries of West Africa.

Programme Cost $ 283,000

Programme Duration 3 years

Region Served Mauritania to Cameroon

1. BACKGROUND

From Mauritania to Cameroon there are about half a million indigenous fishermen who together produce around one million tons of fish from the seas off West Africa. They are a skilled and industrious group who are supported by an equally intrepid army of women fish merchants and processors. Together this traditional industry provides the major protein food for the region and the economic support for jobs and enterprise in boat construction, transport and fuel supplies.

Three critical regional issues affecting the indigenous fishing industry are now combining to demand urgent attention if the industry is to flourish and grow. These described in the following paragraphs are in summary:-

The need to replace existing canoes (over 100,000) as the stock of large wawa trees from which they are made is nearing depletion.

The need to develop offshore fishing craft for artisanal fishermen to enable them to prosecute and share in the offshore fisheries.

The need for safe harbours or landing places as much of the African coast is exposed to heavy surf. The traditional heavy dugouts have operated off surf beaches but it is too dangerous for planked canoes, and certainly unsuitable for any larger craft.

Several new programmes and industries being developed need to be co-ordinated to tackle the problems. For example Cameroon is now developing saw mills and boat construction industries. Sierra Leone is to build offshore fishing craft. Guinea, Ghana and Benin are looking at possible answers to the harbour problem.

A regional support programme is suggested to enable UNIDO to co-ordinate and advise these developments and to save unnecessary expense by sharing regional experience and progress.

2. JUSTIFICATION

AFRICANISATION OF OFFSHORE FISHERIES

At present the bulk of the harvest of the rich offshore fisheries is taken by foreign fleets. These are large sophisticated vessels equipped with freezing and processing equipment. Attempts to establish and operate similar African national fleets have been beset with problems related to the high import cost, the need for sophisticated support services and spare parts and the requirement for qualified deck and engine officers. As a result many African companies enter into joint ventures which leave the fleet management in foreign hands.

An alternative approach is to expand and develop the artisanal fleets so that thay can prosecute the offshore fishery. The

time for this is ripe for several reasons. The large dugout canoes have reached their ultimate size (up to 20 metres) and some fishermen are adding planks to accommodate larger nets, ice and bigger catches. These boats are mechanised, some with diesels and a few are now using echo sounders.

It would be a relatively short step to move to decked vessels if these were functional wooden craft with modest power and simple mechanisation. They would also then be within the purchasing power and maintenance capabilities of the local fishermen. Using ice for preservation they could make trips of up to 5 days, allowing them to prosecute most of the offshore areas.

CANOE REPLACEMENT

This issue is really one of the future development of the artisanal marine fishing of West Africa. It relates to the effective national harvesting of coastal and offshore stocks, to harbour development and to marine technology as well as forestry. But the immediate problem is one of supply of large logs which form the "dugout" constructional basis of most of these craft.

There are at present over 50,000 fishing canoes prosecuting the coastal marine fishery of West Africa. Together they produce over 600,000 tons of fish annually and directly support communities and families totalling between one and two million persons.

We could divide the fishing canoes into four broad types. The Ghana canoe is the largest, measuring up to 17 metres and made from a single log with some additional upper planking. The Senegalese canoe is a compromise between a dugout and a planked boat. Smaller than the Ghana canoe it is nevertheless versatile and seaworthy.

Planked canoes, with or without log keels are used in fisheries which do not have to contend with beach surf conditions. Sierra Leone has many of these such as the planked Ghana and planked Yellefufu boats. They range in length from 7 to 19 metres.

Small dugout canoes are used for line and cast net fishing in lagoons and sheltered coastal waters. Their capacity and range are very limited.

The main source of logs for the large canoes is the Wawa tree, Triplochiton Scleroxylon which grows in the tropical forests of Ghana and Côte d'Ivoire. The largest canoes have a beam of 1.6 metres and this requires a tree of 1.65m diameter or 5.2 metres circumference. Such a tree would require 80 years to grow. A recent forestry census showed there were only 34,000 such trees left in Ghana, plus 64,000 of up to 1.5m diameter. Reserves in neighbouring countries are reckoned to be even more depleted. FAO have estimated that for replacement of ageing dugout canoes, some 30,000 logs are required each year. This does not allow for any fleet expansion. As fisheries is only one of several markets

competing for the large trees, only a percentage of harvested logs would be available for canoe construction. The best overall estimate for the whole of West Africa is that the supply of logs for large dugout canoes will be exhausted within ten years. (Sheves FAO IDAF 1988)

One may rightly wonder why the large dugout canoes cannot be replaced entirely by planked boats. The reason is that a planked boat is of too light construction to stand up to the pounding a canoe experiences on a surf-exposed beach. Planked boats of suitable local design are acceptable only where harbours exist or where there is no surf. For most of the Benin gulf and Ghana the fishing fleets must land on a beach through heavy surf and it is in these conditions that the heavy large dugout canoe is ideal.

