

III PRIORITY PROGRAMMES

CHAPTER 3 PRIORITY PROGRAMMES

1 COMPOSITION OF PRIORITY PROGRAMMES

This Master Plan provides 15 priority programmes in order to achieve basic concepts and development strategies explained in Chapter 2. Composition of programmes is shown the table below.

Table 3-1 Priority Programmes and Development Strategies in Master Plan

Priority Programmes	Development Strategies														
	Basic Concept 1: Stable Supply of Fish for Domestic Consumption	Strengthening Fisheries Cooperatives/ Organizations	Improvement of Fishing Technologies and Extension	Reduction of Post Harvest Losses and Provision of the Fish Utilization by Shifting from Nonfood to Food Purpose	Reduction of Marketing Costs and Development of Fish Distribution System	Implementation of Feasibility Study on Aquaculture and Establishment of a Development Model	Basic Concept 2: Sustainable Use of Fishery Resources	Strengthening of Fishers Organizations for Resource Co-management	Publishing of Fisheries Statistics (1997) and Preparation of Effective Data Processing System	Implementation of Monitoring on Fisheries Activities and Collection of Biological Information on Catches at Major Landing Sites	Basic Concept 3: Sustainable Development of Fish Exports	Implementation of Market Survey on Tanzanian Fish Product	Strengthening of the Competitiveness of Export Product by Improving Quality Control Capabilities	Basic Concept 4: Reduction of Poverty and Improvement of the Livelihood in the Fisheries Communities	Porting of Fisheries Community Organization and Improvement of Institutional Capabilities of Fishing Villages
1 Marine Fisheries Sub-sector Capacity Building Programme	●	●			●										
2 Dar es Salaam Fisheries Infrastructure Improvement Programme	●			○											
3 Lake Victoria Fisheries Sub-sector Capacity Building Programme	●	●	●												
4 Lake Victoria Fish Marketing Improvement Programme	●	○		■											
5 Lake Tanganyika Dagua Fisheries Development Programme	●		●	■											
6 Lake Nyasa Planked Canoe Extension Programme	●		●										●		
7 Aquaculture Extension Programme	●				●										
8 Fisheries Financial Support Programme	●													●	
9 Fisheries Co-management Programme						●	●								●
10 National Fish Export Promotion Programme										●	●	■			
11 Lake Victoria Major Landing Beach Improvement Programme				○						●	●	■	●	●	
12 Fisheries Communities Development Programme		●											●	●	●
13 Fisheries Information System Improvement Programme						●		●	●					●	
14 Fishing Training Institute Improvement Programme														●	●
15 Fisheries Master Plan Implementation Training Programme														●	●

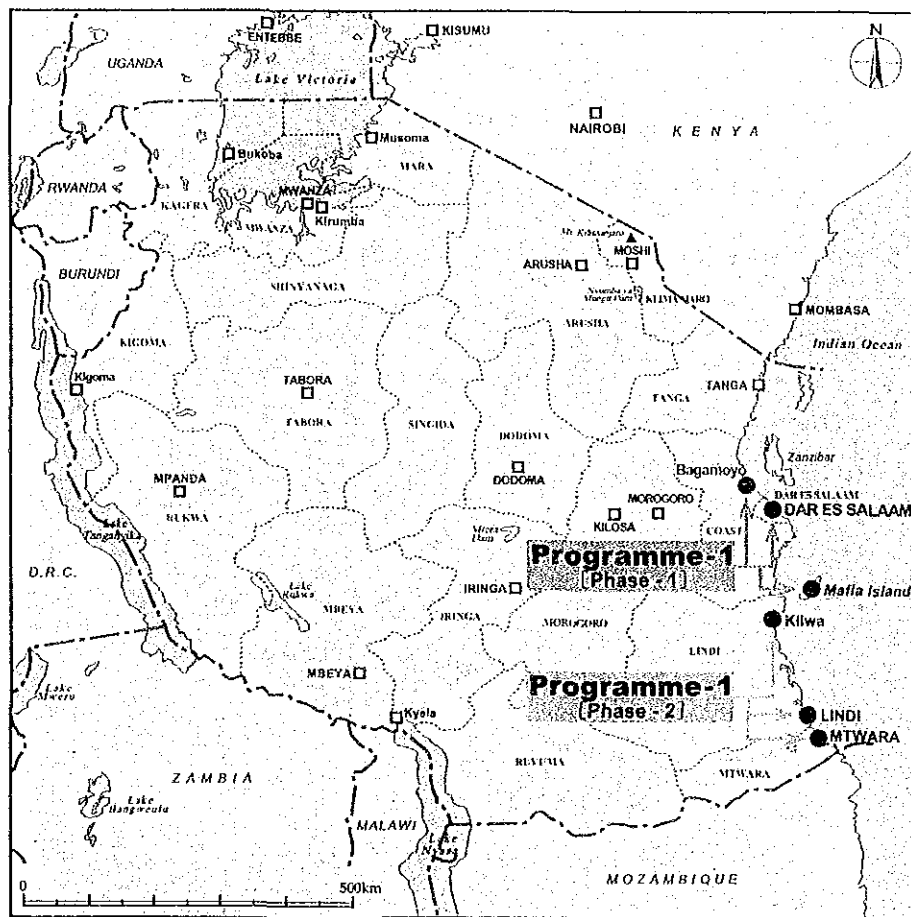
● Soft component such as technical support (● direct impact, ○ indirect impact)
■ Hard component such as building infrastructure and providing equipment

2 PRIORITY PROGRAMMES

Each 15 Priority Programme is Explained Individually Starting from the Next Page.

Programme-1

2.1 Marine Fisheries Sub-sector Capacity Building Programme Phase - 1 & Phase - 2



Planning site :

[Phase - 1] Dar es Salaam, Bagamoyo, Mafia Island

[Phase - 2] Kilwa, Lindi, Mtwara



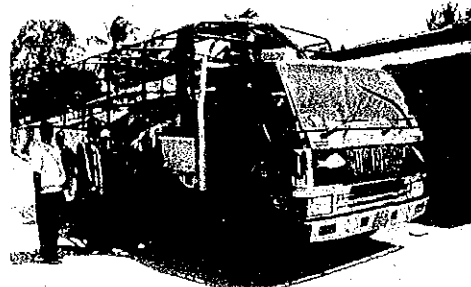
UWAWADA fishers cooperative's meeting in Dar es Salaam.



Fisher cooperative on Mafia Island.



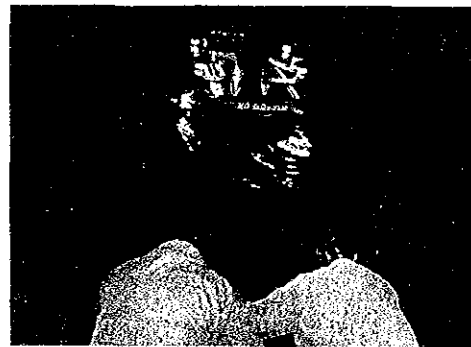
Packing fish into wooden boxes with ice in Mafia Island ready for transport to Dar es Salaam market.



Transportation truck owned by MIKINGOMO fisher cooperative, Mafia Island.



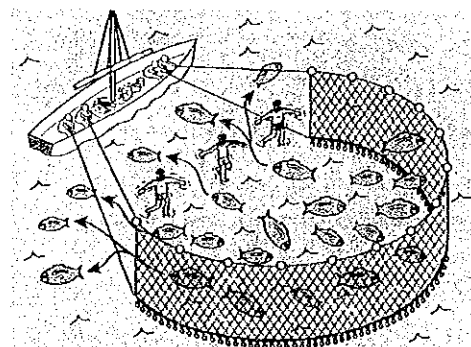
Fishing boats in Mafia Island that fish outside the reefs.



Night fishing on the coast.



Divers in the water to chase fish into the surround net.



The small size of the surround net requires divers in the water to chase fish into the net.

2.1 Marine Fisheries Sub-sector Capacity Building Programme

(1) Programme Description

A Description

This programme aims at raising fishers' capacity in fishing and marketing through supporting and strengthening fishers groups/ cooperatives.

The programme will consist of three components; (a) Strengthening fishers groups/cooperatives: this component is for fostering and strengthening fishers groups/cooperatives with education and supports with production means and credits. (b) Field training on fishing technique (OJT): This component is for assisting young fishers to acquire fishing techniques in the traditional training system with a fishing boat to be introduced. (c) Promotion of marketing: This component intends to establish marketing measures with joint shipment in cooperation of the fishers groups.

For the first phase, Dar es Salaam, Mafia and Bagamoyo are the target areas for the reason that Dar es Salaam has the largest population and demands of fish in the country and the biggest fishing fleet. Mafia and Bagamoyo are major fishing grounds near Dar es Salaam.

In the second phase, the southern areas (Mtwara Region and Lindi Region) will be the target areas because of their least development in fishery and remote areas from the Dar es Salaam market.

B	Target Areas	[1st Phase]	Dar es Salaam, Mafia District and Bagamoyo District
		[2nd Phase]	Mtwara District, Lindi District and Kilwa District
C	Duration	[1st Phase]	24 months
		[2nd Phase]	24 months

(2) Objectives and Justification

A Objectives

- 1) To verify that joint fishing and marketing in cooperation of groups contribute to raise fishers' income.
- 2) To establish models of cooperatives by providing technical and financial supports for advanced fishers groups/ cooperatives.
- 3) To promote increase of fish-supply in low price to Dar es Salaam by encouraging joint-work in cooperation of group.

B Justification

Many of fishers in Tanzania are in difficulty to obtain their fishing equipment due to shortage of funds. There is however some fishers groups who could procure their own fishing equipment with their savings and some financial support (loan of low interest) and have successfully conducted their fishing. For example, MIKINGAMO and MUSIKAMANO in Bweni village, Mafia embarked on their own fishing with their savings and some assistance (ANNEX. 2.1-2). As shown in these cases, the key factors for the success are i) to consolidate their confidence by organizing individual fishers in group, ii) to cultivate reliance among the members with their will and efforts, and iii) to get financial supports. It is essential for fishers to have their own will and aim to improve their situations and make efforts such as managing their money and saving for their aims. For the fishers making such efforts, it is possible to raise their ability by supporting their activities with technical and financial assistance.

Jointly working in-group is a useful way for fishers to gather their efforts for obtaining fishing equipment and increasing their fishing ability. Expecting these effects, many fishers' groups/ cooperatives were formed in the coastal areas, but most of them have not yet reached to a level of capacity creating the expected effects. It is required to foster these fishers' groups/ cooperatives and increase their capacity. This programme is to provide assistance and measures to increase capacity of the groups/ cooperatives so that they can be able to provide financial and technical services for their member fishers.

As a strategy for the coastal fishing, it is suggested that fishing ground be expanded from the traditional coastal reef waters to increase the catch by means of improvement of the fishing gears/ methods and upgrading of the capacity of fishing boats. It is because that there would be a limit in increase of catches if only depending on the fishing grounds traditionally exploited, even though they intensify their fishing efforts with the same boats and gears as before, and it would cause over-fishing in easily accessible inshore reef areas. In order to realize profits from fishing with management of the resources, they should develop ways to gain from fishing in new fishing grounds out of the traditionally exploited inshore fishing grounds. For this purpose, it is required to develop effective fishing technique together with cooperative work. According to this strategy, the fishing methods to be developed are purse seine targeting pelagic fish and gill nets (shark net), ring lines. For embarking these fishing, fishers need to acquire the fishing technique as well as to obtain necessary fishing equipment. This programme will therefore provide fishing training function on these fishing methods for fishers groups/ cooperatives in order to support their embarking the fishing out of the traditionally exploited coastal reef areas.

It is difficult to conduct practical fishing training and instructions for fishers in the existing training institutes or centers due to no fishing instructors for coastal fishers. It is practically difficult for fishers to join a training course, apart from their job for a certain period. In Tanzania, there are some fishers groups who acquired fishing skill by joining fishing boats as crew in order to start their own fishing. Such existing way to learn fishing skill should be highly evaluated and be promoted for supporting fishers to learn new fishing technique.

Such a chance is however not always given to the fishers who desire to join fishing boats for learning fishing skill in a certain period. Meeting those fishers' need, it can be an effective way to introduce a fishing boat and provide OJT for young fishers groups, joining on board as crew for a certain period in actual operation of the boat.

In fishing villages that do not have consumers markets, it is an essential approach for the fishers to jointly market their surplus catches to larger markets in other areas. In Mafia and Bagamoyo as target areas, this programme will realize joint marketing of catches to main consumers markets by promoting joint work in cooperation among the fishers. In these areas, there are some instances of marketing operations by advanced fishers groups such as MIKINGAM that invested in a boat to ship their catch in-group. Their management needs to be improved and there is a potential to increase benefits by joint work in cooperation among fishers groups. It is therefore expected that successful modes of joint marketing system can be established most effectively by supporting these fishers groups with technical assistance in these target areas.

