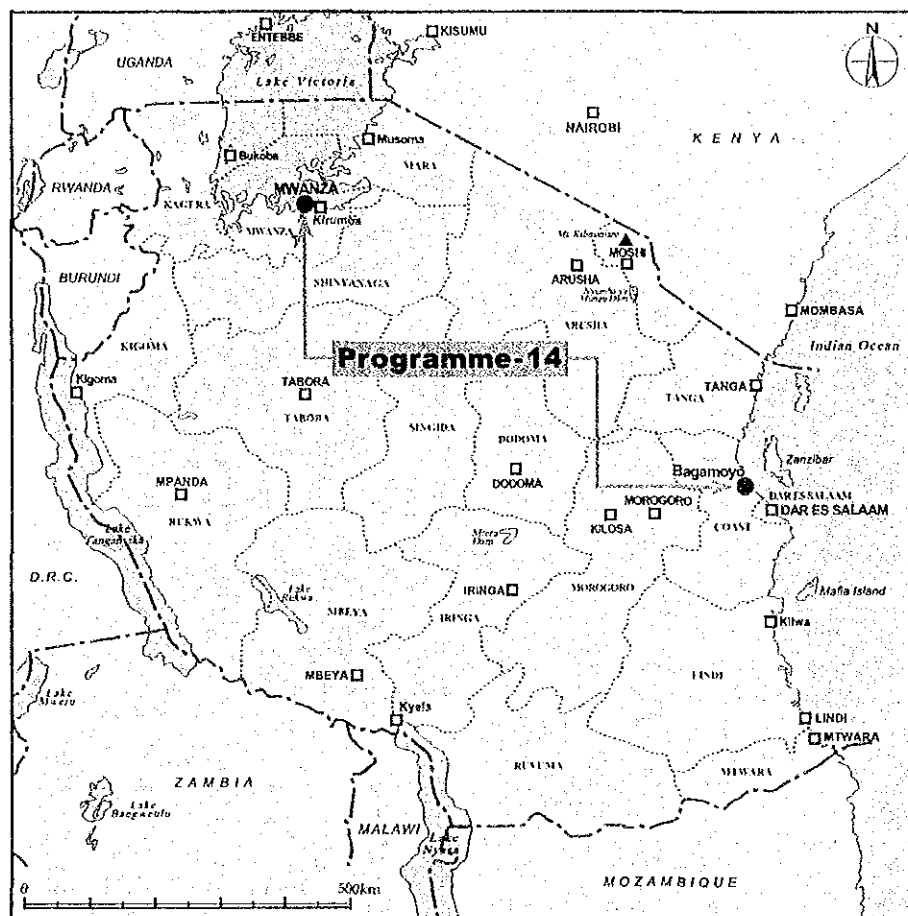


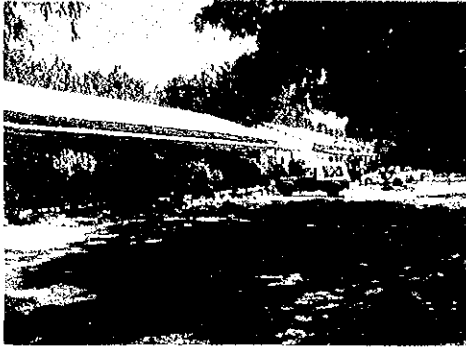
Programme-14

2.14 Fisheries Training Institute Improvement Programme



Planning site : Nyegezi(Mwanza), Mbegani(Bagamoyo)

Nyegezi Freshwater Fisheries Training Institute



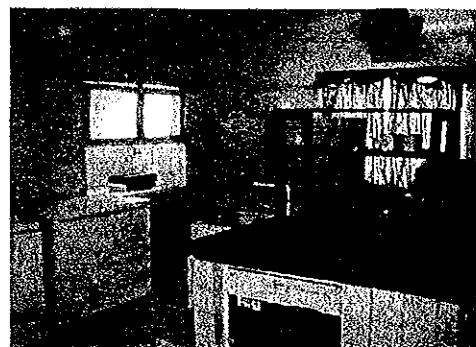
View of Nyegezi's classrooms and workshop.



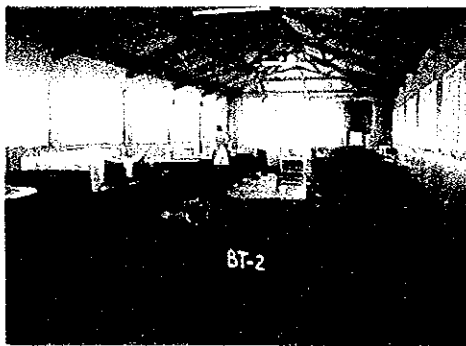
View of Nyegezi's fish processing buildings and facilities.



Nyegezi's cold storage facilities.



Nyegezi's laboratory.



TAFIRI's fish culture facilities in Nyegezi.

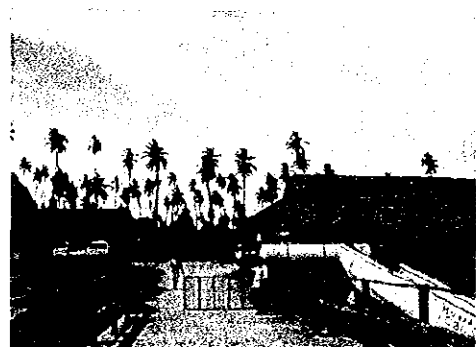


Nyegezi's workshop.

Mbegani Fisheries Development Center



Mbegani's workshop.



View of Mbegani's buildings from its jetty.

2.14 Fisheries Training Institute Improvement Programme

(1) Programme Description

A Summary

Strengthening the capabilities of private sector fishery related personnel and government fisheries officers through educational and training programmes is essential in order to improve public fisheries services and to conduct effective fishery extension activities. However, the fishery educational facilities and equipment are badly depreciated, and the shortage of advanced training for instructors has greatly lowered educational quality. This has greatly impeded efforts to strengthen the capabilities of fishery related personnel and the situation must be quickly improved. Under the Fisheries Education Improvement Programme, the facilities and equipment of the Nyegezi Freshwater Fisheries Training Institute will be improved and a retraining course for its faculty will be implemented to strengthen educational services. In addition, this will be implemented in conjunction with the Master Plan's priority programme to strengthen personnel capabilities.

B Project Site: Nyegezi Freshwater Fisheries Training Institute (Mwanza)

C Duration: 24 months

(2) Objectives and Justification

A Objectives

- a) The depreciated educational equipment of the Nyegezi Freshwater Fisheries Training Institute will be replaced to keep abreast with the technical development of artisanal fisheries; and practical training services that meet the needs of the existing fisheries industry will be pursued.
- b) High quality training services will be provided following the replacement of the equipment and facilities of the Nyegezi Freshwater Fisheries Training Institute and the retraining of its faculty members.
- c) Measures to strengthen the capabilities of fisheries officers and private fisheries personnel will be pursued in conjunction with improved training services.
- d) Restructuring the organization and creating new financial sources for the fisheries training institute will contribute to the sound operations of the institute and enable it to provide inexpensive and efficient training services.
- e) A short-term programme will be developed and services will be provided in the Master Plan to meet the training demand of the district officers and fishers.

B. Justification

Presently, the Nyegezi Freshwater Fisheries Training Institute and the Mbegani Fisheries Development Centre are the only two vocational fisheries institutes in Tanzania. Both have functioned as training institutes to foster fisheries officers, and the majority of the central and regional Assistant Fisheries Officers are graduates of these institutes. However, the employment freeze on new civil servants in the 1990s greatly reduced the number of students, and at the Nyegezi Freshwater Fisheries Training Institute alone, there were only 12 graduates in 1995. In contrast, Nile perch processing factories in the private sector has created an employment market of 3,000, and in recent years, the number of private students has replaced the government officers at the institutes. A total of 53 private students in 2000 and 80 students in 2001 matriculated to the Nyegezi Freshwater Fisheries

Training Institute. However, the educational equipment of the institute that was originally purchased in the 1960s and 1970s, are unable to provide the educational services that are in demand by the private sector. The lack of proper equipment has hindered the practical training of students and fisheries personnel undergoing retraining. Subsequently, it has become a bottleneck to measures aimed at modernizing the fisheries industry and strengthening the capabilities of fisheries related personnel. The new educational equipment that will be provided for the Nyegezi Freshwater Fisheries Training Institute will contribute to fostering high-level fishery related personnel by raising the motivation of fishery students.

Of the two vocational institutes, the Nyegezi Freshwater Fisheries Training Institute provides a one-year general course and a two-year Certificate Level course, whereas the Mbegani Fisheries Development Centre offers three-year vocational education according to course and issues a Diploma upon completion. However, in view of the current number of the 100 to 150 students, it is inefficient to operate a vocational fisheries institute with equipment and faculty members in two locations. More than 80 percent of Tanzania's fishery production and fishers are engaged in inland fisheries, and 70 percent of the fishers and 60 percent of production is found at Lake Victoria. In addition, 71 percent of the district fisheries officers working in the field (Assistant Fisheries Officers and technical experts) are employed in inland fisheries management and extension activities. Subsequently, in future, it is appropriate to pursue measures to upgrade and intensify the training functions of the Nyegezi Freshwater Fisheries Training Institute located at Lake Victoria. Under the Master Plan, the Nyegezi Freshwater Fisheries Training Institute will be expanded to include a Diploma course, while improving the educational services of the existing two-year course, the short-term course, and the school's equipment and facilities.

The 15 priority projects that will be implemented under the Master Plan target the short-term training of 41 fisheries officers. The training opportunities for fisheries officers under the position of Assistant Fisheries Officers are extremely limited. Since many of these officers do not have an educational background in fisheries, implementing a training courses for such officers will have a direct impact on improving the accuracy of fishery statistics and daily fishery extension activities such as technical advice to fishers. Additionally, since many fishers will not want to stop their fishing operations in order to undergo a long-term training course, it is important to develop training activities that tour each fishing village or one-week short-term training programmes.

(3) Components and Activities

- a) Survey on future demand of the Nyegezi Freshwater Fisheries Training Institute and follow-up survey on graduates
- b) Construction of new buildings for the Nyegezi Freshwater Fisheries Training Institute and purchasing training equipment

Facilities and equipment that are suited for the existing general fisheries course (2 years) and the short-term course (1 year), and the individual short-term course for private fishers will be provided.

- c) Implement retraining activities for faculty members of the institute.

Of the institute's 41 member staff, 13 instructors will undergo a retraining programme. Although the four departments of navigation, food technology, machinery, and marine biology are taught at the institute, an overseas and observation training programme to study advance cases in fishery cooperatives, fish processing, and fisheries community development will be implemented.

- d) Restructure both Nyegezi Freshwater Fisheries Training Institute and the Mbegani Fisheries Development Centre

The three-year specialized course at this centre is focused on industrial fisheries, where there is minimal human resource demand and which is unsuited to the conditions that prevail in the country. A survey on the educational demand for technical training, fisheries management, fisheries operations based on the concept of managed fisheries will be conducted and the educational content of the schools will be revised. Nearly 80 percent of the fisheries industry in Tanzania is inland fisheries. Therefore, the Nyegezi Freshwater Fisheries Training Institute and Mbegani Fisheries Development Centre will be restructured—an intensive course will be created for the former and the latter will focus on technical inland fisheries development. In addition, in conjunction with measures to restructure the institutions, the a study on the qualifications of the 140 staff members and both internal and external training activities for the staff will be conducted.

(4) Training Plan

A Students

The following four types of students will be targeted for the training programmes at the Nyegezi Freshwater Fisheries Training Institute based on its past achievements.