Numerous attempts by FAO and others to produce an alternative beach surf boat have failed to come up with a model that meets the rigorous conditions and is within the buying power of the fishermen. Possibly the best prototype to date is the French designed super-canoe based on the Ghanian design but more streamlined and larger. The hull form appears to be suitable but the construction requires strengthening. Being make of g.r.p. or fibreglass, it is expensive.

But whichever model is finally adopted, it is evident that West African fisherman will have to come to terms with the lack of material for dugout canoes and will have to develop new vessel technology over the next ten years. This is especially true for the beach fishermen operating from surf-exposed coasts.

HARBOUR DEVELOPMENT

This brings us to a second possibility. If development of an adequate acceptable surf canoe is going to be difficult, could we not instead look at the establishment of harbours or breakwaters which would provide the fishermen with safe all-weather landing places.

Generally speaking, port authorities in the larger harbours are not interested in providing facilities for small scale fishermen whom they regard as being of little more than nuisance value compared to the lucrative merchant shipping fleets. Modest facilities are available to fishermen in Cotonou and Lome and the shelter provided enables the canoes to operate year round regardless of surf. There is an enormous need for protection for the huge fleet of Ghanian canoes operating from the beach near Accra.

Construction of breakwaters and jetties would greatly relieve the artisanal fleet of the hazards it faces from surf, and of the work involved in beaching and launching vessels. It would also permit the development of an "offshore" artisanal fleet. Fishermen are already using larger nets and seeking to go further afield, but they are constrained by the size of their vessels.

The present Ghana canoe can not be made any larger than about 17 x 1.65 metres. This is partly because there are so few large trees but also because, beyond that size the boats would be too heavy to pull up on the shore and the logs would tend to crack under the weight/length ratio strains of beaching. Some fishermen are adding planks to the top sides of their canoes to increase size, but this is tending to reduce overall stability. Provision of sheltered harbours would remove the size constraint to canoes and allow the fishermen to operate larger planked boats for offshore fishing.

Development of new types of beachable canoes will therefore enable replacement of ageing dugout canoes, but the development of larger offshore artisanal craft will require the construction of harbours or breakwaters.

Proper harbour construction is probably too expensive to contemplate except perhaps as extensions to existing ports. Breakwaters and jetties are not cheap either but might be justifiable for the larger fleets of canoes as are found in Ghana and Senegal.

A 200 metre breakwater in 3 to 5 metres of water would require some 3,000 m3 of rock. This would probably be the smallest size that might give sufficient protection. If fishermen were to cooperate in construction on, say, a food for work basis, then some 3 - 6 thousand man/days might suffice to bring stores from the end of the nearest road to canoes and to the breakwater site. So a hundred men or women working for 2 months could complete the labour part of the job, given good weather. The labour component might then cost about $10,000 for food plus $10,000 in cash. The rock fill could cost anything from $50,000 to $250,000 depending on distance and availability. Design and engineering work may involve a similar amount as would the jetty construction. So realistically one would require at least half a million dollars to attempt the task. Two hundred canoes using such a facility and paying $10 each per week could realise $100,000 a year, sufficient to amortize a loan of $0.5 million. So the breakwater idea may be feasible for the larger communities of beach landing fishermen as are found on the Ghana coast.

PROPOSAL

It is therefore proposed that a regional programme be inaugurated to promote and co-ordinate efforts to facilitate technological change and expansion of West Africa's marine fish capture industries.

3. PROJECT OBJECTIVE

To promote and ensure the long-term efficiency and prosperity of the marine fisheries of West Africa by providing vita. assistance and co-ordination in fishing boat and harbour development.

4. OUTPUTS

4.1 OUTPUT 1

A bank of information on fishing boat designs, boatyards, fishing harbours and landing places in West Africa, and current national activities in these fields.

Activities for Output 1

4.1.1 Assembly and documentation of all available plans, reports, studies, records and publications on fishing boats and harbours in West Africa. This exercise to include copying of national reports and documents for which copies are not available.
Responsible persons: Project Consultants.

4.2 OUTPUT 2

Evaluation of current plans for harbours and landing places and co-ordination of this with existing projects and technical data, and with existing projects and technical data, and with proposed commodity aid.

Activities for Output 2

4.2.1 Liaison with Government fishery and harbours officials and with related technical projects.

4.2.2. Regional meeting and consultation on fishing harbours and fishing boat requirements.

4.2.3 Liaison with donors and selection of sites for floating breakwaters. Technical advice on construction and maintenance.

4.2.4 Dissemination of information resulting from harbour and breakwaters installation to fisheries and harbour authorities in the region.
Responsible person: Harbours Consultant, with inputs from other consultant.