(3) Components and Activities

[Phase- 1]

A Fisheries Cooperatives Capacity Building Component

This component is to provide instructions/ training on cooperative operation and management for the existing fishers organizations in accordance to their scales, objectives and activities.

There are following two categories in the fishers organizations; group which members are working together as a unit for production (production unit group) and cooperative composed of member fishers

including boat owners and aiming at services such as credit and joint purchase. The training is given to the prospective groups/ cooperatives selected from each category.

Target fishers groups for the first phase will be selected from Mafia and Bagamoyo, which are in the proximity of the major fishing grounds and within the range of fish-marketing in Dar es Salaam. In Mafia main island only, there are 18 fishers groups including voluntary groups. About ten to 15 groups will be selected as the target groups from these fishers groups in Mafia. There are three groups of fishers/ fish traders and one women's fish processing group in Bagamoyo. They are also considered as target groups. As the model cooperative, UWAWADA (UMOJA WA WAVUVI WADOGOWADOGO DAR ES SALAAM) will be selected because it is duly registered and active with the largest number of members in Dar es Salaam.

Activities 1: Basic survey on fishers groups and their needs: The district fishery officers carry out the survey in collaboration with the district cooperative officers to clarify the groups' background, number of members, activities management, services provided by administration and needs for training etc.

Education/ training for the production unit groups: The groups will be given training and guidance by cooperative experts on group's vision, mission, strategy and activities including, leadership, management of group activities, book-keeping and saving/financial management.

Activities 2: Education/training for cooperative:

The cooperative will be given training and guidance by cooperative experts on cooperative's vision, mission, strategy and activities. For management staff, the subjects include leadership, management of cooperatives activities, business management, book-keeping, saving/financial management and micro-finance system. For member fishers, the subjects include book-keeping and saving/financial management.

Activities 3: Procurement of equipment: The following equipment will be procured in Tanzania in principle for the groups and cooperative.

- Production equipment such as boats and fishing materials for the groups.
- Office equipment and fishing equipment for the cooperative
- Equipment for district fisheries officers and cooperative officers for supporting the groups.

Activities 4: Assistance to the production unit groups' activities:

- The groups will prepare activity plan through discussions and advise of District fishery officers and cooperative experts.
- Equipment will be provided for the groups
- District fishery officers and cooperative officers will monitor the groups' activities to give necessary instructions/advise.

Activities 5: Assistance for establishment of cooperative activities:

- Preparation of operation base: A base for activities is prepared with equipment procured.
- Preparation of micro-finance service: Saving and credit system is established under instructions of cooperative expert.
- Supply of fishing equipment: On condition to finish the education/ training of Activities 2 mentioned above, fishing equipment will be supplied as initial input for the groups/cooperatives with the following manners.
- The equipment is supplied on credit (low interest without collateral) and the groups/cooperatives shall repay for the equipment. All the members of the groups/cooperatives shall bear responsibilities for the repayment.
- The repayment shall be deposited and managed as funds for micro-finance system.

B Field Training Component

In order to assist fishers to embark in fishing out of the coastal traditional fishing grounds, this component will provide training means on purse seine fishing and some new fishing techniques for young fishers group.

It is most effective for fishers to learn fishing technique through actual fishing operation on board. Such a chance is however not always given to the fishers who desire to learn fishing technique in a certain period. This component will introduce a fishing boat to provide on the job training for young fishers desiring to learn fishing skills in actual fishing operation. The boat will belong to the cooperative and be directly managed and operated by the cooperative.

Activities 1: Procurement of fishing boat: A fishing boat will be constructed in order to provide on the job training for young fishers in its actual fishing operation. The boat is to be constructed in Dar es Salaam so as to make it possible to operate by experienced fishers and maintain/ repair by local boat carpenters. The boat will be prepared for purse seine fishing as its main fishing method for exploiting pelagic fish out of the coastal shallow water areas. This is the most effective fishing method and has most contributed to supply cheap fish for the population. In this training component, it will also try to introduce fishing with FAD (Fish Aggregating Device) as well as some new modern technology.

Activities 2: Operation of fishing boat: The boat will be directly managed and operated by the cooperative as its own boat under the supervision of Dar es Salaam, Municipal. Prior to the on the job training for young fishers groups, the master fisherman and crew of the boat will be trained on utilization of the new equipment introduced and fishing utilizing them, with instructions of a fishery expert. In actual fishing operation of the boat, the cooperative will provide on the job training for young fishers groups, joining the boat as crew in a certain periods. Number of the trainees will be about 5 persons in one training period, which will be 2 – 3 months. Besides, the cooperative will conduct demonstrations on the new fishing technology for the existing boat owners and master-fishers. (ANNEX. 2.1-3)

Activities 3: Making a fund for micro-credit: The cooperative will manage the boat in an account separated from other activities and raise a fund for micro-credit from the profit generated by fishing operation of the boat.

C Fish-Marketing Component

In Mafia, due to its small demand, the local fishers depend on buyers from Dar es Salaam for selling their catches. They are however at a disadvantage that they can not always sell their catches, furthermore the price is considerably low. To cope with this situation, joint shipment and sale of catches will be established in cooperation with the fishers groups.

With reconstruction of the road, Bagamoyo is at the most advanced position among regional major fishing areas for marketing of fish to Dar es Salaam. With this advantage, joint shipment and sale in cooperation with the fishers groups will be experimented to conduct fish-marketing to Dar es Salaam more economically.

Activities 1: Joint shipment and sale by Mafia fishers groups:

- Fishers groups intending joint shipment/sale of their catches will organize an association group for joint shipment/sale.
- Through discussions by member groups with assistance of cooperative expert and District fishery officers, they will prepare a management system including operation of transportation boat, sharing of cost and risk and settlement of sales money.
- Transportation boat will be constructed and necessary equipment will be procured.

- The management system will be established through experimental shipments.

Activities 2: Joint shipment and sale by Bagamoyo fishers groups:

- Fishers groups intending joint shipment/sale of their catches will organize an association group for joint shipment/sale.
- Through discussions by member groups with assistance of cooperative expert and District fishery officers, they will prepare a management system including operation of transportation boat, sharing of cost and risk and settlement of sales money.
- Necessary equipment will be procured.
- The management system will be established through experimental shipments.

[Phase- 2]

In the southern areas, Mtwara Region and Lindi Region, the fishing and marketing of fish are considerably smaller in scale than those in Dar es Salaam area, due to small scale of the local markets, distant from Dar es Salaam areas with bad road conditions. They have difficulties in obtaining fishing equipment and marketing of fish. Paying attention to fishers groups as effective means for gathering fishers' efforts to improve the situations, same as Phase I, this component will intend to stimulate fishers into fishing by supporting and strengthening the fishers groups.

D Fishers Group Component in the Southern Regions

As mentioned before, grouping fishers in cooperation form is an effective means to strengthen capacity of the fishers. Although many fishers groups were formed in the Southern areas, most of them have not become self-support working groups yet. This component will provide assistance to strengthen the capacity of fishers groups so that they can lead the promotion of the fishery in the areas.

Five to ten prospective fishers groups, selected from each district, Mtwara, Lindi and Kilwa, will be trained to increase their capacity as leading groups.

Activities 1: Education/guidance for groups:

The groups will be given training and guidance by cooperative experts on group's vision, mission, strategy and activities including, leadership, management of group activities, book-keeping and saving/financial management.

Activities 2: Assistance to the groups activities:

- The groups will prepare activity plan through discussions and advise of District fishery officers and cooperative experts.
- Equipment will be provided for the groups
- District fishery officers and cooperative officers will monitor the groups' activities to give necessary instructions/advise.

Activities 3: Procurement of equipment: The following equipment will be procured in Tanzania in principle for the groups and District officers.

- Production equipment such as boats and fishing materials for the groups.
- Equipment for District Fisheries Officers for supporting the groups.

E Fish-marketing Component in the Southern Regions

Since the construction of the road between Kilwa and Dar es Salaam will be completed in near future, marketing of catches to Dar es Salaam will be tried in cooperation of the fishers groups in Kilwa District. There are demands of fish, as a source of animal protein, in the hinterland of Mtwara and Lindi. Targeting these markets as well as the city center markets, this component will also try to establish joint marketing of catches in cooperation of the fishers groups and fish benders groups in Mtwara and Lindi.

Activities 1: Joint shipment and sale by fishers groups in Kilwa:

- Fishers groups intending joint shipment/sale of their catches will organize an association group for joint shipment/sale.
- Through discussions by member groups with assistance of cooperative expert and District fishery officers, they will prepare a management system including operation of truck for collecting and transporting fish, sharing of cost and risks and settlement of sales money.
- Transportation boat will be constructed and necessary equipment will be procured.
- The management system will be established through experimental shipments.

Activities 2: Joint shipment and sale by fishers groups in Lindi and Mtwara:

- Fishers groups intending joint shipment/sale of their catches will organize an association group for joint shipment/sale.
- Through discussions by member groups with assistance of cooperative expert and District fishery officers, they will prepare a management system including operation of trucks for transportation, sharing of cost and risk and settlement of sales money.
- Necessary equipment will be procured.
- The management system will be established through experimental shipments.

(4) Facility and Equipment Plan

[Phase- 1]

A Facility Plan

For purposes of supporting fish-processing group, improvement of working conditions, improvement of product quality and increase of production, a fish-processing shed mainly for frying and smoking will be constructed in Bagamoyo.

Facilities	Structure/Finish	Area (m ²)	Remarks
[Fisheries Cooperatives Capacity Building Component]			
Fish-processing shed	CB construction, roof with metal sheet, one story	(=5 x 9)	

B Equipment Plan

The following equipment will be procured. Making incentives for organizing cooperatives, the fishing equipment is to supply for the groups/ cooperatives on credit of low interest.

Facility and equipment	Quantity	Specifications/Reference
[Fisheries Cooperatives Capacity Building Component]		
a) For fishers groups		
Fishing boat	15	Locally constructed boat, approx. 9m
Outboard engine	15	25hp, 40hp
Fishing gears	20	purse seine, surrounding net, shark net, gill net
b) For processors group		
Processing equipment	1	Work table, knife, flying pan, balance
Small freezer	1	Chest type freezer, approx. 400liter, 170w
Ice/fish box	1	Locally made, aluminium sheet
Plastic container	20	
c) For District fishery office		
Motorbike	4	Off road type, approx. 50cc

Facility and equipment	Quantity	Specifications/Reference
Office equipment	2	PC,
d) For fisheries cooperative DSM		
Office equipment	1	PC,
Outboard engine / spare parts	50	15hp, 25hp, 45hp
Repairing tools for workshop	1	Tools for repairing outboard engines
[Field Training Component]		
Fishing boat	1	Locally constructed boat, 11m, diesel eng. approx. 70hp
Ice/fish box	1	Locally made, approx. 2m x 2m x 1m, Aluminium sheet
Small boat for lamps	2	Locally made dingy
Fish attracting lamp	8	Kerosene lamp
Submersible lamp and others		Small generator, echo sounder, compass, GPS etc.
Fishing gears		purse seine, gill net (shark net), long line, material for FAD
[Fish-Marketing Component]		
a) For Mafia groups		
Boat for transportation	1	Locally constructed boat, 11m, diesel eng. approx. 40hp
Ice/fish box	4	Locally made, approx. 1.5m x 1.5m x 1m, aluminium sheet
Weighing scale	4	100kg
b) For Bagamoyo groups		
Small freezer	2	Chest type freezer, approx. 400liter, 170w
Ice/fish box	4	Locally made, approx. 1.5m x 1.5m x 1m, aluminium sheet
Ice/fish box for transportation	4	Locally made, approx. 1.5m x 1.5m x 1m, aluminium sheet
Truck	1	Second hand truck

[Phase- 2]

[Fishers Group Component in the Southern Regions]		
Fishing boat	25	Locally constructed boat, approx. 9m
Outboard engine	25	25hp, 40hp
Fishing gears	25	surrounding net, shark net, gill net
For District fishery office		
Motorbike	6	Off road type, approx. 50cc
Office equipment	3	
[Fish-marketing Component in the Southern Regions]		
a) Kilwa		
Truck for transporting fish	1	3.5ton truck, second-hand
Ice/Fish box	2	Approx. 2m x 1.5m x 1m,
Weighing scale	2	Hanging spring scale, 100g
b) Mtwara, Lindi		
Small freezer	4	Chest type freezer, approx. 400liter, 170w
Ice/fish box	4	Locally made, approx. 1.5m x 1.5m x 1m, aluminium sheet
Insulated container	20	Insulated plastic container, approx. 0.5m x 0.7m x 0.4m
Weighing scale	4	Hanging spring scale, 100kg
Small truck	2	Second hand, Pick-up type truck

(5) Operation and Management Plan

A Organization and Management

Under the supervision of Fisheries Division, Ministry of Natural Resource, a programme management office will be set up in each District Office of the target areas to implement the components. The fishery section of the District Office will be in charge of the project implementation and conduct guidance for the target groups/cooperative and follow up their activities in collaboration with the District cooperative office.