- General students: Degree-earning students
- Regional government fisheries officers: Re-education of district fisheries officers
- Artisanal fishers: National short-term training course in specialized technology
- Staff members of private fisheries companies: Short-term course to foster technicians of private companies

The number of students in 2001 at the Nyegezi Freshwater Fisheries Training Institute was 116, a large increase from 1999. The average number of graduates over the past five years has been 21.2 students, but rose to 35 graduates in 2000. In view of the increasing number of students matriculating to the school in recent years, the Institute estimates new 150 students new per year.

The re-education programme for regional government officers is usually conducted in the general department courses, and the officers comprise 2 to 3 percent of the students. Therefore, highly specialized training courses are held at the Mbegani Fisheries Development Centre and the training course for technicians without a Certificate is held at the Nyegezi Institute. Unfortunately, the educational equipment at both these schools are depreciated and the training courses have been hampered. Presently, there are 307 regional fisheries officers and technicians, of which 218 or 71 percent are engaged in inland fisheries in the districts. Therefore, the employment of new personnel is about 30 people per year (the years employed is estimated at 30 years), and if 10 percent of the staff undergo re-educational training annually, the annual demand for educational training will be 60 people. In view of the scope of this demand, the scope of both the Nyegezi and Mbegani schools will be excessive. Hence the training functions of the Nyegezi Freshwater Fisheries Training Institute will be intensive since Tanzania conducts mainly inland fisheries. Under this project, the number of fisheries officers in the inland fisheries districts who will undergo training is estimated at 10 percent or 20 officers annually.

In 2001, 60 artisanal fishers participated in a short-term training course (12 days). The total training cost was covered by the Fisheries Division and the same training programme will be held in FY2002. The average annual number of participants of this short-term course from 1996 to 2000 was 495, and it has become an important course at the institute.

Approximately 3,000 people are employed at Nile perch processing plants in Mwanza. Presently, a training programme that assists private companies does not exist. Moreover, the inadequate facilities and equipment at the Nyegezi Institute has made it difficult to meet the training needs of the processors. In particular, the annual number of graduates of the fish processing/quality course

averages only three to four students, and the services and private sector needs do not comply. In addition, the demand for adequate training in the HACCP and ISO9000s and other sanitation control methods is anticipated to grow. Therefore, if a short-term programme is developed in this area, the institute will be able to increase its number of trainees.

B Training Course Content

Presently, the Nyegezi Freshwater Fisheries Training Institute offers seven programmes in fisheries training—a two-year general course, a one-year course in *refrigeration machinery*, a fish processing and quality control, and aquaculture, and a one-to-four week short-term course. The matriculation ratio is 70 percent and training course participation is 30 percent, but despite these figures, much of the training equipment is lacking and the courses have been hampered. Presently, its courses do not reflect the existing conditions and the fisheries management course must be improved.

	Course		The Number of Limit (students)	Plan of Student Limit
Class Room 1	General Fishing	First Year	35	45
Class Room 2	General Fishing	Second Year	35	45
Small Class Room 3	Refrigeration		15	45 (15x3)
Small Class Room 4	Processing/Quality Management		15	15
Small Class Room 5	Aquaculture		15	15
Total			115	165

Presently, there are five classrooms for each course at the Nyegezi Freshwater Fisheries Training Institute. The refrigeration machinery course will be upgraded with the cooperation of VETA from a one-year to a three-year course (will be divided into grades I to III) and a shortage of classrooms is anticipated. In addition, there is a shortage of classrooms for the short-term course, and the addition of a small classroom to accommodate 15 students, two classrooms, and a multi-purpose room is needed.

Nearly 99 percent of the fisheries industry in Tanzania is comprised of artisanal fisheries, and the demand for official qualifications for artisanal fishers is low. Hence, the focus of the Nyegezi Freshwater Fisheries Training Institute will be on the training courses for district fisheries officers and a large-scale increase in the scope of the Institute is not anticipated. The expanded scope of the Institute has been kept to a minimum and in view of its goal to provide practical educational services using adequate equipment, the project is considered appropriate.

(5) Facilities and Equipment Plan

A Facilities Plan

a) Basic Design Policy

The two foremost fisheries training institutions in Tanzania, the Nyegezi Freshwater Fisheries Training Institute and the Mbegani Fisheries Development Centre, have been responsible for fostering government fisheries officers, but with the employment freeze on new recruits in recent years, their popularity has declined. As a result, the instructor/student ratio has become extremely high. However, in the case of the Mbegani Fisheries Development Centre located on the coast bordering the Indian Ocean, its educational curriculum and facilities on freshwater fisheries are not anticipated to be reduced in view of the large lakes and water bodies in the country. Therefore, the following concept is proposed aimed at new development for the Centre.

- Explore potential new educational possibilities and stimulate the educational environment by introducing a new curriculum.

- Introduce private sector activities and new programmes.

b) Summary of the Project Site

The Nyegezi Freshwater Fisheries Training Institute is located 30 minutes by car in the suburbs of Mwanza city. TAFRI and other research institutions and well-known educational institutions are located nearby. The site is very spacious, and in addition to the education related campus, there is a dormitory for staff members and students. However, only 40 percent of the area is in active use and the remainder of the site is a spacious field. The campus area is located at the end of the access road that branches off from the main arterial road and is next to a culture fish pond. It is enclosed by a fence and borders the lake. It was built in 1967 and the classrooms, training room, laboratory, and administrative office were built in the 1970s are scattered throughout a wooded area.

c) Facility Content

Summary of the Plan

- The functions of each of the facilities and the zoning of the current campus are vague; the roads remain unpaved, and the campus lacks the atmosphere of a higher institution of learning. A segment of the facilities was built more than 20 years ago and they are depreciated and unable to cope with the installation of new equipment.
- A clearly zoned facility block based on functions, i.e., classes, laboratory, workshop, and administrative office, will be created and a surface plan with clear orientation will be prepared.
- The new facilities will be built to blend in with the natural environment.

Components of the Project

The following components of the project will include the following based on interviews with the institute related personnel, the floor plan, the data obtained from questionnaires, the formal request, and others.

- Administrative offices:** A segment of the depreciated office buildings will be torn down and a new facility will be constructed that will be integrated with the processing and inspection departments. A new large, modern, and separate building will be constructed. The office and administrative sections will be separated by a corridor.
- Renovation of the processing and factory building:** The processing and inspection related facilities will be renovated to integrate with the adjacent storage and workshop building. New equipment will be provided to strengthen the facilities' functions.
- New classrooms:** A new classroom building with four large classrooms with a seating capacity of 35, three small classrooms with a seating capacity of 15, a staff room, and canteen will be constructed.
- Construction of a laboratory and workshop building:** A workshop building containing five workshops—engine, welding, electricity, freezer, and electronic equipment, restrooms, staff rooms, a laboratory workshop will be constructed.
- The above two buildings will be placed horizontally so that it connects directly to the paved access road leading to the jetty from the gates.
- The present entrance gate will be moved and the new gate will face the paved access road leading directly to the jetty on the lake. By placing the new buildings in a straight line, an orderly campus plan will be achieved.
- The access road leading from the new gates to the jetty will be paved with the same concrete as the jetty.

	Institution	Structure	Area m ²	Note
A	Management, office building	CB, ceramics roof, 1storied-house	308 (11x28)	
B	Processing, factory building	CB, ceramics roof, 1storied-house	450 (9x50)	construction
C	Class room building	CB, ceramics roof, 1storied-house	504 (9x56)	
D	Experiment/workshop building	CB, ceramics roof, 1storied-house	576 (9x64)	
E	Jetty	RC	375 (5x75)	
F	Guard	CB, ceramics roof, 1storied-house	5	

Note: CB= Concrete Block
RC= Reinforce Concrete

B Equipment Plan

Review of the Equipment and Facilities

Excluding the renovated freezer and cold storage facilities provided by Japan's OECF (Overseas Fisheries Cooperation Funds) in 2000 at the Nyegezi Freshwater Fisheries Training Institute, all the remaining equipment are depreciated and must be replaced with modern equipment. Based on interviews, discussions, and questionnaires submitted by the institute's educational personnel and office staff members, a summary of the list of equipment that is lacking in the educational and training courses has been given in Annex 2.14-1. The equipment required for each department will be reviewed according to this list.

(6) Operation and Management Plan

A Management System

The project implementing body is the Nyegezi Freshwater Fisheries Training Institute (see Annex 2.14-2). The institute's training section is comprised of four departments and the administrative section is responsible for managing the entire school. There are presently 45 staff members (13 instructors, and 32 staff members). The maintenance and control of the institute is adequately managed by the technical staff (see Annex 2.14-3). If the institute needs to increase its staff members in future, staff members from the Mbegani Fisheries Development Centre will be sent.

B Annual Budget and Maintenance Costs of the Nyegezi Freshwater Fisheries Training Institute

Following the implementation of the project, the maintenance costs are estimated to be about US\$ 70,922, including the renovation and replacement costs (about 36 percent of the FY2000 budget). This cost will be borne by the Fisheries Division.

Renovation cost	US\$ 12,309	3% of equipment cost
Renewal cost	US\$ 58,613	Average Durability years:7years
Total	US\$ 70,922	

The educational costs of general students will be paid by the beneficiaries and the Fisheries Division must set up a new budget for this programme. The re-educational training costs of fisheries officers and the training of the Master Plan staff members will be paid from the Fisheries Division budget.

Training will not be restricted to the programme implementation period and should continuously be implemented by the fisheries Division when it is required.

(7) Work Plan

Activity	Responsible Organization	Process								Outcome
		First Year				Second Year				
Demand Prediction survey and Follow-up survey of Graduates at Nyegezi Freshwater Fisheries Training Institute (NFFTI)	NFFTI									Survey Report
New building establishment and Buying training equipment of NFFTI	MNRT/ Fisheries Division		Detailed Design			Construction				New Training building/equipment
Re-education of facilitator at training school	NFFTI									Professors' Training
Re-organization of NFFTI and Mbegani Fisheries Development Center	MNRT/ Fisheries Division									Decision of re-organization contents