4.3 OUTPUT 3

Evaluation of the needs of boatyards and fishermen and assistance in the design and construction of new types of fishing craft.

Activities for Output 3

4.3.1 Survey of boatyards in the region and consultation with related field projects.

4.3.2 Regional meeting on fishing boat design and construction (together with regional harbours meeting).

4.3.3 Dissemination of information on design and construction of boats which prove to be suitable.
Responsible person: Fishing Boats Consultant, assisted by Fishing Technology Consultant.

4.4 OUTPUT 4

Identification and promotion of technological changes in fishing operations related to the use of new types or larger boats, and use of harbours or protected landing places.

Activities for Output 4

4.4.1 Consultations with local fishermen and related projects on technological constraints and goals of the marine fishermen.

4.4.2 Technical advice to Fishing Boats and Fishing Harbours consultants on fishermen's requirements.

4.4.3 Assistance to local fishermen and projects in operation of first series of prototype vessels.

4.4.4 Dissemination of information on fishing technologies with new vessels and from new landing sites.
Responsible person: Fishing Technologist Consultant, with inputs from Boat Building Consultant.

5. INPUTS

The programme would be co-ordinated by UNIDO and would have the following inputs:-

Breakwaters and harbours consultants	9 man months	$48,000
Boat building consultants	9 man months	$48,000
Masterfisherman consultants	6 man months	$25,000
Regional consultants	12 man months	$18,000
Regional travel		$45,000
Support to local projects		$35,000
National and regional meetings		$26.000
Miscellaneous		$ 5,000
Overheads 13%		$33,000
	Total	$283,000

6. PROGRAMME OF WORK

Month	
1	Consultation in UNIDO, with inputs from FAO and regional experts
2 - 6	National reports by regional consultants based on guidelines by the UNIDO/FAO/Regional consultation
6 - 12	Liaison with national projects which have related activities in boats and boatyard development, harbours or landing places
13	First visit and report by boatbuilding and harbour consultants
15	Report to countries on first expert consultancy
16	Selection of particular sites for landing place development and of specifications for offshore artisanal craft
17	Second consultancy visit and report
19 - 24	On site work to develop sites and vessels in cooperation with national projects
26	Second UNIDO/FAO consultation
28 - 30	Further surveys and reports by Regional consultants
32	Third consultancy visit
35	Regional conference and workshop on progress .
36	Designs and recommendations

7. BUDGET

CONSULTANTS	m/m	$
Breakwaters and harbours	9	$48,000
Boat design and construction	9	$48,000
Fishing technology	5	$25,000
Regional consultants	12	$18,000
Travel and d.s.a.		$45,000
Training and consultations		$26,000
Equipment support for national projects (drawings, patterns, specialist tools, etc.) and copying of documents		$30,000
Miscellaneous		$ 5,000
UN Agency overheads		$33,000
TOTAL		$283,000

0018a

PROJECT CONCEPT

UNIDO

REGIONAL TECHNICAL ASSISTANCE AND PROJECT SUPPORT PROGRAMME FOR WEST AFRICA

DEVELOPMENT OF MANAGEMENT STRUCTURES ORGANISATIONAL SYSTEMS AND TRAINING MATERIALS FOR THE FISHERY INDUSTRY SECTOR, WEST AFRICA

PROGRAMME COST	$ 125,000
PROGRAMME DURATION	12 months
REGION SERVED	West Africa

(Mauritania - Cameroon)

BRIEF DESCRIPTION The UNIDO integrated programme for the industrial development of fisheries in West Africa has identified over 20 technical assistance projects and several investment projects. Among the regional issues of vital importance to development progress was that of management and organisation. Abundance of natural resources, and individual educational attainments are not in themselves adequate if there is no corporate competence and managerial skill. The few present successful projects in the region have all paid considerable attention to management.

Management systems and organisational structures need to be selected with care and made appropriate to West Africa's needs. Both social and economic systems should be used and integrated as far as possible. The project will do this with four currently successful models dealing with resource analysis and use, people's participation, networking of production and marketing and economic/financial analysis. The refined tools and didactic material produced will be used to backstop and support the management element in all of the programme projects.

BACKGROUND

The UNIDO programme for the industrial development of fisheries in West Africa is an integrated development effort whose proposals form a package of related assistance and investment designed together to tackle major regional issues and constraints to development. Effective management and thorough integration are key elements in the programme, all based on a careful study of the key success factors in existing projects.

The integrated approach must involve analysis of natural and human resources and in a participating approach with the communities, decide on the most appropriate mix of produce and technologies for each area or community. Examples of successful use of this approach are the GTZ integrated fisheries projects in Benin and Sierra Leone, NGO fish processing work in Togo, UNIDO growth centres and ILO construction of roads and wells in rural areas in the region. These are all impact projects based on people's participation and designed for sustainability. The FAO integrated fisheries project in Shenge, Sierra Leone, has raised the value of local fish production from less than one to over four million dollars a year. Village people interviewed expressed the unsolicited comment that what they liked about the project was not just the income generated, but the fact that everyone in the community benefited from the project.