B Personnel

The project personnel for the phase 1 will be arranged as follows.

Areas	Project personnel	Period	Duties
Over all the areas	General supervisor	1 24 months	supervision in over all
	Assistant supervisor	1 24 months	Assistance in over all supervision
DSM	Instructors	1 24 months	Instructions for cooperative, follow-up its activities.
	Cooperative officers,	1 24 months	
Mafia	Instructors	2 24 months	Instructions for groups, follow-up their activities.
	District Cooperative officers	2 24 months	
Bagamoyo	Instructors	1 24 months	Instructions for groups, follow-up their activities.
	District Cooperative officers	1 24 months	

Experts	No.	Period	Duties
Project manager	1	24 months	Control/direction of project, discussing with the implementation agencies.
Cooperative expert	1	24 months	Education/ guidance for groups/ cooperative, their management, micro-finance
Fishing expert	1	24 months	Training/instructions on fishing techniques and operation management

C Training for Personnel for Project

District fishery officers, who are in charge of essential part of the project, will have training for guiding and instructing the fishers groups/cooperative in the beginning of the programme.

Training/Personnel	Number	Schedule	Training items
Training for instructing the fishermen groups/cooperative			
Fishery officers and Cooperative officers of Ilala Municipal Office	2	—	Understanding of contents of programme/components, Guide/follow up cooperative
Fishery officers and Cooperative officers of each District Office	2	—	Understanding of contents of programme/components, Guide/follow up groups
Training for management staff and members of cooperative			
Management staff	6	—	Management, operation
Staff in charge of accounts	2	—	Operation, accounting
Member fishermen		- - - -	Management, Saving
Training on OJT			
Training for crew of the boat	15	—	Operation of new equipment
OJT for fishermen groups	5/group	— — — —	OJT for fishing operation
Cooperative accounts staff	2	-	Accounts of the boats
Training for fishermen groups			
Leaders of fishermen groups	15 groups	—	Operation, management
- ditto -	15 groups	—	Operation, accounting
Marketing cooperative	2 coop.	—	Joint marketing, accounts
- ditto -	2 coop.	—	Joint marketing operation

D Management of Equipment

1) Fisheries cooperative capacity building component

The education/ guidance for the groups are conducted by the cooperative expert, District fishery officers and cooperative officers. With the education and guidance, all members of the groups will discuss their aims and activities. The District offices will assist the groups to start their activities by providing equipment for the groups on credit and monitor the groups' activities with necessary advise. The money repaid by the groups will be managed as a fishery fund by the respective District offices.

The initial input equipment, supplied to the member fishers on credit with low interest and no collateral, shall be managed by the member fishers and Ilala Municipal Office will supervise the management. The cooperative is responsible to collect the repayment money from the member fishers to deposit as a fund for the micro-credit system and report it to the Municipal office.

2) Field Training Component

The cooperative is responsible to maintain and operate the fishing boat built for this component to provide on the job training for young fishers, joining the fishing boat as crew for two to three months, in actual fishing operation of the boat. The cooperative will manage the boat separately from other activities and raise a fund for micro-credit from profit of the fishing operation of the boat. The operation and account of the boat shall be periodically reported to the cooperative members as well as to the Fisheries Division and Ilala Municipal.

3) Fish-Marketing Component

Under education and guidance of the cooperative expert and District fishery officers, the fishers groups will organize a association group to prepare management and operation system of joint shipment and sale. Cost and sale statements shall be opened to all the members in every shipment and be periodically reported to the respective District office.

(6) Work Plan

Implementing schedule of the main activities and their outputs are as follows.

Major Activities	Responsibilities	Schedule	Output
Phase- 1			
[Fisheries Cooperatives Capacity Building Component]			
Education/ guidance for fishers group	DF/ Fishers groups	_____	Education for 15 fishers groups, 1 processors group
Education/guidance for fisheries cooperative	DF/ Fisheries cooperative	_____	Education for DSM fisheries cooperative
Procurement of equipment	DF/ Fisheries cooperative	_____	Procurement of fishing equipment
Assistance to the groups activities	DF/ Fishers groups	_____	Activities of 15 fishers groups, 1 processors group
Assistance to the cooperative activities	DF/ Fisheries cooperatives	_____	Micro-finance of DSM fisheries cooperative
[Field Training Component]			
Procurement of fishing boat	DF/ Fisheries cooperatives	_____	Procurement of fishing boat
Operation of fishing boat	DF/ Fisheries cooperatives	_____	Training of 3 young fishers groups
Management of the boat in a separated account	DF/ Fisheries cooperatives	_____	Making fund for credit
[Fish-marketing Component]			
Joint shipment and sale by Mafia fishers groups	DF/ Fishers groups	_____	Joint shipment by fishers groups

Major Activities	Responsibilities	Schedule	Output
Joint shipment and sale by Bagamoyo fishers groups	DF/ Fishers groups		Joint marketing by fishers groups
Phase 2			
[Fishers Group Component in the Southern Regions]			
Education/ guidance for fishers groups	DF/ Fishers groups		Education for 25 fishers groups
Procurement of equipment	DF/ Fishers groups		Procurement of fishing equipment
Assistance to the groups activities	DF/ Fishers groups		Activities of 25 fishers groups
[Fish-marketing Component in the Southern Regions]			
Joint shipment and sale by fishers groups in Kilwa	DF/ Marketing cooperative		Procurement of a truck. Joint marketing by groups
Joint shipment and sale by fishers groups in Lindi and Mtwara	DF/ Marketing cooperative		Procurement of marketing equipment. Joint-marketing by groups

(7) Cost Estimate

[Phase-1]

		Cost (Tsh.)	Cost (US\$)	Remarks	
[Fisheries Cooperatives Capacity Building Component]					
(2) Cost for Construction	A	3,600,000	4,107	Processing shed	
	(Sub-total)	(3,600,000)	(4,107)		
1) Facility works		150,000	171	Water, Power supply, drain	
2) External works		200,000	228	Drain trap	
(2) Equipment		290,300,000	331,393	ANNEX 2.1-1	
Sub total		294,250,000	335,899		
[Field Training Component]					
Cost for Equipment		53,720,000	61,324	ANNEX 2.1-1	
[Fish-Marketing Component]					
Cost for Equipment		37,600,000	42,922	ANNEX 2.1-1	
[Project Operation]					
				Quantity	Unit cost
Training and studies		20,000,000	22,831	1,000MM	Tsh.20,000
Technical assistance	A	420,480,000	480,000	24MM	US\$ 20,000
"	B	315,360,000	360,000	24MM	US\$ 15,000
"	(Local expert)	90,823,680	103,680	18MM	US\$ 5,760
Local instructors		9,600,000	10,959	192MM	Tsh.50,000
Vehicle		75,686,400	86,400	24vechile.M	US\$ 3,600
Equipment		21,900,000	25,000		
Sub-total		953,850,080	1,088,870		
Phase-1 Total		1,339,420,080	1,529,015		

[Phase-2]

	Cost (Tsh.)	Cost (US\$)	Remarks	
[Fishers Group Component in the Southern Regions]				
Cost for Equipment	198,000,000	226,027	ANNEX 2.1-1	
[Fish-marketing Component in the Southern Regions]				
Cost for Equipment	48,760,000	55,662	ANNEX 2.1-1	
[Project Operation]				
			Quantity	Unit cost
Training and studies	28,400,000	32,420	1,420MM	Tsh.20,000
Technical assistance A	420,480,000	480,000	24MM	US\$ 20,000

" B	315,360,000	360,000	24MM	US\$ 15,000
" (Local expert)	91,296,720	104,220	18MM	US\$ 5,760
Local instructors	14,400,000	16,438	288MM	Tsh.50,000
Vehicle	75,686,400	86,400	24vechile.M	US\$ 3,600
Equipment	21,900,000	25,000		
Sub-total	967,523,120	1,104,478		
Phase-2 Total	1,214,283,120	1,386,168		

The contents, participants and cost of training are as follows.

[Phase-1]

Trainees/Training items	Cost (Tsh)	Cost (US\$)	No. of Trainees	Period (days)
Fishery officers, Cooperative officers / Programme contents, Guide/follow up groups	1,600,000	1,826	8	10
DSM Cooperative management staff / Management, operation, micro-finance system	1,800,000	2,055	6	15
DSM Cooperative management accounting staff/ Management, accounts, micro-finance system	600,000	685	2	15
Fishers group leaders, accounting member / Leadership, management, accounts, saving	12,000,000	13,699	2 x 15 groups	20
Marketing cooperative management members / Management, operation, accounts, saving	4,000,000	4,566	5 x 2 groups	20

[Phase-2]

Trainees/Training items	Cost (Tsh)	Cost (US\$)	No. of Trainees	Period (days)
Fishery officers, Cooperative officers / Programme contents, Guide/follow up groups	2,400,000	2,740	12	10
Fishers group leaders, accounting member / Leadership, management, accounts, saving	20,000,000	22,831	2 x 25 groups	20
Marketing cooperative management members / Management, operation, accounts, saving	6,000,000	6,849	5 x 3 groups	20

(8) Cost Analysis of Training Boat Operation by Cooperative and Joint Shipment by Groups

Operation cost for the fishing boat by the cooperative is estimated with conditions that the catch is 2.5ton of small pelagic fish per voyage taking 4 to 5 days and 4 voyages are made a month (see ANNEX 2.1-4). According to the estimate, the direct operation expense is 17 million Tsh annually and total sale of the catch is 36 million Tsh. The cooperative will take 8 million Tsh (50 percent) form the gross profit after deducting the direct operation cost, fish-sale levies etc. from the sales amount. Net profit for the cooperative will be estimated at 1.5 million Tsh after deducting repairing expenses and depreciation cost.

Regarding the joint shipment and sale by Mafia fishers groups, estimates on the cost/profit are made with conditions that 10 groups cooperate for the operation and ship 3 times a month with 2 ton of fish per time at 450 Tsh/kg at provisional selling price and the estimated selling price in Dar es Slaam fish market is 1,000Tsh/kg (See ANNEX 2.1-5). According to the estimates, direct operation cost of the boat is 13 million Tsh a year and gross profit is 22 million Tsh after deduction the direct operation cost, amount of fish at provisional price and levies. Annual net profit is estimated at 13 million Tsh after deduction repair expenses, remuneration for boat operator and depreciation cost of the boat and equipment. It means that the groups can get better price by 180 Tsh/kg than the average buying price

of buyers from Dar es Salaam and the groups can expect to get a return of 1.3 million Tsh each in average a year.

(9) Monitoring

A Monitoring on Cooperative Activities

Regarding effects of the programme, following items will be monitored to take necessary guidance.

(For fishers groups)

Activities of group	=	Management of production equipment and operations
Income of members	=	Share for individual members
Saving	=	Saving amount for group's fund
Repayment for production equipment	=	Repayment result of each group, Deposit amount of repayment money in each district.

(Fishery cooperative in Dar es Salaam)

Repayment for initial input	=	Repayment ratio and total amount of repayment
Micro finance system	=	Number of members, amount of fund, records of credit and repayment
Training for fishers	=	Operation of fishing boat (Log book, Fishing records, Accounts book), Records of OJT and interview to trainees, master fishers

(Joint marketing)

Marketing cooperative	=	Organization of cooperative, formulation of operation plan
Operation	=	Situation of operation (Sales records, quantity, amount, accountings, maintenance/operation of marketing equipment)

B Monitoring on Fisheries Activities

A consideration should be made to assessment and monitoring of the fisheries resources and aquatic environment on the project activities. This will provide research to generate scientific information which will be the basis for management decision.

In order to assess the impacts on fisheries development, monitoring of the following items is implemented. Fisheries groups are utilised for the data collection under the supervision of TAFIRI and district fisheries officers. The fishery officers follow up the fishing activities of each groups and give them necessary guidance and instructions. For the monitoring, fishing log books are prepared and the groups are ordered to keep the log books recording every fishing operation including the following items. These data will be summed up periodically to observe their transition in long term.

- Fishing ground
- Fishing method, size of fishing gears
- Times of fishing operations
- Quantity of catch
- Main species

Through above activities, programme will empowering fisheries groups/cooperatives to do catch monitoring by themselves, such as

- Training in collection data and provision of necessary equipments

- Training in analysis of data with support from District Fisheries Officer
- Training for decision making by the cooperatives on selection of fishing gears and grounds based on the result of fisheries monitoring.

(10) Environmental Impact

This programme contains no construction of large buildings, so that it will not have such effect on the environment as caused by construction in the coast areas. There will not be problems such as drainage and noise either. The programme has only one small fish-processing shed in the fisheries cooperative capacity building component. The facility is small in scale and the processing capacity is also as small as tens kg. The discharge is disposed off through a drain trap and septic tank, so that there will be no adverse significant impact on the marine environment.