(8) Cost Estimate

Summary of Costs

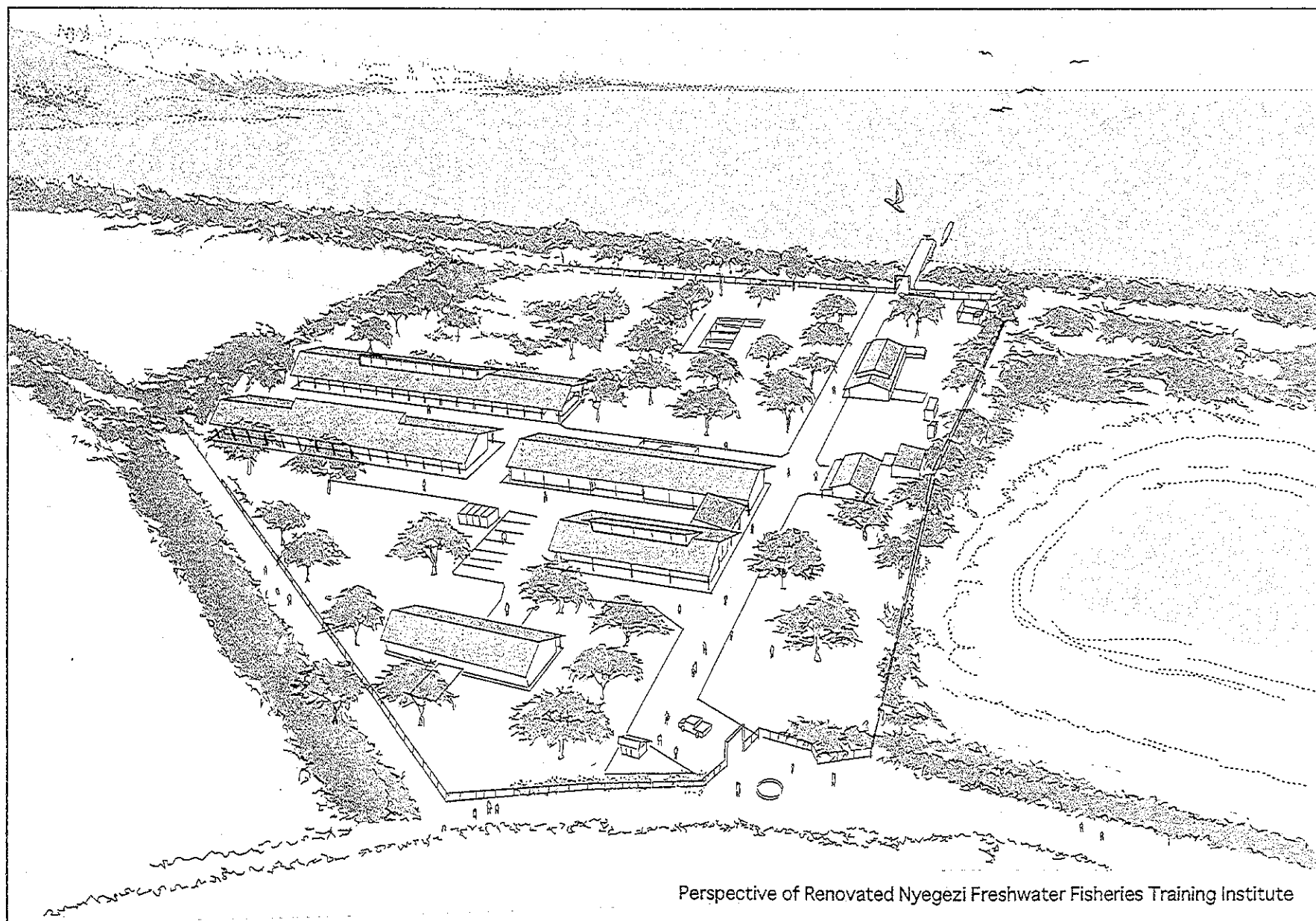
Project cost classification		Construction cost (Tsh.) (US\$)		Note
1. Construction cost	A	246,400,000	281,080	Management, office building
(1) Direct construction cost				
a. Building cost				
	B	90,000,000	102,667	Processing, factory building
	C	403,200,000	459,948	class room building
	D	460,800,000	525,655	Experiment building
	E	500,000	570	Jetty
	F	3,500,000	3,993	Guard
	(sub-total)	(1,204,400,000)	(1,373,913)	
b. Facility cost		120,500,000	137,460	
c. Others (Outside Frame/furniture)		6,500,000	7,415	Access road, Jetty
e. Dismantle construction cost		8,700,000	9,924	
(2) Processing, factory building		22,780,000	25,986	
(3) Local cost		241,218,000	275,168	
(4) Management cost				
2. Engineering works' cost		0	0	
(1) Direct construction cost		0	0	
(2) Common temporary building cost		0	0	
(3) Local cost				
3. Design/ Inspection cost		352,900,000	402,569	
4. Equipment cost		359,674,556	410,297	
Total project cost		2,316,672,556 (Tsh)	2,642,733 (US\$)	

(9) Environmental Impact

This programme which involves rehabilitation of existing Nyegezi Freshwater Fisheries Training Institute could be classified as "technical assistance" listed in Appendix 2, which may or may not

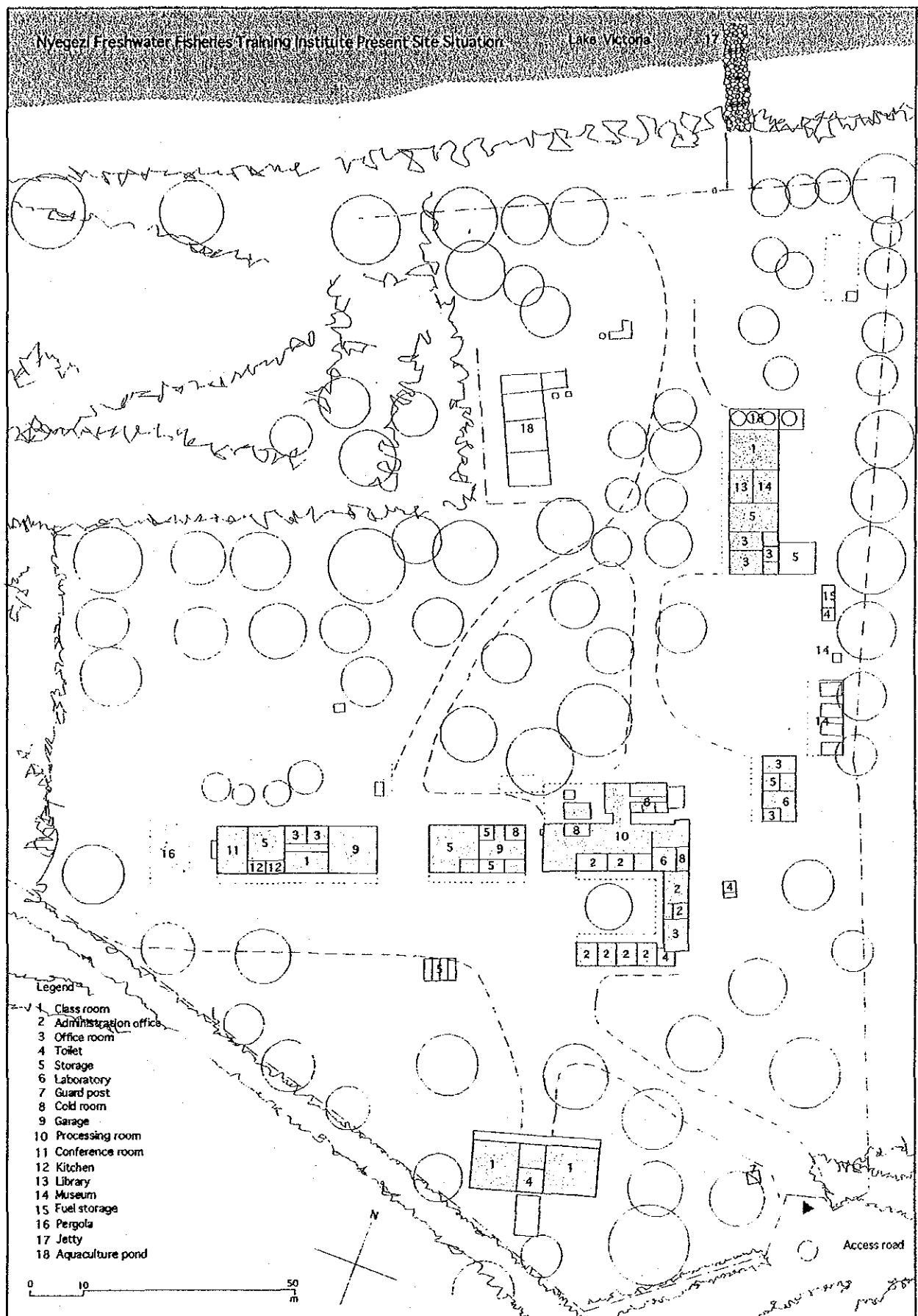
require EIA. As the rehabilitation will be at the same location as existing buildings, significant negative impacts is not expected on the natural environment.

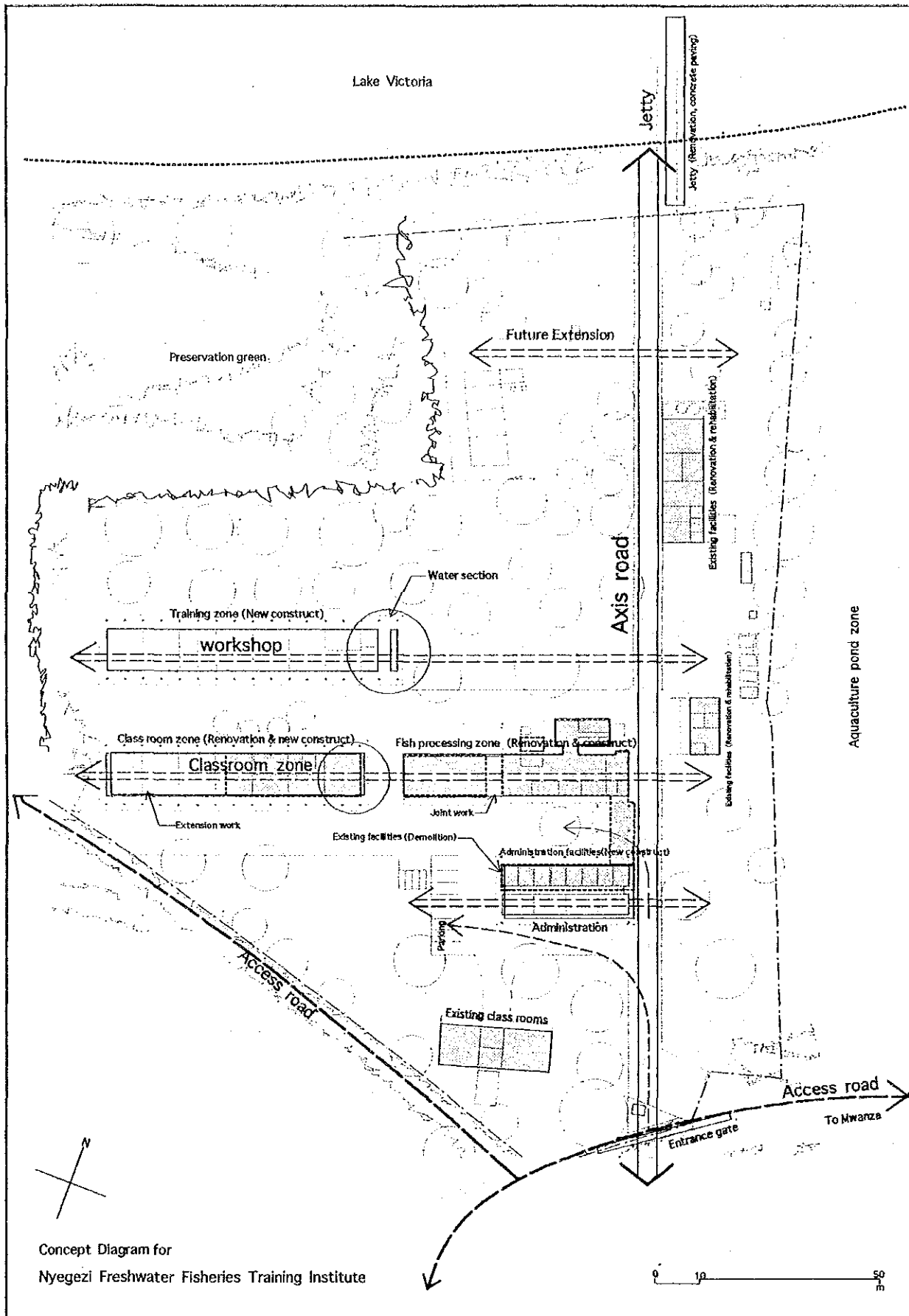
The indirect negative impact of this programme could be on the natural resources as production techniques and human resources improve to land more fish. The awareness of this potential negative impact should be countered by a greater awareness for the need of sustainable use of the limited resources to ensure long term benefits rather than short term gains. Equal emphasis should be placed on resource management and fish production improvements.