Programmes and projects for West Africa should therefore be based on proven approaches and successful models. The following proposals for integrated development of primary industry in rural fishing communities are based on four such models. The models which are presently in use, deal with four vital activities essential to integrated project success.

These are: 1. Resource assessment and planning
2. People's participation and local enterprise
3. Production management systems and area development
4. Economic analysis, project viability and monitoring

Training technology transfer and small scale industrialisation are essential components of the programme, particularly management training which is of key importance in developing the organisational competence and stuctures without which little progress is possible.

The four models will serve as guides and patterns for regional strategies and for individual project design and execution. Briefly they can be summarised as follows:

RESOURCE ASSESSMENT AND PLANNING This is the "Maputo" model which was developed at the Agrarian Training Centre Mozambique by an imaginative team led by A. Jaqin of FAO. The model is focussed on nutritional, energy and housing needs and utilises all the best available data on soil types, climate, rainfall and production coefficients for particular crops or animals. In

these respects it follows approved methodologies for resource assessment and production planning. But what makes the Maputo model unique is its imaginative use of hands-on models and visual displays. Scale models and symbols are so matched to enable calculations and assessments of alternatives and scenarios without recourse to computers or calculators. Rather as the "cuisinaire" system of coloured blocks enables a child to grasp the principles of advanced calculus, so the Maputo model can be appreciated by illiterate peasants, though it can also be used like a computer by university graduates. Students trained in its use have constructed village models on site and with their help enabled village leaders to appreciate and enter into the resource assessment and production planning activity.

It is recommended that this powerful didactic tool be developed for West Africa and that national community managers be trained in resource assessment and production planning using the model on a regional, national and community level.

PEOPLES PARTICIPATION AND LOCAL ENTERPRISE This is the "Shenge" model developed in Sierra Leone for integrated fisheries development, though other similar projects might have been taken as models, such as the GT2 Tombo project.

From the start it was determined at Shenge to identify the village power structures and authority figures - tribal, religious, economic, social and government, and to involve them as far as possible in the project activities. No work was to be undertaken without the agreement and support of the community as represented by its influential groups and individuals. This necessitated patience and took time to achieve, but once the participation was realised it largely ensured success because of the expressed commitment of the people.

The local involvement then laid the basis for a further goal of the project, namely the "localisation" or privatisation (for want of a better word) of all project activities so that on disengagement at the conclusion of the external support, the economic activities would continue under local ownership and management. The particular structure of individual enterprises varied enormously but in each case it was local people who had ownership and management.

In Shenge and its twelve associated villages, fish production was increased to over 14,000 tons with a landed value of $2.8 million and a processed (smoked) value of over $4 million. Local boat building and engine maintenance workshops were established, plus a cooperative fuel depot, a gear store and numerous advanced "chorkor" style fish ovens. Service industries were able to grow in the new atmosphere of economic activity. These included fuelwood supplies, transport (land and water), foodstalls, hairdressers, tailors, and even a guesthouse and restuarant of remarkable quality.

The Shenge model should be used as a guiding example in people's participation and enterprise development. It would be particularly appropriate in the Bonthe/Sherbro area where conditions are very similar and the soon completion of an access road and bridge will stimulate trade and commerce.

PRODUCTION MANAGEMENT SYSTEMS AND AREA DEVELOPMENT A key to increased production and added value is the introduction of management on an area basis so that small producers can share the costs of harvesting, processing and marketing facilities. It demands a degree of organisation and cooperation which can grow and be strengthened as the benefits of lower costs and greater revenues are realised.

The project may use the "Negros" model for this aspect of its work. In the island of Negros thousands of peasant families were left impoverished when the collapse of the sugar market left them without even the meagre cash incomes they received from the huge local sugar plantations. Each family however had a small vegetable garden, a few fruit trees and some pigs, ducks or chickens. It was decided to augment their household productions under as area development programme which would be networked by local community managers.

Each community selected its candidate for training and cooperated in the resource inventory. It was discovered that the combined production of the households could support a slaughterhouse and ham processing plant, duck, chicken and egg marketing outlets, flour mills, fruit driers and cooperative market outlets for baked foods, fermented fish, shellcraft, carpentry items and homemade dresses and shirts. Local tricycle type transport was promoted as well as other service industries. The graduation of trained community managers was treated as a "fiesta" occasion by the communities whose participation in the system and in the area development had given them an independence and income level they could never hope to have from the sugar plantations.

A similar area development and management system adapted for West Africa could be a splendid complement to and link between the resource assessment and planning work and the people's participation and enterprise development.