It is anticipated that the training promoting fish-production will affect the resources to a greater or less extent. The programme will therefore carry out monitoring on the resources through the groups/cooperatives fishing activities and give necessary guidance and instructions for sustainable exploitation of the resources. It is expected that the fishers communities participating in the programme will become conscious of importance of the resources by recording their fishing operation and catches. Their records will be useful as basic data for preparation of the resources management plan. The programme can also produce opportunities to improve their living for the people who really need supports. Fair distribution of the programme benefit is also the key for realizing this effect.

(11) Linkage

A Inter-sectional Linkage

The district cooperative officers are also required to cooperate for organizing fishers' groups/ cooperatives and their formal registration. For education of the fishers' groups/ cooperatives on their cooperative operation, management and accounting, training courses planned by the cooperative office and assistance by experts of education institutes such as Mosi Cooperative University will be utilized.

B Project Linkage

Education on environment is to be included in all the education and training for the groups/ cooperatives in order to facilitate their understanding on the fishery management. For example, in Mafia islands, where the Marine Park Project has been implemented, the education on environment will be carried out by the Project officers.

Regarding evaluation of impact on the resources, which would be made by diverting fishing methods and operations, for example from catching lobsters by diving to purse seine fishing, it is efficient to conduct the evaluation in collaboration with the Marine Park Project.

ANNEX 2.1-1

[Phase 1]

Component	Quantity	Unit cost	Cost (in Tsh)	Cost (in US\$)
[Fisheries Cooperatives Component]				
a) For fishers groups				
Fishing boat/outboard engine	15	5,200,000	78,000,000	8,041
Fishing gear material	20		37,000,000	42,237
b) For processors group				
Processing equipment			800,000	913
Small freezer	1	3,000,000	3,000,000	3,425
Ice/fish box, plastic container			1,500,000	1,712
c) For District fishery office				
Motorbike	4	3,000,000	12,000,000	13,699
Office equipment	2	5,000,000	10,000,000	11,416
d) For fisheries cooperative DSM				
Office equipment	1		5,000,000	5,708
Outboard engine/ spare parts	50		133,000,000	151,826
Repairing tools for workshop	1		10,000,000	11,416
Sub total			290,300,000	331,393
[Field Training Component]				
Fishing boat	1	15,000,000	15,000,000	17,123
Ice/fish box, small boat, lamp			1,200,000	1,370
Submersible light and others			17,520,000	20,000
Fishing gears			20,000,000	22,831
Sub total			53,720,000	61,324
[Fish-Marketing Component]				
a) For Mafia groups				
Boat for transportation	1	13,000,000	13,000,000	14,840
Ice/fish box, scale	4	1,000,000	4,000,000	4,566
b) For Bagamoyo groups				
Small freezer	2	3,000,000	6,000,000	6,849
Ice/fish box	8	700,000	5,600,000	6,393
Truck	1	9,000,000	9,000,000	10,274
Sub total			37,600,000	42,922

[Phase 2]

[Fishers Group Component in the Southern Regions]				
Fishing boat	25	3,000,000	75,000,000	85,616
Outboard engine, spare parts	25	2,600,000	65,000,000	74,201
Fishing gear material	25		35,000,000	39,954
For District fishery office				
Motorbike	6	3,000,000	18,000,000	20,548
Office equipment	3	5,000,000	15,000,000	5,708
Sub total			198,000,000	226,027
[Fish-marketing Component in the Southern Regions]				
a) Kilwa				
Truck for transporting fish	1	10,000,000	10,000,000	11,416
Ice/Fish boxes, scales	2	1,000,000	2,000,000	2,283
b) Mtwara, Lindi				
Small freezer	4	3,000,000	12,000,000	13,699
Ice/Fish boxes, scales	4	1,000,000	4,000,000	4,566
Insulated container	20	500\$	8,760,000	10,000
Small truck	2	6,000,000	12,000,000	13,699
Sub total			48,760,000	55,662

ANNEX. 2.1-2

Examples of Fishers Groups, Successfully Embarked in Their Own Fishing with Their Own Efforts and Some Assistance.

Group's name	MIKINGAMO FISHING COOPERATIVE SOCIETY												
Village	Bweni Village in Mafia												
Members	23 fishers (Group leader: Mr. Makame Masiku)												
Year started	1970 (Registered in 1985)												
Activities	<p>Activities: Started fishing (surrounding net fishing) in group with fishing equipment (boat 1, outboard engine 1, ice box 1) lent by the Fisheries Division 1979.</p> <p>Obtained their own equipment one by one from profit they got from the fishing. They already returned the initial equipment to the Fisheries Division and have owned the following equipment. With these equipment, they have operated fishing and selling their catches at DSM market by themselves.</p> <table> <tr> <td>Fishing boat (Dhaw)</td><td>1</td></tr> <tr> <td>Boat for transporting fish to DSM</td><td>1</td></tr> <tr> <td>Ice box (3 ton capacity)</td><td>1</td></tr> <tr> <td>Outboard engine 25hp, 40hp</td><td>1 each</td></tr> <tr> <td>Fishing net</td><td>1 (100 pieces/set)</td></tr> <tr> <td>Truck for transportation</td><td>1</td></tr> </table> <p>Saving: They have saved 40% of gross profit after deduction of all the operation cost. The rest, 60% is shared by the members.</p>	Fishing boat (Dhaw)	1	Boat for transporting fish to DSM	1	Ice box (3 ton capacity)	1	Outboard engine 25hp, 40hp	1 each	Fishing net	1 (100 pieces/set)	Truck for transportation	1
Fishing boat (Dhaw)	1												
Boat for transporting fish to DSM	1												
Ice box (3 ton capacity)	1												
Outboard engine 25hp, 40hp	1 each												
Fishing net	1 (100 pieces/set)												
Truck for transportation	1												
Key factors for success	Effort to make own money by saving and close cooperation by all the members.												
Hopes	Off shore fishing with shark nets or purse seine												

Group's name	MUSIKAMANO fishing group
Village	Bweni Village, Mafia
Members	15 fishers, (Group leader: Mr. Kifimbo TWAHA)
Year started	2000
Activities	<p>Starting of activities in group: The group was made by young fishers who were formerly catching lobster by diving and desired to do more effective fishing.</p> <p>For procurement of fishing equipment, all the member contributed 50,000Tsh each to make 750,000Tsh, and got a loan of 800,000Tsh with very low interest rate from a private person. With these funds, they could obtain a second hand boat and fishing materials for fishing nets. Because the money prepared was not enough to obtain an outboard engine, they hired an outboard engine at a hard condition 15% of sales money to embark in surrounding net fishing.</p> <p>Acquisition of fishing skill: Because no one has experience of the net fishing in the group, 6 members including the leader got on board a fishing boat as crew for 7 weeks in order to acquire skill of surrounding net fishing. The other members learned how to operate the fishing under instructions of the first 6 members.</p> <p>Saving : They have saved 1/3 of the gross profit after deduction of all the operation cost including charge for hiring the engine, and the rest 2/3 is shared by the members. They have repaid the loan in instalment and the balance was 470,000Tsh at the time of the interview.</p> <p>Income of the members : Increased comparing before.</p> <p>They are difficult in procurement of necessary equipment, masks and fins for fishing.</p>
Key factors for success	Savings of each member, Loan with low interest, Acquisition of fishing skill on the job. Good leadership, All members strong will and good cooperation
Hope	Acquisition of an outboard engine and boat for marketing the catch to DSM by themselves.

ANNEX. 2.1-3

A Training for the Crew of the OJT Fishing Boat

Executing organization	The fishery cooperative, UWAWADA conducts the training under supervision of Ilala Municipal Office, Fishery section.
Trainees	Master fisherman and all other crew members of the OJT fishing boat
Way of training	Training on board with instructions by the fishery expert.
Training period	In the first two months after delivery of the boat. Additional spot instructions/training are given when necessary.
Items of training	Operation of small echo sounder and its utilization for fishing Fishing operation with underwater fish attraction light and small echo sounder. Operation of GPS and its utilization for navigation Navigation to offshore new fishing grounds using charts, compass and GPS. Making FADs (fish aggregating device) and their installation. Fishing operation, utilizing FAD.

B On the Job Training (OJT) for Young Fishers Groups

Executing organization	The fishery cooperative, UWAWADA conducts the training under supervision of Ilala Municipal Office, Fishery section.
Trainees	Young fishers groups intending to embark in their own fishing. Selection of fishers group: Invite the public including the fishers groups participated in the programme. Trainee groups are selected from the groups applied through interviews on the groups' background, experience and activities, leadership and cooperation in group, aims. Five members of the selected group join the OJT fishing boat as crew for OJT for about 2 months. Members to select trainee group: Fishery officer of Ilala Municipal office. Management members of the fishery cooperative and master fisherman of the OJT fishing boat. Treatment of trainees: Crew of the OJT fishing boat, to be given share as crew, according to their work on board.
Training period	2 months in principle for one group. Three groups will have the OJT in a year.
Items of training	Way of Training: Trainees learn the fishing skill by themselves in working as crew. The master-fisherman and main crew members take charge of instruction for the trainees. Items of Training: <ul style="list-style-type: none"> - Fishing operation. Main fishing is purse seining and shark net fishing, longline fishing. - Composition of fishing gear, and repairing of the gears - Management of fishing boat (Operation, Maintenance) - Navigation (using compass and charts) - Making FADs and their installation. Fishing operation, utilizing FAD. - Operation of small echo sounder and its utilization for fishing. - Fishing operation with underwater fish attraction light and small echo sounder. - Operation of GPS and its utilization for navigation - Navigation to offshore new fishing grounds using charts, compass and GPS.

C Demonstration of New Fishing Techniques to the Boat Owners and Master Fishers

Executing organization	The fishery cooperative, UWAWADA conducts the training under supervision of Ilala Municipal Office, Fishery section.
Subject persons	Owners of fishing boats and master fishers
Items of demonstration	Fishing operation with underwater fish attraction light and small echo sounder. Navigation using charts, compass and GPS. Fishing operation, utilizing FAD.
Times	About two times in a year

ANNEX 2.1-4

Running Cost for the Training Boat by the Cooperative

Boat with inboard diesel engine, Fishing off Mafia is 1 Trip=4 to 5 days, 4 trips per month (Engine = 56 HP)

				Per one trip	In one month	In one year
Direct expenses for fishing operation						
Fuel oil	250 litre	525 Tsh/litre		131,250 Tsh	525,000	
Ice	3,200 kg	40 Tsh/kg		128,000	512,000	
Kerosene oil for lamps	80 litre	420 Tsh/litre		33,600	134,400	
Delivery charges for Fuel oil				2,500	10,000	
Supplies for lamps				15,000	60,000	
Foods	1,000 Tsh/person/day	5 days		50,000	200,000	
Direct Operation cost Total (A)				360,350 Tsh	1,441,400	17,296,800
Quantity of Catch 2,500 kg/Trip					Catch/month(kg)	Catch/year(kg)
Sales					10,000	120,000
Dagaa Papa	700 kg	200 Tsh/kg		140,000 Tsh		
Dagaa mchele	200 kg	125 Tsh/kg		25,000 Tsh		
Sardine	1,000 kg	300 Tsh/kg		300,000 Tsh		
Mackerels (KIBUA)	600 kg	500 Tsh/kg		300,000 Tsh		
Sales amount				765,000 Tsh.	3,060,000	36,720,000
Levy on fish-landing	5 %			38,250		
Commission for auctioneer	1 %			7,650		
Direct Operation cost Total (A)				360,350		
				358,750 Tsh	1,435,000	17,220,000
Unloading expense	5 % on G/P			17,938		
Gross profit				340,813 Tsh		
Share for Owner =	50 %			170,406	681,625	8,179,500
Share for crew in total =	50 %			170,406	681,625	8,179,500
Average per person	10 person			17,041	68,163	817,950
Expenses for Repair						
Boat	10 %			10,000	40,000	480,000
Diesel engine	10 %			20,833	83,333	1,000,000
Fishing equipment	10 %			12,500	50,000	600,000
Ice box	17 %			2,083	8,333	100,000
Expenses for Repair in total				45,417 Tsh	181,667	2,180,000
				124,990	499,958	5,999,500
Depreciation (Initial cost)						
Boat	5,000,000	6 years		17,361	69,444	833,333
Diesel engine	10,000,000	6 years		34,722	138,889	1,666,667
Fishing equipment	6,000,000	4 years		31,250	125,000	1,500,000
Ice box	800,000	2 years		8,333	33,333	400,000
21,800,000				91,667	366,667	4,400,000

ANNEX 2.1-5

Estimate for Joint Marketing to Dar es Salaam Fish Market by Mafia Fishers Groups

Quantity of fish to Ship for Sales:

	Number of groups	Fishing times/month	Catch (kg) /group/time
Member groups for joint marketing	10	15	80

Remarks: Each group will go fishing every two days on average, that is, five groups will have catches to ship every day on average.