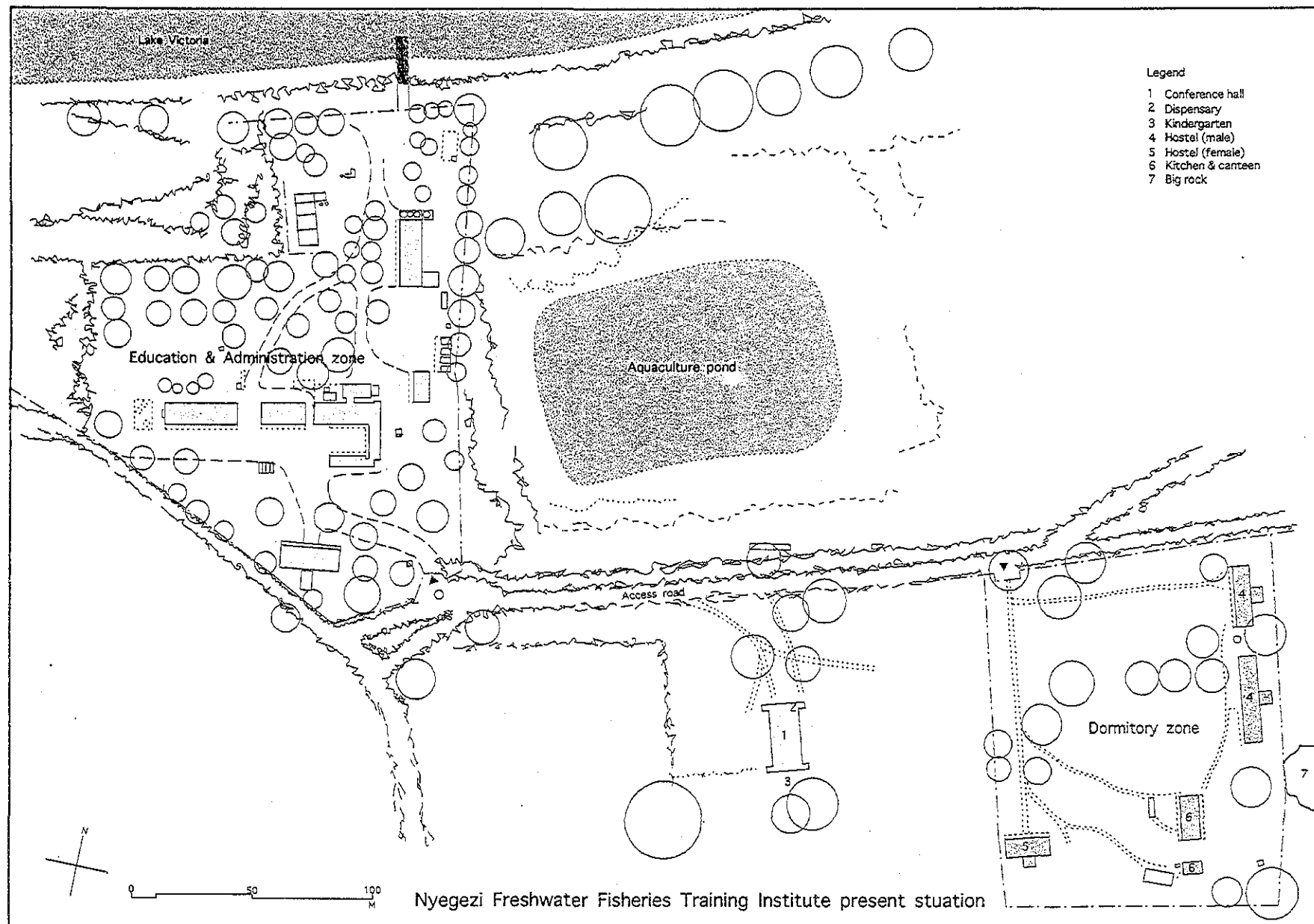


Lake Victoria









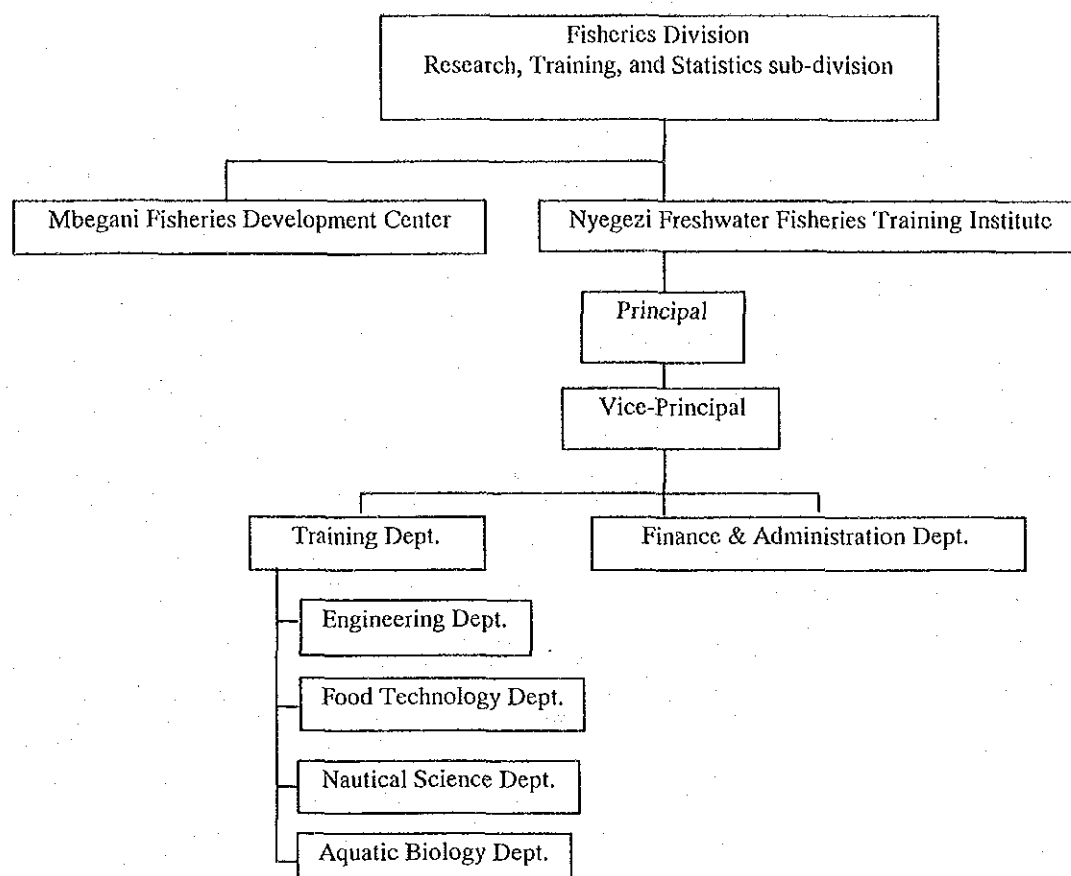
Annex 2.14-1

Equipment	Quantity	Amount price (Tsh)	Amount Price (US\$)
Aquatic Biology Dept.			
Water sampler	1	175,324	200
Fish measuring boards	5	1,402,592	1,600
Dissecting Kits	40	2,103,888	2,400
Portable Multi meter	1	1,336,846	1,525
Aquaculture test kits	2	876,620	1,000
pH paper	1	701,296	800
Colorimeter	1	210,389	240
Assortment of chemicals for oxygen carbon dioxide and alkalinity analysis		1,753,240	2,000
sub-total		8,560,194	9,765
Engineering Dept.			
Mechanical Workshop			
Lathe Machine	1	13,149,300	15,000
Milling machine	1	19,285,640	22,000
Surface plate	2	1,972,395	2,250
Mechanical Tool box	3	821,831	937.5
Tool box for outboard engine 25HP	3	821,831	937.5
Outboard engine 25HP	2	2,191,550	2,500
Inboard engine 40HP		3,287,325	3,750
Grinding machine table type	1	383,521	437.5
Grinding machine hand type	2	767,043	875
Drilling machine hand type	2	854,705	975
Drilling machine floor type	2	2,169,635	2,475
Working bending	1	328,733	375
Vernier caliper	10	197,240	225
Micrometer caliper	10	723,212	825
Vernier height gauge	5	394,479	450
Vices	10	1,643,663	1,875
Taps	10sets	1,314,930	1,500
Dies	10sets	1,753,240	2,000
Welding Workshop			
Power Hacksaw	3	3,155,832	3,600
Grinding machine table type	1	383,521	437.5
Oxy Acetyl Cylinder	1	306,817	350
Air Compressor	1	701,296	800
Pneumatical System	1	262,986	300
Welding machine	3	986,198	1,125
Shearing machine	1	1,753,240	2,000
Sheet bending machine	1	2,191,550	2,500
Rolling machine	1	1,577,916	1,800
Working bench	1	328,733	375
Electrical Workshop			
Modal for electrical installation training	3	1,402,592	1,600
Electrical tool box	3	322,333	367.7
Working benches	3	986,198	1,125
Battery charger	1	338,989	386.7
Avometer (alob)	5	1,095,775	1,250
System Analyzer	1	438,310	500
Refrigeration Workshop			
Refrigeration tool box	3	1,150,125	1,312
Charging manifolds	5	821,831	937.5
Oil pumps	3	1,478,858	1,687
Swaging tool	5	191,717	218.7
Flattering tool	5	246,506	281.2

Working benches	6	1,972,395	2,250
Electric Workshop			
Working benches	2	657,465	750
Tool box for electronics	1	350,648	400
Mega meter	1	306,817	350
Current meter digital	2	368,180	420
sub-total		75,837,097	86,511
Food Technology Dept.			
Plastic Containers with cover	3	1,314,930	1,500
Plastic Containers with cover	3	964,282	1,100
Plastic trays	40	701,296	800
Plastic trays	80	701,296	800
Aluminum containers	2	1,227,268	1,400
Aluminum containers	2	964,282	1,100
Water horse	100m	175,324	200
Weighing scale round face	2	1,051,944	1,200
Weighing scale round	1	350,648	400
Weighing scale-All plate	2	262,986	300
Weighing scale -Digital	2	262,986	300
Wash brush	10	876,620	1,000
Cutting knives	24	210,389	240
Filleting knives	12	122,727	140
Hand sharpeners	4	105,194	120
Filleting boards	12	210,389	240
Skinning/trimming boards	14	227,921	260
Aluminum Angel Frames	20m	175,324	200
Aluminum Tables	100m	876,620	1,000
Aluminum Tables	5	2,629,860	3,000
Rollers on Al frames	4	1,051,944	1,200
Aluminum Pallets	10	1,753,240	2,000
Jack lift	2	1,753,240	2,000
Plate freezer Al trays	20	1,051,944	1,200
Plastic Pallets	20	1,402,592	1,600
Aluminum trays	20	1,227,268	1,400
Aluminum trays	20	1,753,240	2,000
Tray trolley	1	525,972	600
Sealing machine	1	192,856	220
Seaming machine	1	1,753,240	2,000
Stuffing machine	1	1,314,930	1,500
Sausage clip machine	1	438,310	500
Autoclave	1	8,766,200	10,000
Numbering machine	1	175,324	200
Cartoon stripping machine	1	438,310	500
Fish cake fryer	1	7,012,960	8,000
Pouch sealing machine	1	701,296	800
Meat saw	1	1,753,240	2,000
Lockers(Aluminum plated)	24	4,383,100	5,000
Bench(wooden)	4	282,272	322
Washing sink with knee handle	4	2,366,874	2,700
Buckets Plastic(tubs)	5	1,095,775	1,250
Compound Microscope(electric)	5	4,798,618	5,474
Binocular(dissecting)	3	2,629,860	3,000
Electrical autoclave	1	582,952	665
Colony counter	1	438,310	500
Blender	3	262,986	300
Stomacher	1	2,191,550	2,500
Water distiller	1	3,506,480	4,000
Digital to pan balance	1	876,620	1,000
Water bath(rectangular)	1	3,068,170	3,500