ECONOMIC ANALYSIS, PROJECT VIABILITY AND MONITORING Assessment of the viability and economic benefits of given production systems is a complex matter and requires consideration of all costs and benefits including foreign exchange elements, government revenues, loans and depreciation. For primary industries, a method developed by UNIDO is proving to be both useful and adaptable. It was developed first for oils and fats industries and is now being applied to fisheries and to agriculture mechanisation.

The attraction of the MEPS model is its versatility, and the speed with which it can provide a general analysis of a variety of production systems and alternatives. It can be used for a

peasant or artisanal industry as well as a highly developed one, and can be adapted to any kind of production system whether primary, secondary or service in nature.

The MEPS model has been used to obtain a general economic picture of the artisanal and industrial fisheries of West Africa, and to develop alternatives for improved production in both sectors. It is proposed that the same tool be used to evaluate individual systems as they are established by projects, and to monitor their progress. It is a simple matter once the data is in place to modify it as costs and production coefficients change and thus to obtain regular up to date analyses of project performance.

It will greatly assist the Governments which have industrial or commercial fisheries, to see at a glance the range of costs and benefits accruing from any changes to the structure of the industry.

Adaptation and refinement of the model would be one of the tasks of the regional project which would also provide training in its use to national personnel.

The four models to be used as tools and methodologies for project work are complementary and supportive of each other. They are models which have proved themselves in development work for both small and large scale industries and for fisheries and other primary industries.

PROJECT TASK

This project or piece of technical assistance is to apply the successful approaches to West African needs, to integrate them into a coherent whole and strategy, and to translate them into didactic material and training exercise for use in the field projects.

PROJECT OBJECTIVE

The objective is the efficient management and organisation of all fishery related industry development, and the application and continued use of successful systems of corporate management in the region in both rural and urban contexts.

OUTPUTS

1. A resource assessment and optimum production model adapted to fisheries areas of Africa with full instructions and guidelines for its use and application.
   Responsible person: Maputo Consultant

2. A model and framework for people's participation in rural fisheries development, and in the networking of production by small producers.
   Responsible person: Negros Consultant

3. Management training procedures and systems for rural fisheries areas in Africa, incorporating people's participation, MEPS, and resource models.
Responsible persons: Management Training Consultant and UNIDO staff

4. Didactic material in French and English languages for use by projects using the approved models and approaches, and by all UNIDO Primary Industry Projects in Africa.
Responsible person: Training Consultant

5. Economic analysis tool applied to rural fisheries industries and fisheries area development in Africa, made user-friendly and supplied in French and English.
Responsible person: Sub-contractor

6. Fisheries officials and project staffs in West Africa trained in the use and application of the above models and materials.
Responsible persons: Consultants and UNIDO staff

7. Finalised copies of material distributed to all field projects in West Africa dealing with fisheries and rural development, and made available to other interested parties.
Responsible persons: UNIDO PDSU staff

ACTIVITIES

		MONTH
1. Expert consultation on the integration and application of selected successful systems	UNIDO Vienna	1
(a) Natural resources analysis and utilisation in the African context, with special reference to environmental protection and production optimisation	A.Jaquin FAO Maputo	
(b) People's participation and networking of production and marketing for small scale or rural producers	Sixto Roxas AIM Philippines	
(c) Managerial and corporate training in the African context with reference to MEP PP, and NRA above	R. Mullin Open University	
(d) Project goals and strategies, UNIDO staff, UNIDO and FAO consultants	S.de Buckle & Staff Thomson & Cortez	
2. Preparation of integrated didactic material based on consultation report and decisions	Expert consultants and staff	2-3

3.	Work on MEPS software to accommodate other models and make more efficient and user friendly		3-6
4.	Regional meeting to introduce systems and materials and to discuss their applications in individual projects West Africa	UNIDO staff and field project officials	7
5.	First field project training exercises incorporating management and organisation programmes	Field staff and consultant	9-10
6.	Finalisation of material and training activities and distribution to all field projects		11-12

INPUTS

	$
Consultants	24,000
Travel (incl. UNIDO staff)	16,000
Publications (in two languages)	17,000
Sub-contracts (systems development)	48,000
Miscellaneous	5,000
U.N. Overheads 13% 14,000	
TOTAL	125,000

RELEVANT PAPERS

1. Integrated artisanal fisheries development
   Planning and Participation FAO IDAF/DANIDA/NORAD

2. EDMS the Economic District Management System
   Sixto K. Roxas Foundation for Community Organisation and Management Technology

3. The Coming of the New Organisation
   Peter F. Drucker Harvard Business Review

4. Economic District Management System
   J. P. Cortez FAO Fisheries Industries Division

5. The Application of a Programme Approach to Technical Assistance UNIDO P.A.S. Oct. 1988

6. Itegrated Sector Programming (Mission Kit)
   UNIDO core group 27 May 1988

7. Other publications

   FAO IDAF reports 1986 - 1989
   FAO Fishing Industry Paper UNIDO Cons Gdansk 1987
   M. Fairlie A New Role for District Managers 1989