The quantity of fish to ship will be 400kg/day (= 80kg/group/day x 5 groups).

The transportation boat will take 5 days for one shipment of fish from Mafia to Dar es Salaam.

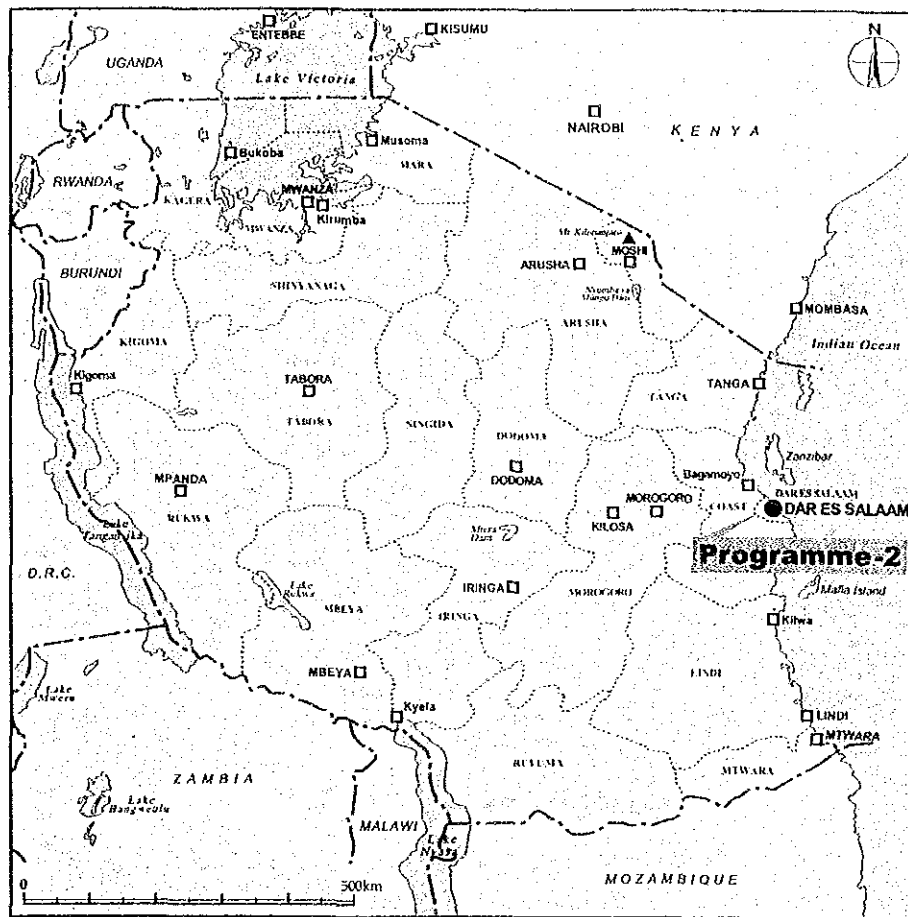
The quantity of fish for one shipment will be therefore 2,000 kg/trip.

The groups' transportation boats is assumed to be a boat provided with an inboard diesel engine about 40 hp and operated by 2 persons.

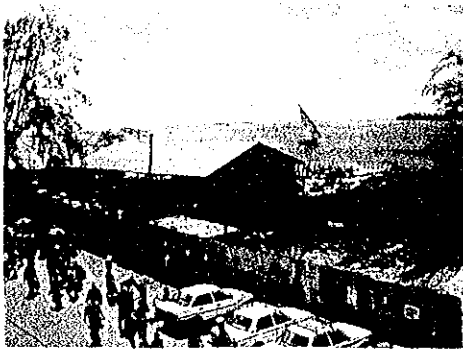
				One trip	a month	a year	
Boat operation cost					3 trips/month		
Fuel	200litre	520Tsh/litre		104,000			
LO	10litre	1,600 "		16,000			
Ice	5,000kg	40Tsh/kg		200,000			
Provisions	1,500Tsh/p/day	12day		36,000			
Boat operation cost (A)				356,000	1,068,000	12,816,000	178Tsh/kg
Sales at DSM (B)				2,000,000	6,000,000	72,000,000	
Boat operation cost (A)				372,000			
Levy in Mafia	11,700Tsh/trip			11,700			
Levy in DSM		5%		100,000			
Provisional selling price in Mafia	Quantity shipped	Provisional price		Provisional amount in Mafia			
	2,000kg	450Tsh/kg		900,000	2,700,000	32,400,000	
Total cost for marketing (C)				1,373,700	4,121,100	49,453,200	687Tsh/kg
Gross profit (D) = (B) - (C)				632,300	1,896,900	22,762,800	
Expense for repairing							
Diesel engine	8,000,000	10%		24,242			
Ice/fish box	800,000	17%		4,121			
Boat	4,000,000	10%		12,121			
Total of repairing expenses (E)				40,485	121,455	1,457,455	
Balance (F) = (D) - (E)				591,815	1,775,445	21,305,345	
Shares of the Balance (F)							
Fishers groups (E)	80%			473,452	1,420,356	17,044,276	
Boat operators	20%			118,363	355,089	4,261,069	
Depreciation expenses (Initial cost) (Depreciation period)							
Diesel engine	8,000,000	5 years		48,485			
Ice/fish box	800,000	2 years		12,121			
Boat	4,000,000	5 years		24,242			
Total if depreciation expenses (G)				84,848	254,545	3,054,545	
Profit for Fishers groups = (E) - (G)				388,604	1,165,811	13,989,731	

Programme-2

2.2 Dar es Salaam Fisheries Infrastructure Improvement Programme



Planning site : Dar es Salaam



Auction hall of Banda Beach Fish Market, Dar es Salaam.



Women scaling fish on beach of Banda Beach Fish Market.



Fish sellers' stalls on beach of Banda Beach Fish Market.



Existing condition at Banda Beach Fish Market as seen from a fishing boat coming to land on the beach.



Kivukoni Front.



Boat repair on the beach of Kivukoni Front.



Mamalishe stalls on Kivukoni Front.



Boat outboard engine repair on the beach of Kivukoni Front.

2.2 Dar es Salaam Fisheries Infrastructure Improvement Programme

(1) Programme Description

A Description

With purpose to lead the promotion of the fisheries sector of the country, this programme will expand and improve the facilities and functions in Dar es Salaam, as the centre area for promotion of the fishery sector. In order to improve and promote marketing of fish, the new fish-market has been constructed in Dar es Salaam. This new market is however not enough to accommodate all the people working in relating fish-marketing. Additional facilities are required in adjacent area of the new market. Facilities and functions supporting fishers and operation of fishing boats are also required in Dar es Salaam in connection with the fish-marketing area. Including improvement of these situations, this programme intends to develop the areas in Banda beach and Kivukoni Front as a fishery centre for leading promotion of the fishery sector. The programme consist of the following components;

1) Expansion of fish market

Banda beach area will be developed as the fishery marketing centre with expansion of market facilities in connection to the new fish market. The expansion of the market facilities will provide proper working places for the people who can not be accommodate in the new fish market. The old fish market building (auction hall) will be utilized for fishery cooperatives rooms, meeting/training rooms and engine-repairing workshop.

2) Improvement of the mooring area in Kivukoni Front

The shore area in Kivukoni Front, which has been utilized as the main mooring area of Dar es Salaam fishing boats, will be improved so as to support the fishers' activities and operation of fishing boats and secure safety mooring area as well as clean/ hygienic working areas for the people.

B Location: Dar es Salaam, Banda beach, Kivukoni Front

C Duration: 24 months

(2) Objectives and Justification

A Objectives

Dar es Salaam is the centre of fishery production and marketing in the marine coastal regions and leading the coastal fisheries of Tanzania. This programme aims to improve the function, leading the promotion of the fisheries sector by expansion and improvement of the facilities and functions in Dar es Salaam as a centre of fishery production and marketing.

B Justifications

The fishing fleet operated based in Dar es Salaam is the largest one in all the coastal regions and about 50 percent of the marine fisheries catches are landed in Dar es Salaam, including fish transported from other fishing areas such as Mafia, Kilwa, Bagamoyo and Zanzibar.

Dar es Salaam, the capital city of Tanzania, has the largest population of 3.29 million and the biggest demands of food including fish in the country. In order to meet the demands, it is essential and indispensable to secure and promote the function of landing and marketing of fish in Dar es Salaam for the people. With the purpose to improve and promote marketing of fish, the new fish-market has been constructed in Banda beach, Dar es Salaam, which market is to be the centre facility to lead improvement and promotion of fish-marketing in Dar es Salaam. The new fish market is however not

large enough to accommodate all the people working in relating fish-marketing. Expansion of the facilities is required to provide proper working places for those people for promotion of the marketing.

Although the biggest fishing fleets are operated in Dar es Salaam, supporting facilities for coastal fishers and their fishing boats have not been developed at all. For supporting and activating operation of the Dar es Salaam fishing fleets, leading promotion of the coastal fisheries in Tanzania, it is essential to improve the mooring area for the fishing fleet.

The fishing boats are currently moored in three places around the entrance of Dar es Salaam bay, which are in Kivukoni Front and Kiganboni (inside and outside of the bay). Among them, Kivukoni Front has been utilized as main mooring area, because it has the following advantages;

Kivukoni Front is deep enough to moor fishing boats, while Kiganboni side, in particular the outside of the bay is so shallow that water line falls down to the channel when low tide. Kivukoni Front provide a mooring area sheltered from winds and waves. It is best area to shelter boats from predominant NE winds and waves. Since this area is adjacent to the fish market, fishing boats can easily move between the market and their mooring area without crossing the channel. This area is also advantageous in supply of ice, water, fuel for boats. It is therefore essential to secure Kivukoni Front as mooring area of fishing boats and improve the area for promotion of the fisheries sectors.

(3) Components and Activities

A Expansion of Dar es Salaam Fish Market Component

In order to improve and promote marketing of fish, the new fish-market has been constructed at Banda beach with a grant assistance of Japan, which construction will be completed around end of February 2002. In the new market with an area of 14,776m², it consists of facilities for wholesale market, retail market of fresh fish, preparation of fish for processing, frying fish and retailing vegetables/sundries, ice, fuel etc, which will provide working places for about 1,000 people. It is however impossible to accommodate all the working people in the new market, because about 1,500 people are currently working in the fish-market area.

In case of Kariakoo wholesale market in Dar es Salaam, many traders/vendors who were excluded from the market have illegally opened vending stalls around the market and has affected operation of the market. Same as this case, many of the food-vendors, fish-processors etc. who can not obtain their working places in the new market would set up their business outside of the new market. This situation would make it difficult to manage and operate the new market properly. Development of the fish market should be made including all those people working in relevant services, because they also play an important part in marketing of fish and operation of the market.

Banda beach fish market area is a centre of marketing and traffic, because there are the ferry terminal connecting to Kigamboni side and about 5,000 people are visiting the area daily. This component is therefore intending to develop Banda beach area as the fish-marketing centre by expanding facilities and functions.

Activities 1: Construction of fish market facilities: Fish market facilities including restaurants, food bending shop, kiosks and processing places will be constructed in the area adjacent to the new fish market. The old fish market building will be repair to use for fishery cooperatives and fishers.

Activities 2: Management under the Market Management Board: Operation and management system will be prepared under the Market Management Board to be established for the new fish market.

Ilala Municipal office set up a working group to prepare a management plan/regulations of the new fish market prior to completion of the construction. The working group come into play on June 2001 and conducted registration of the people working in the market and workshops on management of the market. Proposing an organization of the

market management including a management board, the group prepared “policies and procedures manual of the market” as a basis for regulations on the market on December 2001. The working group is hereafter required to materialize the proposal. It is first necessary to establish the market management board and the market management system. The new market is also expected to function as a centre sending marketing information to further areas in future.

B Kivukoni Front Fishing Boats Mooring Area Improvement Component

Although the biggest fishing fleets are operated in Dar es Salaam, supporting facilities for coastal fishers and their fishing boats have not been developed at all. For promoting fishery, it is necessary to provide facilities and services supporting the fisherman and operation of their fishing boats as well as expansion of marketing. This component is to improve the mooring area in Kivukoni Front for supporting the fishers in connection with the new fish market. Direct objectives of the component are as follows,

- to secure safety mooring area for fishing boat.
- to support fishers’ activities and operation of fishing boats in connection with the new fish market.
- to create clean and hygienic environment for people

Activities 1: Construction of facilities in the mooring area: Facilities necessary for the mooring area will be constructed. The facilities include administration office, fishery cooperatives offices, meeting rooms, facilities for supplying water, fuel, workshop, fishers’ lockers, restaurants/kiosks, toilet and shower rooms.

Activities 2: Improvement of environment: Environment and hygienic condition of the area will be improved with measures including the followings;

- Rearrangement of the slope between Kivukoni Front street and the beach with planting trees and making a park,
- Extension of the existing drainage pipes, opened on the beach.
- Preparation of lavatory/shower rooms
- Arrangement of garbage boxes

Activities 3: Management of the facilities: A management committee will be organized with members of Ilala Municipal office, Tanzania Harbour Authority (THA) and representatives of each users groups of the mooring area. Management regulations will be prepared through discussions by the committee members. Under the management committee, a users cooperative will be organized to manage the mooring area.