Centrifuge	1	262,986	300
Incubator	2	2,629,860	3,000
Heating and drying oven	2	1,332,462	1,520
Filtration apparatus(vacuum)+micro	2	438,310	500
Laboratory timer	3	105,194	120
Air conditioners	3	1,753,240	2,000
Gas cylinder	2	175,324	200
Hot plate(stirrer)	2	87,662	100
Hot plate	2	175,324	200
(a)pipette canisters	10 cartons	438,310	500
(b)Pipettes	10cartons	438,310	500
petri dish holders	50	245,454	280
(a)test tube rack	10cartons	175,324	200
(b)test tubes-metal caps-screw capped	10cartons	438,310	500
Micro-pipette	5	8,766	10
Disposable pipette tips	1000	438,310	500
Forceps	10 sets	61,363	70
Tweezers	5 sets	61,363	70
Scissors			
Bulb pipettes 1.2.3.10.20.50.100ml	10	43,831	50
Total flow pipette 1,5,10ml	50	43,831	50
petri dishes Sizes: 100x15ml.	50	43,831	50
18x189ml	100	87,662	100
Durham tubes(10x75mm)	100	87,662	100
Scalpels	500	350,648	400
Measuring cylinder	5	17,532	20
Pedal bins	5	26,299	30
Waste material buckets	2	175,324	200
Swing top waste bins	5	87,662	100
Inoculating loops	5	87,662	100
Spatula	10	175,324	200
Tongs	50	17,532	20
Flasks(Erlenmeyer)	20	17,532	20
Deep freezer	50	87,662	100
Refrigerator	1	788,958	900
Thermometers	2	1,402,592	1,600
PH meter	10	87,662	100
Evaporating basins	2	175,324	200
Glass spreads BOD Bottles	2	262,986	300
Others	50	438,310	500
Mortal and pestle set			
Disposable gloves	10boxes	70,130	80
Laboratory coats	20pcs	876,620	1,000
Insect cutor	4	876,620	1,000
sub-total		88,557,029	101,021
Nautical Science Dept.			
Training boats repair of M.V. Mdiria		129,739,760	148,000
Fishing tools for training		43,831,000	50,000
FRP Boat		13,149,300	15,000
sub-total		186,720,060	213,000
Total		359,674,381	410,297

Annex 2.14-2



ANNEX 2.14-3

The name of professors at Nyegezi Freshwater Fisheries Training Institute (27 answers out of 45 members)

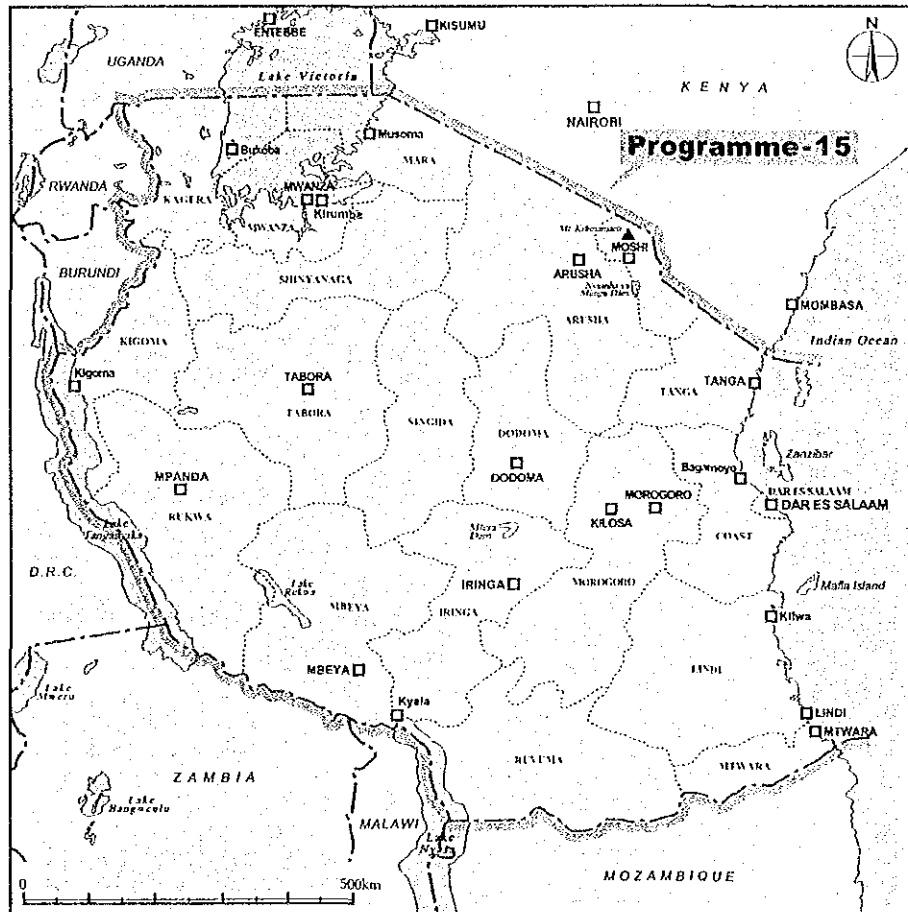
	Staff name	Title	Background	Belonging
1	J. Makene	Principal Fisheries Officer	-MSc Food Science and Microbiology	-Finance & Admin. Dept.
2	R. Mbilinyi	SFsO I	-BSc Marine Biology and Zoology -MSc Management of Inland Fisheries and Aquaculture	-Training Dept. -Aquatic Biology Dept.
3	C. Ntungi	FsO I	-MSc. In Food Science -Diploma in Fisheries	-Training Dept. -Food Technology Dept.
4	R. Mhekela	SAFsO I	-Diploma in Fisheries Sciences -Certificate in Fisheries -Certificate in Fish Marketing	-Training Dept. -Food Technology Dept.
5	T.M.B. Higirot	SAFsO I	-Diploma in Fisheries Sciences -Certificate in Environmental Education -Certificate Teaching Methodology	-Training Dept. -Aquatic Biology Dept.
6	S. Chirwa	SAFsO II	-Diploma in Fish Processing -Certificate in Fisheries	-Training Dept. -Food Technology Dept.
7	J. Mtolela	SAFsO II	-General Certificate in Fisheries	-Training Dept. -Nautical Science Dept.

	Staff name	Title	Background	Belonging
8	V.R. Mtallo	SAFsO II	-Diploma in Fisheries Sciences -Certificate in Fisheries Sciences -Certificate in Environmental Education -Certificate in teaching Methodology	-Training Dept. -Aquatic Biology Dept.
9	G. Roberts	AFsO II	-Diploma in Fisheries Sciences -Certificate in Fisheries Sciences -Certificate in Teaching Methodology	-Aquatic Biology Dept. -Training Dept.
10	W. Rugonzaiye	AFsO II	-Diploma in Fisheries Sciences -Certificate in Fisheries Sciences -Certificate in Fish Processing and Food Science	-Training Dept. -Food Technology Dept.
11	B. Shatila	AFsO II	-Diploma in Master fisherman -Certificate in Fisheries -Certificate in Teaching Methodology	-Training Dept. -Nautical Science Dept.
12	S. Mayunga	AFsO IV	-Diploma in Fish Processing -Certificate in Fish Processing	-Training Dept. -Food Technology Dept.
13	D. Nabonge	Marine Technician III	-Diploma in Marine Engineering	-Training Dept. -Engineering Dept.
14	E. Mrikaria	Accountant	-Diploma in Accounts	-Finance & Admin. Dept.
15	G.M. Milinga	Senior Skipper II	-Diploma in Master Fisherman Class 3/4 Deck -Certificate of Competency with Master Endorsement -Certificate in Deep Sea and Coastal Fishing Technology -Certificate in Fisheries -Certificate in GMDSS operation	-Training Dept. -Nautical Science Dept.
16	E. Kazimili	Skipper III	-Gear technology Certificate	-Training Dept. -Nautical Science Dept. -Food Technology Dept.
17	H. S. Sekikubo	Senior Refrigeration Technician I	-Diploma in Refrigeration Engineering	-Training Dept. -Engineering Dept.
18	C. Swai	Refrigeration Technician II	-Diploma in Refrigeration Engineering	-Food Technology Dept. -Training Dept.
19	Y. Malugu	Auxiliary Technician II	-STD V II Certificate in carpentry in plumbing	-Training Dept. -Engineering Dept.
20	I. Jacob	Secretary	-Typist II	-Finance & Admin. Dept.
21	L. Anselmi	Office Attendant II		-Finance & Admin. Dept.
22	P. Matondo	Supplies Officer	-Diploma in Store Management	-Finance & Admin. Dept.
23	R. Sindo	Typist I		-Finance & Admin. Dept.
24	S. Issa	Motor mechanics IV	-Certificate in Motor Mechanics Trade Test II	-Engineering Dept. -Training Dept.
25	W. Rukokerwa	In charge of Dispensary	-Diploma in Clinical Medicine	-Finance & Admin. Dept. -Food Technology Dept.
26	D. Valence	Registry Assistant	-Certificate in Office Management	-Finance & Admin. Dept.
27	A. Mtesigwa	Driver	-Advanced Driver's Certificate Grade II	-Engineering Dept. -Training Dept.

Source: Nyegezi Freshwater Fisheries Training Institute Proposed Rehabilitation Project, MNRT, Nov. 2001

Programme-15

2.15 Fisheries Master Plan Implementation Training Programme



Planning area : National level

2.15 Fisheries Master Plan Implementation Training Programme

(1) Programme Description

A Summary

To efficiently implement the Master Plan, it is important that the Fisheries Division, the district Fisheries Division and training institutions adequately fulfil their responsibilities in implementing the priority regional programmes. The Master Plan is a ten-year plan and must be flexibly designed to cope with conditions related to financial sources. Hence a training programme in project management will be implemented for the instructors at the Nyegezi Freshwater Fisheries Training Institute, who teach the fisheries, processing, and cooperative courses, and the District Executive Directors, and the executive fisheries officers of the Fisheries Division and district Fisheries Division. The training programme will consist of a workshop and classes on project management technology and advanced technology that are aimed at promoting an understanding of the Master Plan and monitoring activities.

B Project Region: Nationwide

C Duration

The Master Plan will be implemented for ten years (including all phases). In particular, a three-year training programme abroad will be implemented for the personnel who will be responsible for managing the Master Plan.

(2) Objectives and Justification

A Objective

The objectives are to strengthen the project's management capabilities and related technical knowledge of the personnel involved in the priority programmes of the Master Plan and to achieve sound management and uninterrupted implementation of the project.

B Justification

[Appropriateness]

It is vital that the ten-year Master Plan an covering the extensive territory of Tanzania (945,087km²) and its 15 priority programmes are implemented with a thorough understanding of the policies, a clear role allocation of the appropriate institutions, and according to overall management by the relevant officers of the Tanzanian government.

In the Master Plan study, a discussion will be held on the design and purpose of the study, future projects, and final report (draft) with each group member related to the regional survey. However, to provide the latest information to relevant parties throughout the country, a workshop should be held to promote an understanding of the Master Plan and the projects' operations and monitoring activities after they are completed.

The educational standards of the district level fisheries officers remains low due to a shortage of human resources and budget. The domestic educational training programme on management and advanced technology will re-educate fisheries officers, which in turn, will enable the management and supervision of the field programmes to be implemented efficiently. The overseas training programme for the executive fisheries officers will aim to coordinate activities and to learn the fisheries technology of the donor country, while advancing mutual understanding.

[Benefits]

The following benefits are anticipated from this programme.

- Learn the methods, approach, and decision-making process for problems that may arise during the project's implementation.
- Strengthen knowledge on specialized technology.
- Acquire specialized knowledge on modern technology, in conjunction with a flexible application of the technology.
- Strengthen team work and understanding about the linkage between the priority programmes formulated under the Master Plan.