BUDGET

CONSULTANTS	travel	dsa	man weeks	$
Maputo model consultant	2400	2000	3	$ 3,600
Negros model consultant	2600	1400	2	$ 2,800
Fish industries consultant	1200	2000	4	$ 5,600
Training consultant	1200	2000	8	$10,000
	1200	2000		

Travel and d.s.a. (including for FAO expert)	$18,000
Sub-contracts	$48,000
Publications	$17,500
Miscellaneous	$ 5,000
U.N. Agency overheads	$14,000
TOTAL	$125,000

REGIONAL TECHICAL ASSISTANCE PROJECT

WEST AFRICA

INDUSTRIAL MANAGEMENT SKILLS FOR FISHERY INDUSTRY SECTOR

PROGRAMME COST: $180,000
PROGRAMME DURATION: 24 months
REGION SERVED: West Africa, Benin to Gambia

BRIEF DESCRIPTION

The officers and staff of fishery industry enterprises require training in commercial management and business skills to enable them to operate well as a team and to ensure the success and progress of their companies. The training should be rigorous and practical and conducted as far as possible "on the job" to develop motivation, and to see individual functions and roles as part of a corporate task. This kind of group management training is now well developed and applied to both private sector and government bodies. To apply such training effectively to the fish industry sector the project will develop materials and programmes that incorporate financial analysis, manpower development, business and industry strategy, all geared to the sector and based on real situations.

In addition to group training and provision of materials, the project will provide analysis and decision making advice and orientation for all directors and owners of fishery enterprises in the region.

PART A: CONTEXT

The coastal states of West Africa have as a priority development goal their increased participation in the offshore fisheries which are presently dominated by the distant water fleets of foreign industrialised countries. Involvement in the offshore fishery worth over a billion dollars annually will reap great rewards for participating states, but it will also involve them in the development of local enterprises to undertake capture, processing, marine engineering, refrigeration, vessel repair, gear manufacture, transport and

bundering services. The technologies for all these support industries can be purchased, but the human skills and corporate abilities required to operate them as successful businesses are often overlooked. As a result there are countless cases in West Africa of fishery companies which collapsed, not from lack of capital or markets but from poor management and insufficient teamwork.

One result of these facilities is the use of joint ventures to establish industries, with the foreign partner providing the management skills. But if there is no transfer of skills then the joint venture will become a permanent rather than a temporary feature. Industrialisation of African offshore fisheries will come to pass only after local firms have developed corporate skills as well as purchased technology.

There is a growing awareness in the region of the need to focus on management competence and group functions in industry and both Governments and Private Sector are opening their doors to, and seeking this assistance. Company directors are also eager for help to develop their business analysis and decision making powers which should be part of any industrial management programme.

The project is designed to provide the necessary applied skills training and to assist key national enterprises to develop their operational efficiency.

PART B: PROJECT JUSTIFICATION

1. Problem to be addressed

West Africa is a resource rich region in minerals, in forestry, in agriculture and in fisheries. It has large stocks of valuable species off its shares - tunas, sardine, mackerel, shrimp and demersal species. The region also boasts many natural deep water harbours and strategic sites for industrial development, with ample fresh water and communications. The human resources are also substantial and manpower is available at low or modest cost for both labouring and professional work. However, despite the wealth of resources, the region has yet to realise a major share in the offshore fisheries which yield over a billion dollars annually in fish produce alone. If the value of post harvest and fleet service industries were added, the offshore fishery could support another $0.5 billion of business.

Apart from the region's share in joint venture activities, it is obtaining very little from the offshore fisheries, perhaps some $50 million in licenses and royalties plus some fish supplies as payment in kind. But the industrial benefits, the jobs, the businesses, the lucrative services, are barely present. This is not for the lack of local businessmen willing to invest or take risks, but rather that too many such have had difficulty achieving the levels of efficiency necessary to stay in business and to grow.

It is of course essential to obtain the right equipment and to have a workforce with adequate technical skills. But on top of these requirements it is absolutely necessary in industry to have corporate skills and managerial abilities. This is often the key part of the "invisible 7/8ths of the industrial iceberg" without which the enterprise will not float.

To address this problem, UNIDO proposes to develop management tools and training programmes, and to apply these in providing corporate training for key fish industry enterprises in the region.

2. Expected end of project situation

National fishery enterprises in Gambia, Sierra Leone, Ghana and other West African states with fisheries industrial sector investment programmes will be functioning well under improved management. This will be seen in increased production, lowered costs and improved profits. The improvements will have been generated by clear progress in management efficiency and group performance.