(4) Facility and Equipment Plan

A Expansion of Dar es Salaam Fish Market Component

1) Basic Concept

The construction site with an area about same as the adjacent New Fish-Market is in a centre area of the city, which location is also an important area in various functions of the city. There are however a risk that the area would easily become a slum with illegal users unless the area is properly arranged based on a view of city planning in early time after completion of the New Fish Market. The basic concepts to be sought are the following points.

- Reinforcement of the functions of the New Fish Market
 - a) To secure places for Mamalishe, Dagaa-drying, fish-frying, shops and working areas, which could not accommodated in the new market.
 - b) To install an ice plant with ice storage and police post for up-grading functions of the new market

- c) To build offices for Fisheries Division to move in, a quality inspection centre and a training enter for consolidating the area as the general centre in the fishery sector.
- Development of the area based on a view of city planning.
- a) The area is an important point of traffic in the city, locating the ferry terminal to Kigamboni side.
- b) To develop the area as a water front for the people and local communities.
- c) To improve scenery and environment of the water front including Kivukoni Front and the ferry terminal.

2) Situations of the Site Area

The site area is adjacent to the New Fish Market and is an important centre of the city traffic as there are the ferry terminal connecting to Kigamboni side, bus terminal and taxi stops, transporting many people. Besides, the area is surrounded by many administration offices, the President official residence and commercial centre. It is therefore necessary to improve the site area with environment suitable for neighbouring such centre of the city.

The site is in a gentle slope area along the Ocean Road, which was in poor conditions, crowded with many people and shacks of fish vendors, Mamalishe before the construction of the New Fish Market. As the construction of the new market, all the shacks were demolished for site preparation. Electricity and Water are supplied in the site area, while the public drainage system has not prepared yet same as other areas of the city.

3) Facilities Plan

Outline of the Plan

The extension area is divided into the following two zones according to the basic concept. Both zones shall be planned taking into consideration the utilization by the general public not only the people working in the area, according to the basic concept to develop the area as a water front for the people and local communities.

- a) Mamalishe and ice-plant zone
Mamalishe, Ice-plant with storage, police box, Dagger drying place, fish-frying place, parking area
- b) New Fisheries Division and kiosk zone
Fisheries Division office building (including a quality inspection centre and a training centre), kiosks, public lavatory, guardsmen box

Components of the Plan

- a) Mamalishe and ice-plant zone

Number of the working people in the market has been increased along with progress of the construction of the new market and the research in 2001 also revealed that new market could not accommodate all the working people. This zone is to provide working place for those people who are not given their places in the new market.

- i. About 80 shops of Mamalishe are short in the new market and their construction is pressing need. In order to construct the shops in a short time with low cost, they are planned with prefabricated light steel-frame construction. Their scale is to be about same as ones in the new market.
- ii. As many people are expected to visit, an entrance from the Ocean Road should be wide so that they can easily enter into the zone. Some open spaces and promenades are provided in the zone.

- iii. Considering its scenery, the Dagger drying place is located at the most inner area of the zone. The working place for the 10 fish-fryers who can not be accommodated in the new market is built on the other side of the dagger-drying place and a service passage is provided between the two places. The open space beside the fuel-vending shed in the new market is utilized as a area for preparing fuel.
- iv. In order to increase the functions of the new market, an ice-plant of 20ton/day with ice storage of 30ton is built in the zone, partly facing the Ocean Road in front of the new market.
- v. An access road is arrange from the Ocean Road to the ice-plant for transporting ice by trucks. Necessary public facilities such as public lavatories and police post are provided.

Facilities	Structure/Finish	Area (m ²)	Remarks
A Ice plant, storage	CB construction, metal plate roof, 1-story	196(11.5 x 17)	
B Mamalishe	S construction, metal plate roof	900(5 x 18)	10 buildings
C Public lavatory	CB construction, metal plate roof, 1-story	88(11 x 8)	
D Police box	CB construction, metal plate roof, 1-story	66(11 x 6)	
E Fish-frying shed	S construction, metal plate roof	230(5 x 46)	
F Kiosk	S construction, metal plate roof	360(5 x 18)	
G Dagger-drying place	Plain pavement	225(8 x 45)	
H Parking place	Plain pavement	78(6 x 13)	

b) New Fisheries Division and kiosk zone

The zone, which is nearer the ferry terminal, is planed for the new office of the Fisheries Division and about 20 kiosks which can not be accommodated in the new market.

- i. As this zone is in the centre of traffic and many people are coming through, this zone has a large potential of shopping. Shops are arranged along flow limes of people.
- ii. The Fisheries Division occupies three floors of Land Office Building, but it is hard to be independent and also difficult to expand office space for future. Coping this situation, a new office building, prepared for equipping a computer system, is constructed for the Fisheries Division, which will consolidate the areas as the main centre for promoting the fishery sector of the country.
- iii. A quality inspection centre for the coastal area and a training centre are constructed as annex to the office building.
- iv. Calculation standard for office areas (about 11 m²/person) indicated by Architectural Institute of Japan is applied to estimate the area of the office building.

Facilities	Structure/Finish	Area (m ²)	Remarks
I Office building	CB construction, Ceramic roof, 2-3 story	1,548	Offices for 59 persons x 11 m ²
H Parking place	Plain pavement	300 (6 x 50)	
C Public lavatory	CB construction, Ceramic roof, 1-story	40 (5 x 8)	
J Guardsman box	CB construction, Ceramic roof, 1-story	20 (4 x 5)	

B Kivukoni Front Fishing Boat Mooring Area Improvement Component

1) Basic Concept

The following points are the basic concept for planning the facilities of this component.

- To secure a safety mooring area and its improvement for the fishing boats
The facilities in the site along the shore about 500m long are to be developed for improving the working environment for the people and supporting the fishing activities in connection with the new fish market.
- To improve scenery of the water front
The mooring area should have scenery suitable for its location, the city centre and facing the entrance to the Dar es Salaam port. The improvement of the mooring area is to create clean and hygienic water front environment together with the new fish market.

2) Situations of the Site Area

The site is the shore area about 100m width and 500m long from the water police station to the ferry terminal connecting to Kigamboni. In the other side of the site, crossing the Kivukoni Front street, there are the administration offices, hotels and commercial area. The site is in a slope area with 6 ~ 9m difference in level between the street and the shore. The tidal difference is about 3.5m in the spring tide. The bay, which the site faces, provides a calm water area and so has been used a natural harbour from old times. The site, Kivukoni Front mooring area is the biggest one in Dar es Salaam area and the number of fishing boats registered comes to about 170. There are however no infrastructures for supporting these fishing boats, except individually prepared simple shacks of Mamalishe, kiosks and fishing gear storage. Sanitary condition in the area is not good because there no sanitary facilities but only four water taps though many peoples are working in the area and drain water from the city area is discharged on the shore through three drain pipes. Garbage and wrecks have been left on the shore. These situations are not suitable for the city centre area.

3) Facilities Plan

Outline of the Plan

The facilities are planed with the following basic aims.

- To improve facilities for supporting the fishers and the people working in the area.
- To improve the environment and scenery of the area by arrangement of sanitary facilities including public lavatory, planting trees and repairing the slop.
- To renovate the old auction house and lavatory in Banda Beach.

Components of the Plan

- a) Dividing the site into two zone, the one near the water police station is for large fishing boats and the other one near the ferry terminal is for small fishing boats. In about mid area of the site, management facilities and supplying facilities are arranged. The management facilities include mooring area administration office, cooperative rooms, meeting/lecture room, police post, lavatory and the supplying facilities include fuel-supply station, workshop, ice storing room and water supply.
- b) The area adjacent to the water police station is to be boat repairing/ construction area. For this purpose, workshop facilities are arranged in the area. They include a carpenters workshop, engine repairing workshop, working areas for making ice-boxes and lamp globes.
- c) Mamalishe, kiosks, fishing gears storage, lavatory/shower rooms and garbage collecting equipment are arranged. Mamalishe are prepared not only for the people working in the area but also for the general public.

- d) The slope is repaired and planted for improving scenery of the area. Paved access roads are arranged from the main street down to the shore. Fence and street lamps are arranged around the area.
- e) Renovation of the old auction house in Banda Beach: After completion of the new fish market, the old concrete tables for auction are all demolished and arrange the following rooms with partition 2.6 m in height. The rooms include cooperative rooms, meeting room, engine repairing workshop, stores of fishing gears equipment and kiosks.
- f) Repair of the abandoned lavatory nearby the auction house in Banda Beach. The existing lavatory, currently not used, is to be repaired to utilize.

	Facilities	Structure/Finish	Area (m ²)	Remarks
A	Mamalishe	RC construction, Ceramic roof, 1 story	180 (60 x 3)	A1-A3 (3 places)
B	Fishing gear stores	RC construction, Ceramic roof, 1 story	360 (60 x 6)	B1-B6 (6 places)
C	Lavatory	RC construction, Ceramic roof, 1-story	114 (38 x 3)	C1-C3 (3 places)
D	Garbage box	RC construction	50 (25 x 2)	D1-D2 (2 places)
E	Fish-frying shed	RC construction, Ceramic roof	64	(2 places)
F	Management/ supplying facilities	RC construction, Ceramic roof, 1 story	281	Underground fuel tank
G	Workshop	RC construction, Ceramic roof, 1 story	100	Engine repair, Carpenters work
H	Old auction house	Existing building + RC partition	340	Rehabilitation

(5) Operation and Management Plan

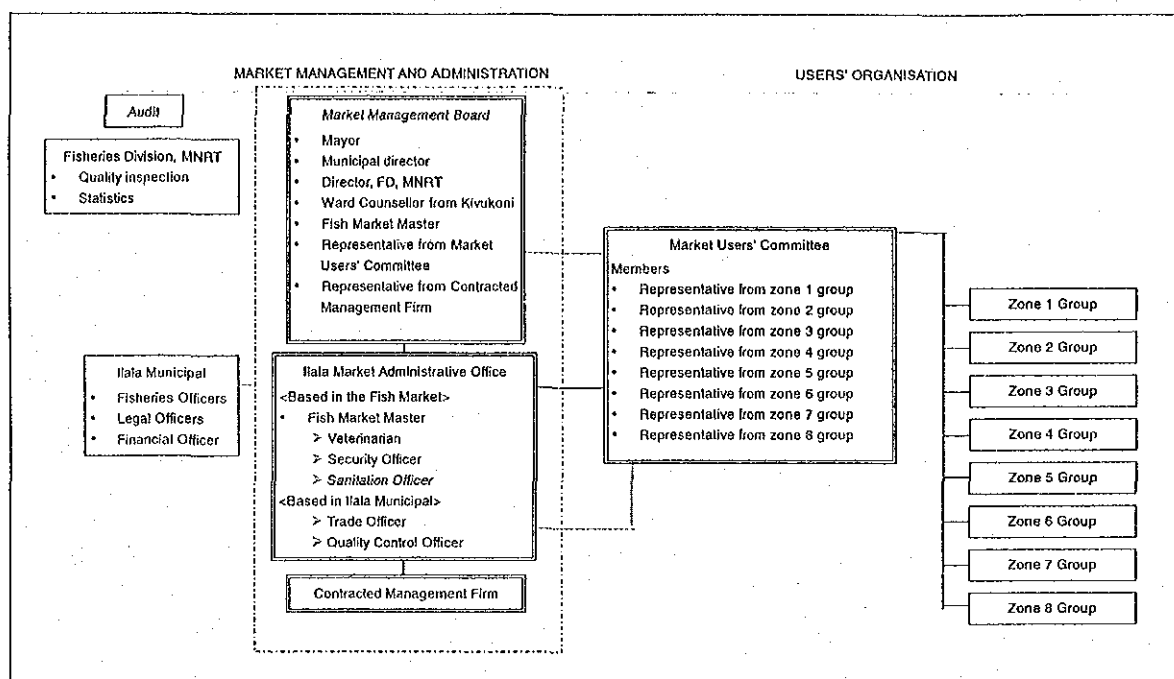
A Organization and Management

Expansion of Dar es Salaam fish market component

The market facilities expanded in Banda beach will be managed under the market management organization, originally established for management of the new fish market.

The market management organization consists of "Market Management Board", "Ilala Administrative Office" and "Contracted Management Firm". In addition to this, a market users' committee will be organized in order to take the users' opinions into management of the market. The Market Management Board, an organization for making final decisions on management of the market, is composed of members from Ilala Administrative Office, as the responsible office to the market, and representatives of the market users' committee, contracted management firm and the Fisheries Division. Ilala Administrative Office is composed of Ilala Municipal officers who undertake special duties relating to the market management. One of their main duties is supervision of the contracted management firm, to which Ilala Municipal Office entrusts the operation and management of the market including cleaning, guard of the market and control of water, electricity.