(3) Components and Activities

A Training Programme

In principle, the training activities conducted in Tanzania will be based on the programmes. The content of the training activities will vary according to the programme.

		Main subject	Beneficiary organization	People	Period (day)
	The Committee of Implementing Programme	Programme Coordination	Nyegezi	1	30days
1	Marine Fisheries Sub-sector Capacity building programme	Society Management	Nyegezi	1	30days
2	DSM Fisheries Infrastructure Improvement Programme	Fish Processing/circulation	Nyegezi	1	30days
3	Lake Victoria Fisheries Sub-sector Capacity Building Programme	Human resource training	Nyegezi	1	30days
4	Lake Victoria Fish Marketing Improvement Programme	Fish Processing/circulation	Nyegezi	1	30days
5	Lake Tanganyika Dagaa Fisheries Development programme	Fish Processing/circulation	Nyegezi	1	30days
6	Lake Nyasa Planked Canoe Extension Programme	Fishing Village Development/Diffusion	Nyegezi	1	30days
7	Aquaculture Extension Programme	Aquaculture	Nyegezi	1	30days
8	Fisheries Financial Support Programme	Fisheries Finance	Nyegezi	1	30days
9	Fisheries Co-management Programme	Resource Management/Management Society	Nyegezi	1	30days
10	National Fish Export Promotion Programme	Fish Processing/circulation	Nyegezi	1	30days
11	Lake Victoria Major Landing Beach Improvement Programme	Society Management	Nyegezi	1	30days
12	Fisheries Communities Development programme	Fishing Village Development/Diffusion	Nyegezi	1	30days
13	Fisheries Information system Improvement Programme	Fisheries Information	Nyegezi	1	30days
14	Fisheries Training Institute Improvement Programme	Human resource training	Nyegezi	1	30days

		Main subject	Beneficiary organization	People	Period (day)
15	Fisheries Master plan Implementation Training Programme	Human resource training	Nyegezi	1	30days
	Total			16	

B Training Plan

The personnel in charge of programme management and operations and one technician from each of the 15 priority regional programmes formulated under the Mater Plan will be selected to participate in the overseas training programme. Regional fisheries officers, artisanal fishers, and cooperative staff members who are initially trained under the domestic programmes will conduct workshops to disseminate and communicate the training content; and direct measures to foster human resources will be taken. Although the training content will cover problem-solving and project management methods, the training participants will be divided into three groups: Group (A) whose major focus is on the management of cooperatives and community development organizations, Group (B) whose major focus is fish processing, marketing and distribution, and Group (C) whose focus is human resource development and others. Coordination between programmes and developing understanding based on an exchange of opinions between the head programme personnel will be enhanced. The training period will be about 30 days since its content will be centered on project management and supervision and specialized training will not be conducted.

Content of the Training Activity for Priority Programme Personnel

	Main subject	Common Training	Beneficiary organization	People	Period (day)
[Group A]					
The Committee of Implementing Programme	Programme Coordination	Training mainly of society and rural development		1	
Lake Victoria Major Landing Beach Improvement Programme	Society Management			1	30
Marine Fisheries Sub-sector Capacity building Programme	Society Management			1	30
Fisheries Co-management Programme	Resource Management/Management Society			1	30
Lake Nyasa Planked Canoe Extension Programme	Fishing Village Development/Diffusion			1	30
Fisheries Communities Development Programme	Fishing Village Development/Diffusion			1	30
Sub total				6	30
[Group B]					
DSM Fisheries Infrastructure Improvement Programme	Fish Processing/circulation	Training mainly of Fisheries processing and Marketing		1	30
Lake Tanganyika Dagaa Fisheries Development programme	Fish Processing/circulation			1	30
Lake Victoria Fish Marketing Improvement Programme	Fish Processing/circulation			1	30
National Fish Export Promotion Programme	Fish Processing/circulation			1	30

	Main subject	Common Training	Beneficiary organization	People	Period (day)
Sub total				4	30
[Group C]					
Fisheries Co-management Programme	Human resource training	Training mainly of Human resource /Information management/Diffusion skill/ Financial assistance		1	30
Fisheries Training Institute Improvement Programme	Human resource training			1	30
Fisheries Master plan Implementation Training Programme	Human resource training			1	30
Fisheries Information system Improvement Programme	Fisheries Information			1	30
Aquaculture Extension Programme	Aquaculture			1	30
Fisheries Financial Support Programme	Fisheries Finance			1	30
Sub total				6	
Total				16	

(4) Operation and Management Plan

A meeting on human resources training will be held by the programme implementing committee. The relevant institutions will participate in this meeting on training content and recommendations of participants. A request document based on the committee discussions will be drafted. Following the completion of the training activities, workshops held by the participants, which will also include reports on the training activities, will be held at the national and district levels as a form of technology transfer. Each programme will be given feedback on the content of the reports given at the workshops.

(5) Work Plan

Activity	Respn Orgn	Process												Output
		First year				Second year				Third year				
Setting Human resource training meeting in The Committee of Implementing Programme	FD	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	
Implementing outside training														
Group A	FD	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	
Group B	FD	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	
Group C	FD	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	
Workshop to report about training programme	FD	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	

(6) Cost Estimate

The training costs will be within the estimated scope of the training plan of the Fisheries Division.

		Unit Price (Tsh.)	Total (Tsh.)	Total (US\$)	
Training at outside cost	16 people	6,800,000	108,800,000	124,113	According to Standard of Fisheries Division
Training cost	16 people	36,871	17,698,080	20,189	Sec. Summary of cost at each programme
Total				144,302	

(7) Monitoring

An evaluation of the overseas training programme will be based on the reports submitted by the trainees at the workshops following the completion of the training course. The findings will be presented at the meeting on human resources training by the programme implementing committee and relevant external parties. Following the workshop, monitoring activities to see if the training results are reflected in the programmes will be conducted based field observations and programme reports. In the case of domestic training activities, the programme head will be responsible for monitoring the training participants.

(8) Environmental Impact

This programme's "soft" components does have significant direct negatively impact on the natural environment. As such, EIA would not be necessary. However, long term success of the Master Plan will impact positively on the whole fisheries sector to ensure long term sustainable utilization of the natural resources. The tragedy of commons should be borne in mind when implementing the Master Plan programmes to avoid possible tragic consequences of uncontrolled, destructive and unsustainable fishing.

IV COST ESTIMATION FOR PROGRAMMES

CHAPTER 4 COST ESTIMATION FOR PROGRAMMES

1. CONDITION FOR COST CALCULATION

(1) Basic Conditions for Planning and Selection of Facilities and Equipments in Relation to Cost Calculation

- (a) All of the project sites are located in the urban or suburban areas. Therefore, postponements or delays of the project works due to the rainy season or a remote location are not anticipated. Hence special consideration with regard to a project's implementation is not required.
- (b) The local administrative body will be responsible for the design and execution of the plan as in the case of the fish landing facilities at Lake Victoria. The local design approach will be adopted when it has been ascertained that there are no problems with the building methods and costs given in the survey.
- (c) Data on the natural environmental and weather conditions for the coastal regions from Dar es Salaam and data for the lake water region from Mwanza will be used to decide the specifications for the structure and materials.
- (d) The local administrative body has accumulated experience and knowledge on the steel floating jetty at Lake Victoria and other facilities; therefore, equipment that has been assessed as reliable will be procured locally, and past cost calculations will be used as a source of reference.
- (e) If the performance, and quality of locally procured materials conform to the design standard and quality for use in the Japanese grant-aid project, and a supply is readily available, they will be purchased locally.

(2) Basic Criteria of the Calculation

The unit cost (the cost per unit space) of this project will be calculated using the price list published by the Ministry of Works, the cost calculation documents of similar past projects implemented by the ministry, contract cost, the consignment cost of private public works companies operating in Dar es Salaam and Mwanza cities, and data obtained from interview surveys. The majority of projects which involve facility planning aim at construction of either landing site facilities, small-scale processing plants or similar facilities. Therefore the unit price for each construction is used as a standard for calculation for several programmes.

- (a) Local construction methods and estimated cost standards will be used if the local construction methods, quality, and durability is satisfactory. In this case, the design and construction control will be carried out according to the Tanzanian government; and those costs will be excluded from the construction costs of this project. For other types of construction that will be implemented in the project, examples of construction works implemented in Tanzania by donors will be utilized.
- (b) The standard for the unit cost will be set according to the year 2001 and cost of living increases will not be considered.
- (c) The unit cost is the cost for a set of works including temporary/ direct construction works, procurement and installation and their labour costs.
- (d) Although the management of the project site will be the responsibility of the project implementing body, the legalities and boundaries of some of the sites are provisional. Therefore, the estimated cost of land usage and soil preparation activities will be excluded from project costs.

- (e) For sites requiring the installation of power lines, the cost has been calculated based on an interview survey by TANESCO, the Tanzania Electric Supply Company.
- (f) The construction or renovation cost of the access road to the project site was calculated according to past local road construction work costs.
- (g) At project sites where the construction work can be carried out by community residents as inexperienced labourers, the construction labour costs will be decreased by 30 percent.
- (h) All construction works that will be implemented under this Master Plan will be completed within a one-year construction period.
- (i) The cost of equipment and materials purchased from abroad will be Dar es Salaam CIF prices. All related tariffs and bank commissions pertaining to the construction work will be exempted.
- (j) The consultant fees will be 13 percent of the cost for construction, equipment and materials.

2. ROUGH COST ESTIMATION FOR PROGRAMMES

Based on the conditions explained above, a summary of the costs for each priority programme has been given in Chapter 3. The total Master Plan cost based on FY2001 costs is estimated at about US\$ 21,970,000, of which 68 percent or US\$ 15,040,000 will be invested in facilities and equipment and the remaining US\$ 6,930,000 will be used to cover the cost of experts, consultants, hired labour, training and operation.

Table 4-1 Estimated Cost for Priority Programmes

Priority Programmes	Contents	Cost (Tsh.)	Cost (US\$)
Marine Fisheries Sub-sector Capacity Building Programme	Phase I		
	[Construction & Equipment]	483,153,420	551,545
	[Technical, Personnel & Management]	876,263,676	1,000,301
	Sub-total	1,359,417,096	1,551,846
	Phase II		
	[Construction & Equipment]	344,345,964	393,089
	[Technical, Personnel & Management]	898,336,248	1,025,498
	Sub-total	1,242,682,212	1,418,587
	Total	2,602,099,308	2,970,433
Dar es Salaam Fisheries Infrastructure Improvement Programme	[Construction & Equipment]		
	• Expansion of DSM fish market component	1,099,185,528	1,254,778
	• Kivukoni Front fishing boats mooring area improvement component	1,923,608,400	2,195,900
	Sub-total	3,022,793,928	3,450,678
	[Technical, Personnel & Management]	161,405,628	184,253
	Total	3,184,199,556	3,634,931
Lake Victoria Fisheries Sub-sector Capacity Building Programme	[Construction & Equipment]	69,875,016	79,766
	[Technical, Personnel & Management]	151,540,116	172,991
	Total	221,415,132	252,757
Lake Victoria Fish Marketing Improvement Programme	[Construction & Equipment]		
	• Construction of Kirumba Market	4,820,484,336	5,502,836
	• Improvement of Nile perch factory at Mkolani	58,783,104	67,104
	• Improvement of Nile perch factory at Kanyama	55,537,524	63,399
	• Improvement of Nile perch factory at Bweri	59,014,368	67,368