Eight such enterprises will have been given direct training assistance and the materials and exercises developed during the programme will be supplied in a manual form and made available to the region through UNIDO. UNIDO will also have updated and streamlined management tools for direct use by fishery sector industries in the region.

In addition to staff group training and development of corporate skills the project will provide professional advice and support to the directors or owners of the companies. This will be related to decision making and systems analysis as well as manpower management. The value and usefulness of the UNIDO management tools will be stressed.

The impact of the assistance on the industrial sector will create wider interest from both public and commercial bodies and will result in a regional demand for such services by the fish industry sector. The work can then be largely undertaken by private management training and consulting firms but with the support and guidance of UNIDO (in terms of tools, systems, materials) for bona fide firms in the sector.

3. Target beneficiaries

The target beneficiaries of the project are, firstly, the managers and staff of key national fish industry businesses in the target countries. They and their companies will benefit directly in improved performance and profits.

The secondary target group are the owners, managers and staffs of all existing and potential fish industry enterprises in the region who will be exposed to the benefits of management training and corporate skills and who will be able to obtain similar assistance with UNIDO guidance, albeit at a commercial rate.

The third target beneficiary is the whole fisheries industry of West Africa which is languishing through lack of management skills (among other things) and is thus being prevented from participating substantially in the lucrative offshore fisheries.

The fourth major beneficiaries are the Governments who are extremely short of foreign currency and wish to raise the national foreign currency earnings and increase employment. Both these goals would be realised if industrial efficiency could be applied to the fishery sector.

4. Project strategy and institutional arrangements

Key local enterprises in the target countries will be identified as possible recipients of training. This identification will take place in cooperation with Government fishery and industry departments. Those who apply for training and can wholeheartedly cooperate with the programme will be accepted. As the training is geared towards company performance improvements, it must take place within the firm in a working or operational atmosphere. For this reason, it may be difficult to serve more than one enterprise at one time unless they are very closely linked.

5. Reasons for assistance from UNDP/UNIDO

It is generally agreed that the success of investment projects and industrial development programmes in West Africa will depend to a very large degree on their management. This "invisible" element, while it can be incorporated to some extent in individual projects, needs to be strengthened, especially for local enterprises which may have been established only indirectly with assistance from UN or IBRD.

Any investment in management and organisational skills and performance will help enormously to reduce the risk of failure or poor performance which has plagued national fish industry enterprises in the region. The UN assistance is therefore most appropriate.

6. Special considerations

It would scarcely be possible or financially feasible to provide the training and support to every ready FIS enterprise or organisation. The strategy therefore is concentrate attention on a few and to publicise the positive results of the exercises.

This will focus attention on the value of professionalism in management and create a regional interest in and demand for similar services. The project should therefore compile materials and tools used and have these available in UNIDO to other interested companies who could employ professional management consultants but obtain the use of UNIDO materials at a subsidised rate.

7. Coordination arrangements

UNIDO will hire a mangement training consultant with experience of industrial corporate training, of fishery industries and of developing country situations and manpower development programmes. He will draw up the programme in consultation with UNIDO and client companies and will execute it in the field in the selected enterprises.

Within each country the consultant will liaise closely with the UNIDO representative, with UNDP and FAO officials, with Government fishery and industry department officials and most importantly, with the owners and directors of the industries.

Material compiled during the management analysis and corporate skills development programme will be treated as confidential and will not be released to any third party. The consultant will however draw basic lessons from each situation and will compile these into scenarios for the guidance of other groups of trainees.

8. Counterpart support capacity

In this project the counterpart officers will be the industry managers. Government officials will assist with arrangements and coordination but they will not be required to play any active role.

PART C: DEVELOPMENT OBJECTIVE

The objectives of the project is the efficient management and operation of fish industry sector enterprises in West Africa.

PART D: IMMEDIATE OBJECTIVES, OUTPUTS AND ACTIVITIES

1. Immediate objective 1

The production of the management tools, training programme and materials.

1.1 Output 1

A management systems analysis programme and group training strategies and exercises for fish industry enterprises in West Africa.

Activities for output 1	to be completed by	responsible staff
1.1.1 UNIDO/CONSULTANT agreement on programme content and strategy	month 1	UNIDO and Consultant
1.1.2 Detailed programme and exercises, applied to FIS situations and enterprises	month 3	Consultant
1.1.3 Financial and production efficiency management tools appropriate to West Africa and streamlined for user friendliness (including MEPS systems)	month 1-6	Sub-contract

1.2 Output 2

Training programmes and management systems advice and materials applied in eight strategic FIS enterprises in the region.

Activities for output 2	to be completed by	responsible person
1.2.1 Identification of enterprises to receive training and finalisation of schedule	month 3-6	UNIDO national officials and representatives
First 2 courses	month 8	Consultant
1.2.2 Second 2 courses	month 10	Consultant
1.2.3 Third 2 courses	month 14	Consultant
1.2.4 Fourth 2 courses	month 16	Consultant

1.3 Output 3

Refined package of management tools and training programmes with exercises based on real West Africa fish industry situations.