The market users' committee will consist of representatives of each zone group of the market, which has eight zone groups divided by categories of business. The committee will work as a representative of the market users, taking their problems or difficulties in the market and their requests, opinions on the management for discussion in the market management organization.



Market Management Organization Chart

B Kivukoni Front Fishing Boat Mooring Area Improvement Component

For management of the fishing boat mooring area, a management committee will be organized with members of Ilala Municipal office, Tanzania Harbour Authority and representatives of the users' cooperative. The committee will prepare regulations for management of the mooring area. The users' cooperative will be established with all of the users mooring area, such as boat owners, fishers, carpenters and food-benders. The cooperative will have sub-sections in charge of management, accounts, maintenance, sanitation and security to manage the mooring area. The cooperative is responsible to maintain security of the mooring area in collaboration with the Ilala city police, setting up a police post and patrolling in the area.

The users in principle shall share expenses for maintenance of the mooring area, for which source of revenue will be the users' cooperative membership fee, boat registration fee, charges for tenants and charges for using facilities.

Expenses will be the followings;

Expenses	Descriptions
Maintenance of facilities	Mainly expenses for maintenance of buildings. There will be no big machinery which needs large maintenance cost.
Cleaning the area	Cleaning the facilities (toilet/shower), gathering garbage
Water	Food benders shall pay for water they use for their business.
Electricity	Mechanics and carpenters shall pay for electricity they use in the workshop for their job.

C Personnel

- a) The expanded market area will be managed inclusively in the management system of the new fish market.
- b) Personnel for management of the fishing boat mooring area

As mentioned above, the users cooperative will manage the area under the control and supervision of Ilala Municipal Office and the management committee. And the personnel in charge for the management are planned as follows.

Ilala Municipal Office	Officers of the section in charge of the mooring area.
Management committee	Representatives from Ilala Municipal Office, Tanzania Harbour Authority and the users cooperative.
Representatives of the users cooperatives	Representatives of the members
Management staff of the users cooperative	Management staff in charge of management, accounts, maintenance, sanitation and security.

The following instructors will be required to train the management staff of the users cooperative in addition to assistance for establishment of the management system.

Project coordinator	Instruction and advice project execution and assistance for establishment of management system, coordinating relevant agencies.	4 months
Expert of cooperative management	Instruction to form the users cooperative and its management. Advice on utilization and operation of the mooring area.	12 months
Expert of administration, accounts, management of funds.	Instruction on utilization of the mooring area, collection of fees, accounts, book keeping, management of funds.	6 months

D Training of the Management Staff

A practical management system and capacity of the users cooperative are indispensable for proper utilization and management of the mooring area. The aforementioned experts will train the management staff for management of the cooperative, utilization of the mooring area, collection of fees/levies and accounts.

(6) Work Plan

Major Activities	Responsibilities	Schedule	Output
[Expansion of DSM Fish Market Component]			
Construction of fish market facilities	Ilala Municipal	_____	Expansion of market facilities
Management of the facilities	Management committee	_____	Management by the committee
[Kivukoni Front Fishing Boats Mooring Area Improvement Component]			
Construction of facilities in the mooring area	Ilala Municipal, THA	_____	Improvement of facilities
Improvement of environment, sanitary conditions	Ilala Municipal, Management committee	_____	Repair of slope, planting trees, sanitary facilities
Management of the facilities	Management committee	_____	Set up of Management committee

(7) Cost Estimate

A Expansion of Dar es Salaam Fish Market Component

• Mamalishe and Ice-plant Zone

		Cost (Tsh)	Cost (US\$)	Remarks
Cost for construction	A	23,520,000	26,830	Ice plant building
	B	63,000,000	71,867	Mamalishe
	C	13,200,000	15,058	Lavatory
	D	9,900,000	11,293	Police box
	E	16,100,000	18,366	Fish frying shed
	F	28,800,000	32,853	Kiosk
	(Sub-total)	(154,520,000)	(176,268)	
1) Facility works		9,850,000	11,236	
2) Dagaa drying area		450,000	513	Ice making capacity = 20ton/day
3) Parking area, exterior works		780,000	890	
4) Refrigerating machinery		620,000,000	707,262	Storage capacity = 30ton
Total		785,600,000	896,196	

Because the expansion of Mamalishe, fish-frying shed, kiosks and dagger-drying area is an urgent need in order to establish the proper management system of the fish market, the expansion facilities are planned to be constructed in a short time with low cost.

• New Fisheries Division and Kiosk Zone

		Cost (Tsh)	Cost (US\$)	Remarks
Cost for construction	C	6,000,000	6,844	Ice plant building
	I	278,640,000	317,857	New FD's office
	J	3,000,000	3,422	Lavatory
	(Sub-total)	(278,640,000)	(328,123)	
Facility works		25,000,000	28,519	
Parking area		900,000	1,027	
Exterior works, Planting		800,000	913	
Total		314,340,000	358,582	

B Kivukoni Front Fishing Boat Mooring Area Improvement Component

		Cost (Tsh)	Cost (US\$)	Remarks
45 Cost for construction	A	63,000,000	71,867	Mamalishe
	B	144,000,000	164,267	Fishing gear storage
A. Direct cost	C	62,700,000	71,525	Lavatory
	D	7,500,000	8,556	Barbage box
	E	16,000,000	18,252	Fish-frying shed
	F	174,550,000	199,117	Management/supply Facilities
	G	75,000,000	85,556	Workshop
	H	56,206,000	64,117	Rehabilitation
	(Sub-total)	598,956,000	683,257	
	b. Facilities	261,812,000	298,661	
c. Others (Exterior works etc)		174,788,000	199,388	Fence, gates, planting
(1) Common provisional works		33,004,000	37,649	
(2) Site expenses		159,100,000	181,492	
(3) General management cost		133,570,000	152,369	
1. Civil works				
(1) Direct cost		262,182,000	299,083	

	Cost (Tsh)	Cost (US\$)	Remarks
(2) Common provisional works			
(3) Site expenses			
3. Building equipment	45,140,000	51,493	
4. Designing/supervision cost	199,800,000	227,921	
5. Equipment	15,764,000	17,995	ANNEX 2.2-1
Total	1,884,116,000	2,149,308	

	Cost (Tsh)	Cost (US\$)	Quantity	Unit cost
[Project Operation]				
Training and studies				
Technical assistance (Management)	70,080,000		4MM	20,000US\$
“ (Cooperative)	60,864,480		12MM	5,790US\$
“ (Accounting)	30,432,240		6MM	5,790US\$
Vehicle	37,842,200		12 vehicles	3,600US\$
Equipment	3,000,000			
Sub-total	202,219,920	230,845		
Grand Total of Programme	3,186,275,920	3,634,931		

(8) Cost Analysis of the Fishing Boat Mooring Area

Cost of operation and maintenance of the mooring area is roughly estimated at about Tsh. 5.4 million a year, which can be covered with levies, fees paid by the users. (See ANNEX 2.2-2)

(9) Monitoring

The Programme Implementing Committee, which is mentioned in the Chapter 5, will supervise, monitor and evaluate the implementation of the components. The object of monitoring in the case of construction of fish market facilities is establishing facilities and management committee, and also implementing market management by committee. Situation of market usage like frequency of use can be one of index used for monitoring.

The object of monitoring in the case of the Kivukoni Front Fishing boats mooring area improvement component is the same as that of construction of fish market facilities. Monitoring index is same as well.

For the component of the fish market expansion, the followings will be subjects of the monitoring.

- Construction of the facilities
- Establishment of the market management committee
- Actual situation of the management of the market

Number of the users and customers could be one of the indicators for evaluation of the situation of the management of the market

For the Kivukoni Front fishing boat mooring area improvement component, construction of the facilities and establishment of the management system will be subjects of the monitoring. Number of the users could be one of the indicators for the evaluation.

	Method for collecting monitoring index	Index of monitoring
Ensure a safety mooring area	Registration of fishing boats, reporting of arrival and departure Reporting to the management office	Number of fishing boats uses the mooring area Number and case of accidents in the mooring area
Support of fisher's and other user's activity	Registration of users	Number of users by occupation
Support for fishing boats' activities	Report from boat owners	Time and frequency of supply (oil, water, ice, etc.), engine, time and frequency for repair
Improvement of environmental hygiene	Regular observation	Garbage Cleaning condition of toilet facilities Trees

(10) Environmental Impact

This programme could be classified as "development on beach front" listed under NEMC's Tanzania Environmental Impact Assessment Procedure, Appendix 1, and would require mandatory EIA or an environmental consideration report (as was the case for the Banda Beach Fish Market). Because the components of the market expansion and the fishing boat mooring area improvement do not have any facilities to be constructed in the sea, the construction will not cause any influence on the environment such as seawater getting turbid and change of the shorelines. Both the components do not discharge a large quantity of wastewater or noises in their operation and hence the components will not affect the environment. As such a full EIA would not be necessary.

The fishers and people working in the Kivukoni Front fishing boat-mooring area have to move to a temporary place prior to the construction work. It is necessary to register the fishers and people who are already working in the mooring area and make arrangements so that the registered fishers and people can return to the new mooring area as soon as the construction is finished.

In Banda Beach fish market, the registration of the people working in the market was carried out in July 2001 and measures will be taken so as to give the registered people a priority to move into the new market.

Prior to the implementation of the market expansion and improvement of the mooring area, Ilala Municipal Office shall prepare temporary working places for the fishing boat, fishers and all the other working people during the construction period. It is also indispensable to explain the programme to the working peoples who have to move and make their consent in order to avoid their confusions. It is essential to make an impartial distribution of the working places for the people when they return to the newly constructed facilities.