	Sub-total	4,993,819,332	5,700,707
	[Technical, Personnel & Management]	111,698,760	127,510
	Total	5,105,518,092	5,828,217
Lake Tanganyika Dagua Fisheries Development Programme	[Construction & Equipment]	83,061,444	94,819
	[Technical, Personnel & Management]	33,375,600	38,100
	Total	116,437,044	132,919
Lake Nyasa Planked Canoe Extension Programme	[Construction & Equipment]	61,770,264	70,514
	[Technical, Personnel & Management]	61,407,600	70,100
	Total	123,177,864	140,614
Aquaculture Extension Programme	[Construction & Equipment]	53,436,000	61,000
	[Technical, Personnel & Management]	494,589,600	564,600
	Total	548,025,600	625,600
Fisheries Financial Support Programme	[Construction & Equipment]	21,900,000	25,000
	[Technical, Personnel & Management]	1,051,200,000	1,200,000
	Total	1,073,100,000	1,225,000
Fisheries Co-management Programme	[Construction & Equipment]	49,056,000	56,000
	[Technical, Personnel & Management]	681,002,400	777,400
	Total	730,058,400	833,400
National Fish Export Promotion Programme	[Construction & Equipment]	385,440,000	440,000
	[Technical, Personnel & Management]	131,400,000	150,000
	Total	516,840,000	590,000
Lake Victoria Major Landing Beach Improvement Programme	[Construction & Equipment]		
	• Igombe Landing Site	441,170,244	503,619
	• Mwigobero Landing Site	350,178,372	399,747
	• Nyamkazi Landing Site	412,037,988	470,363
	Sub-total	1,203,386,604	1,373,729
	[Technical, Personnel & Management]	416,800,800	475,800
Fisheries Communities Development Programme	Total	1,620,187,404	1,849,529
	[Construction & Equipment]	27,933,888	31,888
	[Technical, Personnel & Management]	481,086,060	549,185
Fisheries Information System Improvement Programme	Total	509,019,948	581,073
	[Construction & Equipment]	32,005,536	36,536
	[Technical, Personnel & Management]	416,470,548	475,423
Fisheries Training Institute Improvement Programme	[Training]	1,343,784	1,534
	Total	449,819,868	513,493
Fisheries Master Plan Implementation Training Programme	[Construction & Equipment]	2,315,034,108	2,642,733
	Total	2,315,034,108	2,642,733
Fisheries Master Plan Implementation Training Programme	[Technical, Personnel & Management]	126,408,552	144,302
	Total	126,408,552	144,302
Grand Total	[Construction & Equipment]	13,147,011,504	15,008,004
	[Technical, Personnel & Management]	6,094,329,372	6,956,997
	Total	19,241,340,876	21,965,001

V IMPLEMENTATION PLAN

CHAPTER 5 IMPLEMENTATION PLAN

1 IMPLEMENTATION PLANNING SYSTEM

The implementing body of the Master Plan is the Ministry of Natural Resources and Tourism, and the Fisheries Division will be the focal centre that will be responsible for the implementation and the budget of the projects. To efficiently implement the Master Plan, a Programme Coordination Committee will be created as an executive body and it will be responsible for supervising the implementation of the projects. A Programme Implementation and Management Committee that will be responsible for establishing the priority standing of all the programmes and specific management policies, will be created. Below this committee, zonal committees at major water bodies will be set up that will be responsible for coordinating the priority programme with other regional development plans at the regional level.

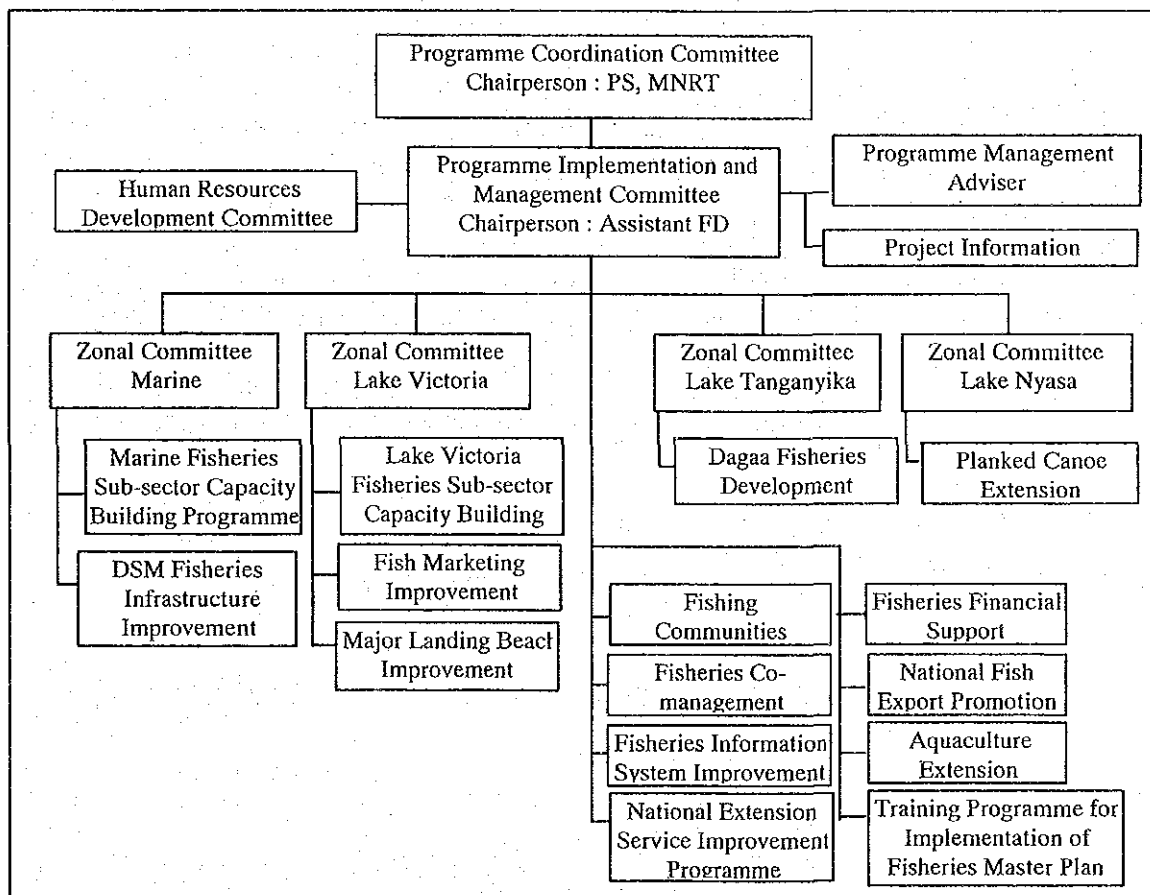


Fig. 5-1 Organizational Chart of the Priority Programme Implementing Bodies

(1) Programme Coordination Committee

The Permanent Secretary of the Ministry of Natural Resources and Tourism will serve as the chairperson of the Programme Coordination Committee which will comprise heads of project sections at several ministries and agencies. The participating ministries and agencies are the Ministry of Natural Resources and Tourism, the Fisheries Division (headquarters), Ministry of Local Government

(coordinate with local governments), the Vice-President Office (environmental considerations), and members that are appointed by the chairperson as needed. The committee will deliberate on the uninterrupted implementation of the Master Plan and priority programmes and to coordinate the programmes with other sectors as required.

(2) Programme Implementation and Management Committee

The Programme Implementation and Management Committee will draft the basic implementation policies of the priority programmes and will supervise, monitor, and technically evaluate the programme activities. They will also be responsible for changing the priority standing of the programmes, their implementation, and operations as required. They are also required to survey any items related to the programmes consigned to them by the Programme Coordination Committee, and they must submit a report on their findings to that committee. The vice-director of the planning section of the Fisheries Division will serve as the chair of this committee, and will comprise four sections of the Fishery Division (planning, quality control, fishery surveillance, and training) and representatives from each of the four regional committees. The committee's main functions are as follows.

- (a) Select personnel needed to implement the Master Plan and carry out budgetary measures.
- (b) Coordinate the implementation schedule of the priority programmes, secure capital, and efficiently distribute human resources.
- (c) Designate and dispatch technical experts to assist the activities of the priority programmes as needed.
- (d) Carry out surveillance and evaluation activities with the cooperation of zonal committees to implement the priority programmes, and revise and make changes as needed to resolve problems that arise.

(3) Zonal Committees

The zonal committees will comprise the heads of each priority programme (usually the district fisheries officer) and private organizations (fisher groups, NGOs). They are responsible for monitoring the implementation of the programmes at the regional level and reporting to the Programme Implementation and Management Committee. In addition, the zonal committees will coordinate the development policies of each region and development projects with the programmes of this Master Plan.

(4) Programme Implementing Office

A programme office will be set up for each programme and each programme coordinator will oversee programme management and operations (see Chapter 3 of the Main Report on each priority programme).

(5) Others

The management and monitoring capabilities of each committee member implementing the priority programmes must be strengthened. In addition, since the majority of the priority programmes will be implemented utilizing international donor financial assistance, a foreign technical expert will be assigned as a technical advisor to the programme implementing committee. Due to the vast land area of Tanzania, it is difficult for the programmes' heads to meet frequently. Therefore, a project information coordination office will be created in the Fisheries Division (see priority programme 13) that will be responsible for providing information on project monitoring to major fisheries institutions and between priority programmes.

2 PLAN FOR OPERATION AND MAINTENANCE

The Master Plan is comprised of 15 priority programmes, and each programme will have their own facilities and equipment. The maintenance and operating costs of these facilities and equipment will be covered under the operating costs of the project during the period of the programme implementation. However for those programmes such that market profitability is realized, they are to be transferred to the district government during the project term, and the operating costs will be borne by the beneficiaries. The district will be responsible for the maintenance of the facilities and equipment. The maintenance and control of the facilities will be carried out as shown in the table below.

Table 5-1 Maintenance and Control Policy for Facilities and Equipment According to Priority Programme

	Priority Programme	Facilities, Equipment	Maintenance and Control Policy
1	Marine Fisheries Sub-sector Capacity Building Programme	Processing work area, fishing boat, training fishing boat, transport fishing boat	Consigned to a cooperative. Maintenance costs will be paid by the cooperative from revenue generated from the use of new facilities/equipment
2	Dar es Salaam Fisheries Infrastructure Improvement Programme	Market facilities, fishing boat mooring site	Will be moved to Ilala Municipality, Dar es Salaam. Fees collected from users in Ilala Municipality will be used to pay maintenance costs.
3	Lake Victoria Fisheries Sub-sector Capacity Building Programme	Fishing gear and equipment	After the programme term has ended, the Nyegezi Freshwater Fisheries Training Institute will be responsible for the maintenance of the equipment.
4	Lake Victoria Fisheries Marketing Improvement Programme	Market, processing work area	After construction is completed, facilities will be transferred to Mwanza City and Musoma district. Maintenance will be contracted with the local government and implemented by the cooperative.
5	Lake Tanganyika Dagaa Fisheries Development Programme	Fishing gear/equipment, small processing plant	After the programme has been completed, TAFIRI will be responsible for the maintenance of the equipment. The maintenance cost of the processing plant will be paid for by the cooperative that will use the facility.
6	Lake Nyasa Planked Canoe Extension Programme	Technical extension centre	After the programme is completed, it will be transferred to the Fisheries Division.
7	Aquaculture Extension Programme	N/A	-
8	Fisheries Financial Support Programme	N/A	-
9	Fisheries Co-management Programme	Equipment	After the programme is completed, it will be transferred to the Fisheries Division.
10	National Fish Export Promotion Programme	Quality control laboratory	Fisheries Division will be responsible for the maintenance of the facility following its construction.
11	Lake Victoria Major Landing Beach Improvement Programme	Fish landing facilities	As in Programme 2.4, the maintenance of the facilities will be managed by the local government.
12	Fisheries Communities Development Programme	Equipment	After the programme is completed, it will be transferred to the Fisheries Division.
13	Fisheries Information System Improvement Programme	Equipment	Same as above
14	Fisheries Training Institute Improvement Programme	School facilities and equipment	After the classroom facilities have been built, the Nyegezi Freshwater Fisheries Training Institute will be responsible for their maintenance.
15	Fisheries Master Plan Implementation Training Programme	N/A	-

3. IMPLEMENTATION SCHEDULE

3.1 Priority Ranking for Programme Implementation

(1) Criteria for Deciding Priority Standing

Due to the diverse development needs of the vast land area of Tanzania, the priority programmes will serve as trial development models. Therefore, implementing the programmes in phases will enable the programme to be reviewed to obtain feedback on each programme's impact and the lessons that were learned. Practically implementing the programme according to the regional characteristics will be efficiently economical both in terms of time and funds. The following four criteria were used to determine the priority standing of the 15 programmes that will be implemented under the Master Plan.