Activities for output 3	to be completed by	responsible person
Analysis of results of industry training and management exercises	month 18	Consultant
Compilation of refined package	month 19-22	Consultant
Review and acceptance by UNIDO	month 23	UNIDO

PART E: INPUTS

1. National Inputs

Government assistance and provision of liaison officers and/or transport value in kind	$ 8,000
Client industry enterprises provision of facilities and support value in kind	$16,000

2. UNDP/UNIDO inputs

Consultancies: Management training and systems analyst consultant 8 m. months	$ 48,000
Air travel and d.s.a.	$ 29,000
Local assistance and labour	$ 7,000
Training tools, refined management systems, course materials and final manual	$ 83,000
Transport and communication	$ 13,000
T O T A L	$180,000

PART F: RISKS

The risks inherent in this project are mainly concerned with the relatively short time scale and modest inputs. However, it is firmly believed that the application of effective corporate skills training and management systems analysis advice should have immediate or short-term impact on the client industry enterprises.

It is vital that an adequate amount be spent on preparation of the management tools and systems which will include financial and economic analysis for fisheries industries in West Africa. The final tools and materials, in two languages will be available through UNIDO for FIS management training for years to come.

The risks of not providing the sector with management skills training at this time are much greater those concerned with the project.

PART G: PRIOR OBLIGATIONS AND PREREQUISITES

1. Prior Obligations

The Project Document will be signed by UNDP, and UNDP assistance to the project will be provided only if the prior obligations stipulated above have been met to UNDP's satisfaction.

2. Prerequisites

The Project Document will be signed by UNDP, and UNDP assistance to the project will be provided, subject to UNDP receiving satisfaction that the prerequisites listed above have been fulfilled, or are likely to be fulfilled. When anticipated fulfillment of one or more prerequisites fails to materialize, UNDP may, at its descretion, either suspend or terminate its assistance.

PART H: PROJECT REVIEWS, REPORTING AND EVALUATION

1. The project will be subject to tripartite review (joint review by representatives of the governement, executing agency and UNDP) at least once every 12 months, the first such meeting to be held within the first 12 months of the start of full implementation. The national project co-ordinator and/or senior project officer of the United Nations executing agency shall prepare and submit to the UNDP Field Performance Evaluation Report (FPER). Additional FPERs may be requested, if necessary, during the project.

2. A project terminal report will be prepared for consideration at the terminal tripartite review meeting. It shall be prepared in draft sufficiently in advance to allow review and technical clearance by the executing agency at least four months prior to the terminal tripartite review.

3. The project shall be subject to evaluation months after the start of full implementation. The organisation, terms of reference and timing will be decided after consultation between the parties involved in the project.

PART I: LEGAL CONTEXT

This Project Document shall be the instrument referred to as such in Article I of the Standard Basic Assistance Agreement between the Government of and the United Nations Development Programme, signed by the Parties on .

The Host Country Implementing Agency shall, for the purpose of the Standard Basic Assistance Agreement, refer to the Government Co-operation Agency described in that Agreement.

The following types of revisions may be made to this project document with the signature of the UNDP resident representative only, provided he or she is assured that the other signatories of the project document have no objections to the proposed changes:

1. Revisions in, or addition of, any of the annexes of th project document with the exception of the Standard Legal Text for non-SBAA countries which may not be altered and the agreement to which is a pre-condition for UNDP assistance). (This language is to be added in those cases where the host country has not signed the SBAA.)

2. Revisions which do not involve significant changes in the immediate objectives, outputs or activities of a project, but are caused by the rearrangement of inputs agreed to or by cost increases due to inflation; and

3. Mandatory annual revisions which rephase the delivery of agreed project inputs or increased expert or other costs due to inflation or take into account agency expenditure flexability.

PART J: BUDGETS

		TOTAL		YEAR 1		YEAR 2	
	International experts	m/m	$	m/m	$	m/m	$
11-50	Consultant Management Training	8	$48,000	4	$24,000	4	$24,000
13-00	Admin Support Personnell		$10,000		$ 5,000		$ 5,000
15-00	Project Travel and DSA		$26,000		$13,000		$13,000
19-99	Total Personal Component		$84,000		$42,000		$42,000
24-00	Sub-contracts		$57,000		$57,000		-
	Lotus streamlining and translation of revised MEPS models and copying onto compatible discs						
33-00	In-service Training Equipment		$ 9,000		$ 3,000		$ 6,000
41-00	Training Materials		$22,000		$10,000		$12,000
51-00	Miscellaneous - Sundries and reporting		$ 8,000		$ 3,000		$ 5,000
99-99	PROJECT TOTAL		$180,000				