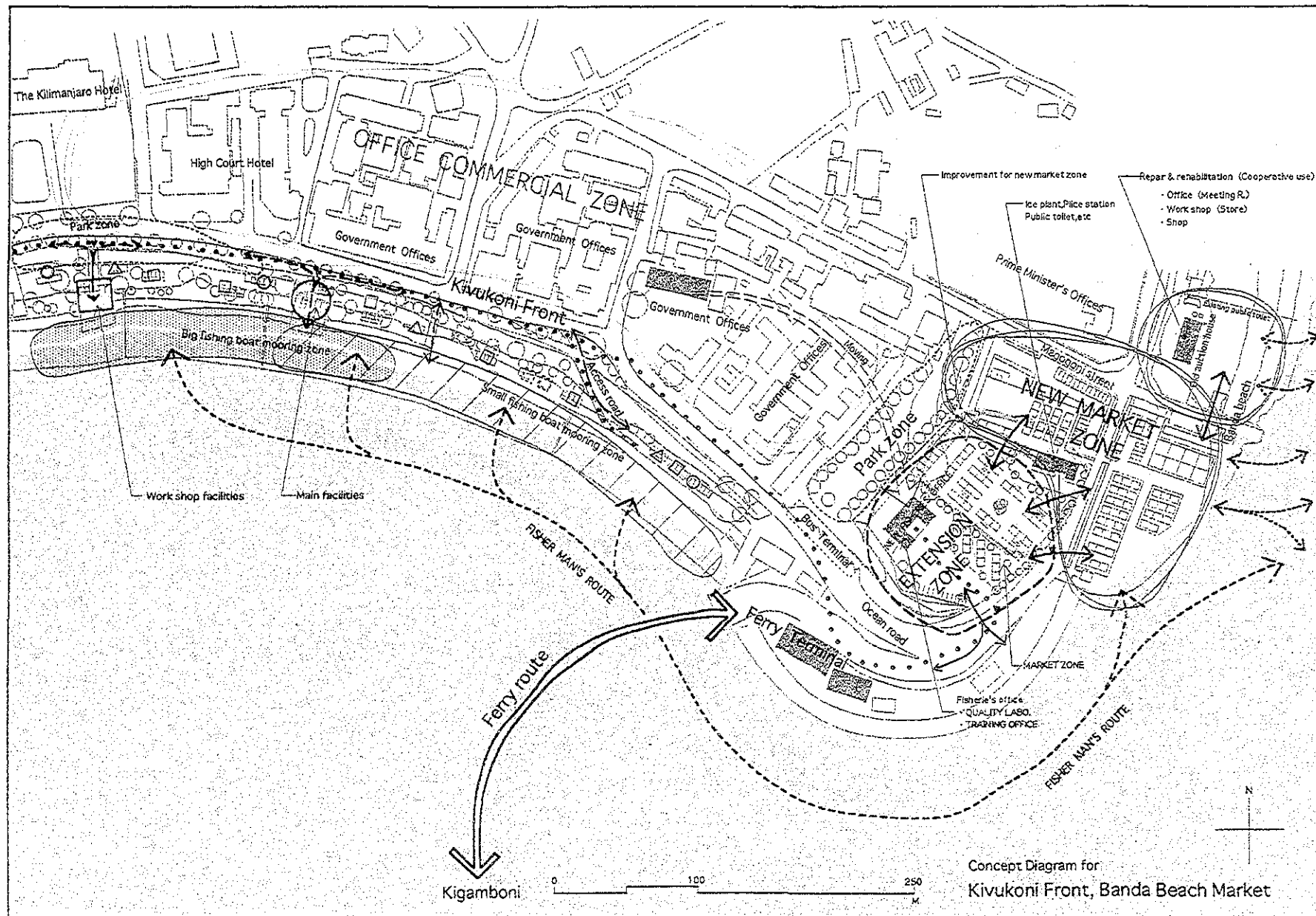
(11) Linkage

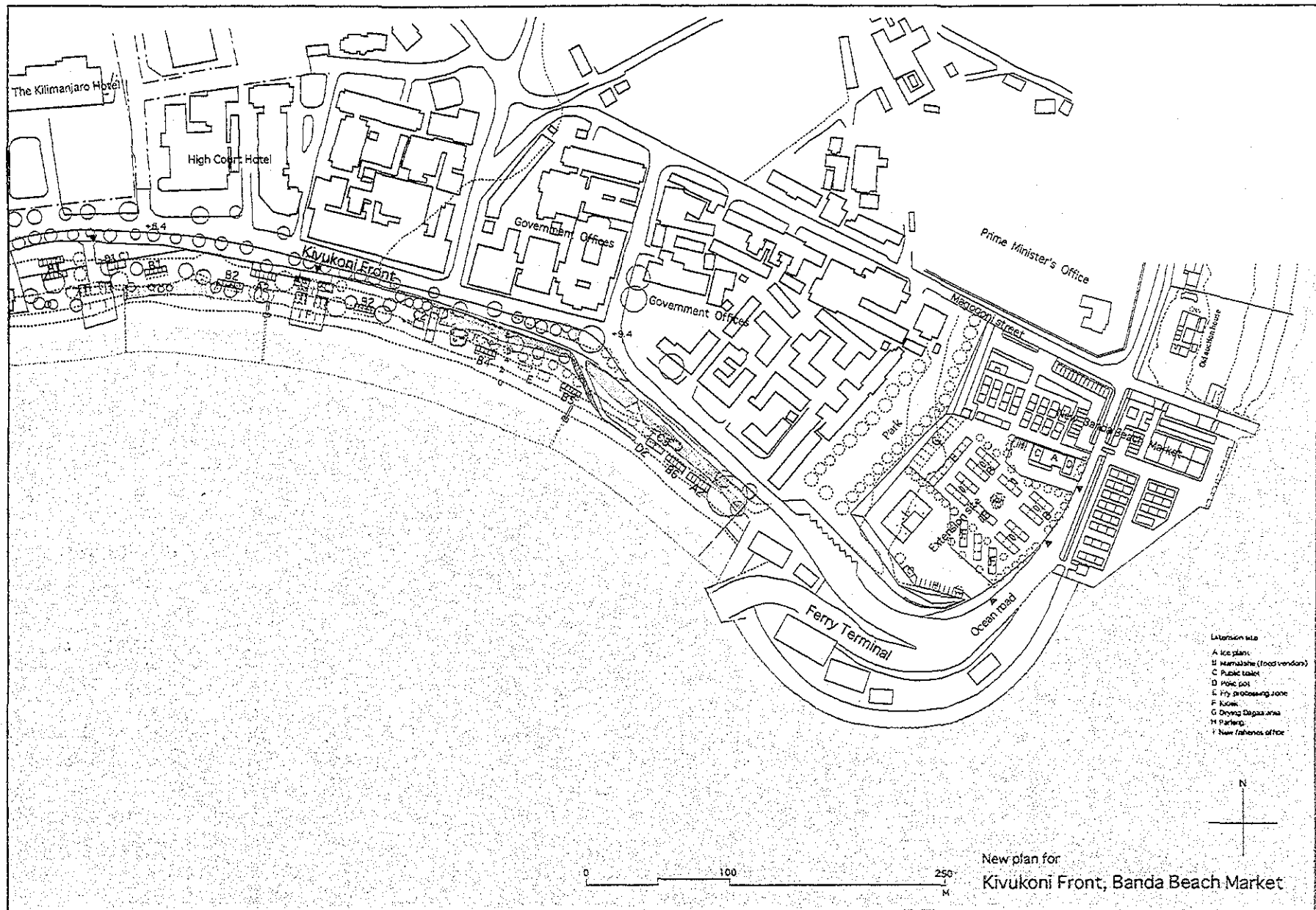
A Inter-sectional Linkage

Kivukoni Front fishing boat mooring area belongs to Ilala Municipal administration and the coast area of Kivukoni Front is under control of Tanzania Harbor Authority. Both authorities' understanding and collaboration to the component are therefore indispensable to its implementation and management.

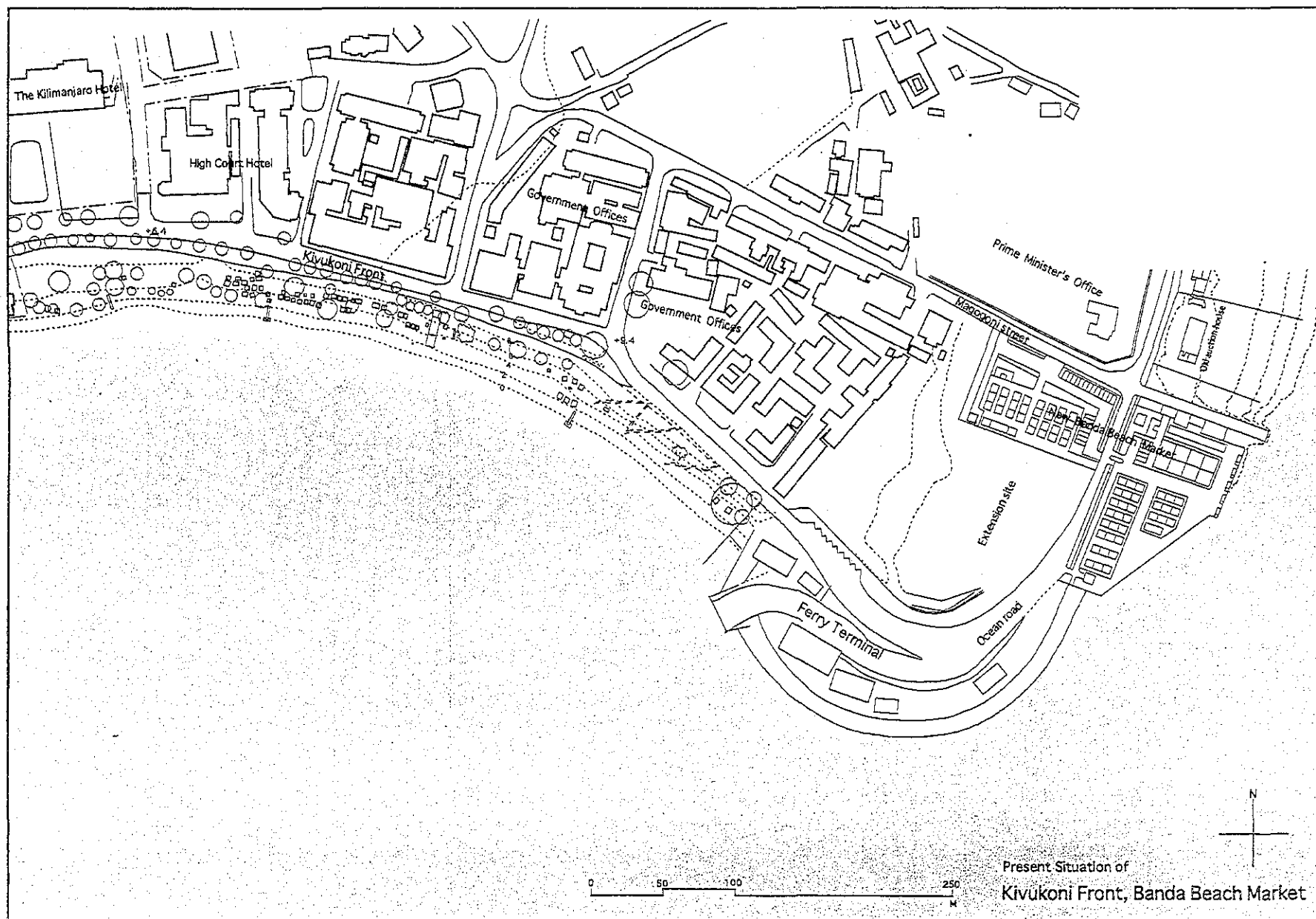
B Project Linkage

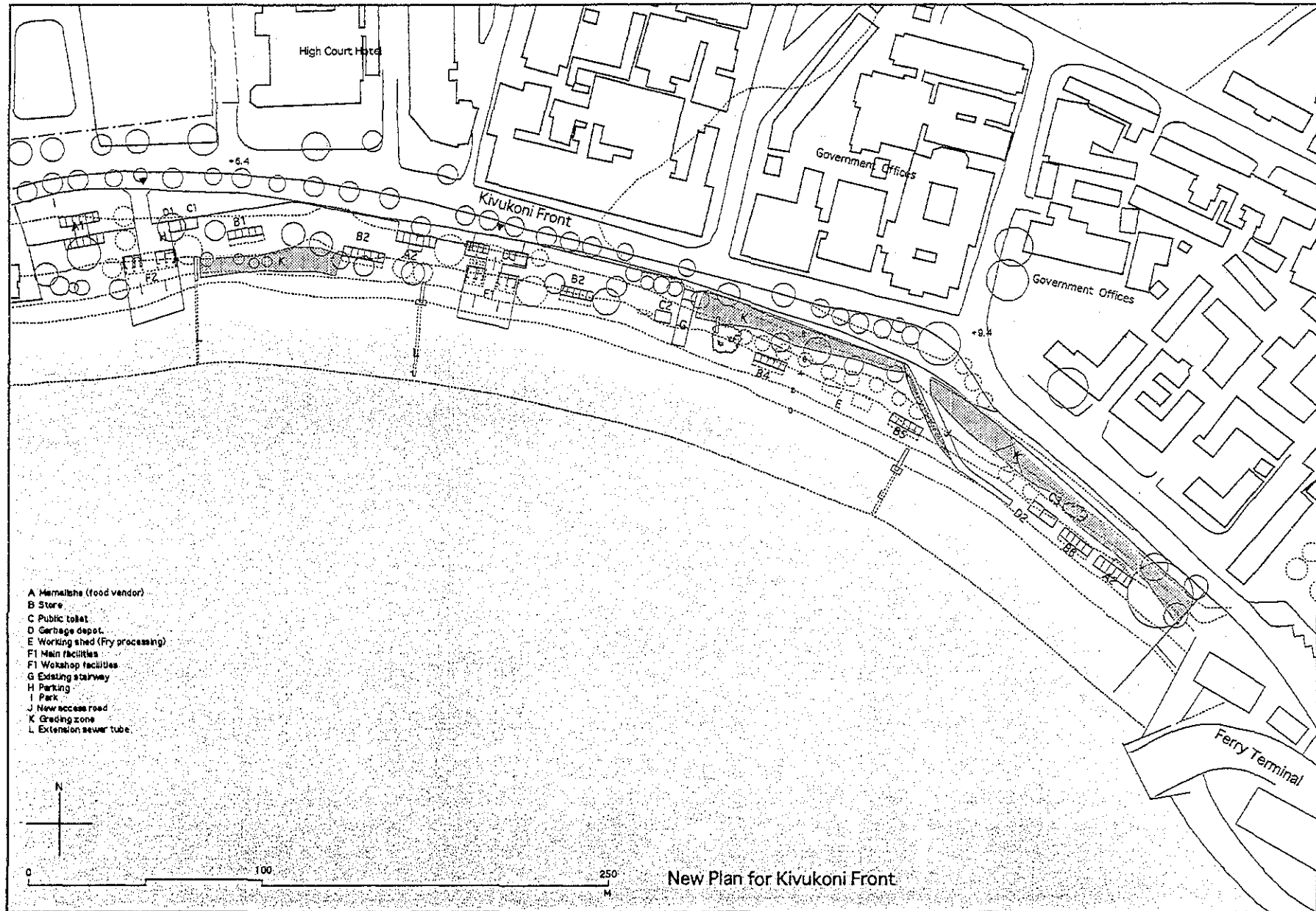
The construction of Dar es Salaam Fish Market (Banda Beach Fish Market) has been constructed under a grant assistance of Japan. Since the project executing agencies in Tanzania side are Ilala Municipal Office and the Fisheries Division, Ministry of Natural Resources and Tourism, it is necessary to have discussions with both agencies to prepare the programme in particular the fish market expansion. Besides, they are required to well instruct the working peoples.





New plan for
Kivukoni Front, Banda Beach Market





Project for Dar es Salaam Fisheries Infrastructure Improvement Programme
Perspective of extension site