(a) Efficiency

The programme that was the most efficient in terms of capital and human resources was selected. The programme with emphasis on strengthening capabilities and conducting training activities were rated highly. Priority was placed on improving training facilities. Regions that were easily accessible to assistance from TAFIRI and training schools were given priority, since there was a great disparity in the technical capabilities between the regional and central governments.

(b) Programme Impact

The programme must contribute directly to the five basic concepts for fisheries development of this Master Plan and must strongly conform with national development policies in the areas of poverty reduction, environmental conservation and others. The artisanal fishers, processors, distributors, and other beneficiaries must clearly understand the project's impact.

(c) Management and Operations Capabilities

The human resources and budget of the regional administrative body and the programme implementing bodies must be adequately capable to manage and maintain the programme. An adequate period of time will be allocated for personnel placement and for the required training activities.

(d) Impartial Fishery Development Input

The programme must contribute to the impartial development of the four major water bodies. Priority will be given to programmes which will assist fishers at Lake Nyasa and Lake Tanganyika where development input has been lagging. To rectify the fishing disparities in the region, priority will also be given to programmes that will assist the weakest social group in the fisher community, the women, processors and distributors.

(2) Priority Ranking

Based on the selection criteria given above, the implementation period for the programmes will be as follows. The results of the review have been given in Table 5-2 on the next page.

[Short-term Programmes: 2002 to 2004]

- Marine Fisheries Sub-sector Capacity Building Programme
- Lake Victoria Fisheries Marketing Improvement Programme
- Lake Tanganyika Dagaa Fisheries Development Programme
- Fisheries Community Development Programme
- Fisheries Co-management Programme
- Fisheries Information System Improvement Programme
- Fisheries Training Institute Improvement Programme

Fisheries Master Plan Implementation Training Programme
[Medium to Long-term Programmes: 2005 to 2010]

Dar es Salaam Fisheries Infrastructure Improvement Programme
Lake Victoria Major Landing Beach Improvement Programme
Lake Victoria Fisheries Sub-sector Capacity Building Programme
Lake Nyasa Planked Canoe Extension Programme
Fisheries Financial Support Programme
Fisheries Financial Assistance Programme
Aquaculture Extension Programme

Table 5-2 Results of the Criteria Review to Decide the Implementation Period of the Priority Programmes

		Overall Review	Implementation Period
1	Marine Fisheries Sub-sector Capacity Building Programme	The existing cooperatives are highly motivated and a high implementation ratio is anticipated. Their joint retail activities face very minimal risk since the group is located in the consumption area, Dar es Salaam. Direct supervision from the Fisheries Division headquarters is possible and there is access to technicians in Dar es Salaam.	Short-term programme
2	Dar es Salaam Fisheries Infrastructure Improvement Programme	The programme includes the expansion of the Dar es Salaam fish market. The market has finished its construction. The appropriateness of the programme's effectiveness and management capabilities will be confirmed after an actual market operation is implemented.	Medium to long-term programme
3	Lake Victoria Fisheries Sub-sector Capacity Building Programme	Technical development of the Nyegezi Freshwater Fisheries Institute should wait until the renovations implemented under the programme ⁴ have been completed.	Medium to long-term programme
4	Lake Victoria Fisheries Marketing Improvement Programme	Kirumba Market and the other small-scale processing factories and are in operation, and improved facilities will contribute highly to the working environment. The market is a shipping point for Dagaa with an increased production of about 9,000 tons. An existing cooperative is managing a segment of the market and the facilities are relatively maintenance free. Therefore, a short-term programme was considered feasible.	Short-term programme
5	Lake Tanganyika Dagaa Fisheries Development Programme	The content of the technical improvements in the programme has been limited to simple and specific fishing (using fishing lamps) and drying methods of Dagaa, and effective input is possible. Due to the existence of an NGO to assist with technical extension activities, creating a system of cooperation to strengthen management capabilities can be easily achieved. An approach that will reduce post harvest loss of Dagaa Kigoma as important food fish will be studied. Since the programme will not contribute to increased fishing pressure, considerably large benefits can be derived from the programme.	Short-term programme
6	Lake Nyasa Planked Canoe Extension Programme	In terms of the fair distribution of fisheries development input, this programme targeting Lake Nyasa should be given priority. However, in view of fisher input capabilities and management skills, the impact of this programme will be lower than that of other programmes.	Medium to long-term programme
7	Aquaculture Extension Programme	In contrast to natural fisheries production, the production levels of aquaculture is nominal, and achieving increased production in a short period of time through aquaculture extension activities is difficult. The Tanzanian government is presently renovating the at	Medium to long-term programme

		Overall Review	Implementation Period
		Morogoro National Aquaculture Development Centre and the priority of this programme is to strengthen and improve the facilities and functions of this centre.	
8	Fisheries Financial Support Programme	Based on the experience of past projects, micro projects must be closely related to the local community, and the existence of a management institution with adequate financial knowledge is essential. A fixed period of time is needed to foster such an institution or to the build trust between fishing villages and an existing NGO. Thus, an implementing body that has been monitored should be selected in a region where measures to strengthen the existing NGO have been implemented and where there are fishing communities with progressive knowledge and education, as in the case of Programme 12, Fisheries Communities Development Programme.	Medium to long-term programme
9	Fisheries Co-management Programme	A change in fishers' awareness towards the environment is necessary for fishery resources management. To accomplish this, multi-sectoral supports for organising fishers for fisheries community development are thought to be effective. It is ideal to implement the programme in collaboration with 'Marine Fisheries Sub-sector Capacity Building Programme' and 'Fisheries Community Development Programme' which are both categorised as short-term programmes as the multiplier effect is expected.	Short-term programme
10	National Fish Export Promotion Programme	The programme aims to provide market information to promote investments by processing companies and to effectively implement the programme by targeting companies with capital. As of 2001, Nile perch export has steadily grown due to the increased EU demand for fillet. Thus although factories are interested in developing new products, investment has been passive. Developing higher value added processed Nile perch products is a mutually shared issue that must be addressed by the entire processing industry. Thus, the priority is to achieve a consensus within the industry in a short period of time. However, since the equipment for the quality control laboratory will be placed under the direct administration of the Fisheries Division, very minimal management problems are foreseen. Therefore, the immediate implementation of the programme is feasible.	Medium to long-term programme
11	Lake Tanganyika Major Landing Beach Improvement Programme	The aim of the programme is not only to improve the sanitary conditions of the fish-handling task, but to organize the fishers by having them manage the facilities. Therefore, the initial priority is to strengthen fisher capabilities through their use of the facilities. Careful training and monitoring activities are especially required since a new cooperative will be created to manage and maintain the ice-making equipment as well as the other facilities.	Medium to long-term programme
12	Fisheries Community Development Programme	Fisheries Community Development Programme is highly effective as a development model for fishing villages, and its extension potential is high. It is also directly relevant to the national plan and the basic structure of this Master Plan since it deals directly with the poverty and living environment of the fishers. Since the programme site is located in the southern region of Coast region, access to Dar es Salaam is good and direct guidance from the Fisheries Division is possible. Therefore, the programme is relatively easy to manage.	Short-term programme
13	Fisheries Information System Improvement Programme	Fisheries Division statistics have been unavailable since 1997. This lack of fisheries data must be immediately rectified in terms of fisheries administration.	Short-term programme
14	Fisheries Training Institute Improvement Programme	The high motivation of district fisheries officers and educational staff members of the training institutions, which will greatly affect the efficiency of all the programmes, is needed to successful	Short-term programme

		Overall Review	Implementation Period
		implement this Master Plan. The management risk of the Nyegezi Freshwater Fisheries Training Institute, the implementing body of this programme, is minimal since there is an adequate number of staff and technical personnel.	
15	Fisheries Master Plan Implementation Training Programme	Regional linkage is an important element that is needed to coordinate the 15 priority programmes that are part of the basic design of the Master Plan. In addition, to ensure that the programmes are implemented efficiently in a short period of time, it is important that the responsible personnel in each region and for each programme fully understand the content of the MP and have the technical skills and leadership capabilities to implement the programmes.	Short-term programme

3.2 Implementation Schedule

[Short-term Programmes: 2002 to 2004]

The implementation period of the Master Plan will be for ten years starting in 2002/2003. In the initial year 2002, the Programme Coordination Committee and Programme Implementation and Management Committee will be created and preparations to implement the programmes will begin. The short-term programmes will begin in 2002 and end in 2004. A detailed implementation plan and required budgetary measures will be made for each programme. Technical assistance will be provided at this time for programme implementation, schedule coordination, and negotiations with donors and a foreign technical advisor will be dispatched. At the field level, the district fisheries officers will organize the basic data on fishers, fishing boat registrations, and organizations that will be needed to implement the programmes. A workshop for fishers and private companies will be implemented in each region to promote understanding about the Master Plan.

[Medium to Long-term Programmes: 2005 to 2010]

An interim evaluation will be made on the impact and conditions pertaining to the programme's implementation for short-term programmes. Based on the lessons that were learned, the implementation period for the remaining programmes will be re-reviewed.

Table 5-3 Implementation Schedule of Priority Programmes

		Short Term			Med Term		Long Term				
		2002/3	2003/4	2004/5	2005/6	2006/7	2007/8	2008/9	2009/10	2010/11	2011/12
Establishment of Programme Coordination and Programme Implementation & Management Committee											
Mid Term Evaluation											
Monitoring											
1	Marine Fisheries Sub-sector Capacity Building Programme		Phase I	Evaluation		Phase II					
2	DSM Fisheries Infrastructure Improvement Programme	Pre-survey and planning for the new FD's office									
3	Lake Victoria Fisheries Sub-sector Capacity Building Programme										
4	Lake Victoria Fish Marketing Improvement Programme										
5	Lake Tanganyika Dagaa Fisheries Development Programme		Phase I	Evaluation		Phase II					
6	Lake Nyasa Planked Canoe Extension Programme										
7	Aquaculture Extension Programme										
8	Fisheries Financial Support Programme					Phase I			Phase II		
9	Fisheries Co- management Programme										
10	National Fish Export Promotion Programme										
11	Lake Victoria Major Landing Beach Improvement Programme										
12	Fishing Communities Development Programme										
13	Fisheries Information System Improvement Programme					Continuous update of data collection system					
14	Fisheries Training Institute Improvement Programme										
15	Fisheries Master Plan Implementation Training Programme										

Construction Component

4. MONITORING

The Programme Implementation and Management Committee will monitor all the priority programmes currently under implementation, and a meeting will be held once a year to review the programmes. The findings will be compiled in a progress report. In the progress report, the lessons learned from the impact of the programmes under implementation will be recorded. For programmes that have not yet begun, the tentative implementation schedule and the situation pertaining to budgetary measures will be included in the report. The progress reports are exceedingly important in implementing the programmes with the cooperation of donors. Therefore, reports to the donors will also be compiled based on the progress reports.