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THE MASTER PLAN STUDY ON FISHERIES DEVELOPMENT
IN
THE UNITED REPUBLIC OF TANZANIA

Socio-economic Survey of Fishing Communities
in Tanzania Mainland

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1.0 Study Background

The master fisheries development master plan project was launched in January 2001. This project is executed and funded by the Japan International Co-operation Agency(JICA).

The outputs from the project are expected to culminate into the fisheries sector development master plan, which will provide guidance to the government and donors for fisheries policy implementation for the whole Tanzania mainland. The project is also expected to emphasise immediate priorities and necessary actions for accelerating growth of the sector and improvement of fishers' lives in the coming decade. A social economic study of the fishing communities is thus proposed among other studies.

2.0 Statement of the Problem

Fisheries activities in Tanzania have been going on for time immemorial. In the previous years fisheries resources were abundant due to less pressure put on them. Today demand pressure on fisheries resources from local and foreign consumers necessitates careful planning of fisheries resources utilisation and management. Without planning and application of appropriate management approaches of our fisheries resources there is a danger of loosing the resource through crashing and dying out of our fisheries. As an input to this planning process, information is vital. Information emanating from the major player in this industry is important if we need to plan effectively and have a successful outcome. Fisherfolk, processors, traders and consumers make up this set of stakeholder groups. Hence, the survey of the fisheries communities aimed at providing this type of information for effective planning.

3.0 Rationale for the Study

This study has its importance in the supply of vital information and understanding of the underlying causes of why the fisheries sector is what it is. The fisheries sector of Tanzania is now gaining major international recognition thanks to the Nile Perch in Lake Victoria. Together with this recognition is the opportunity for the sector to increasingly contribute to the national economy. In the early years, fishing in the Lake Victoria and Nyasa and other water bodies was done in the traditional subsistence level with a little extra for the local markets. Fishing in Lake Tanganyika and Coastal areas of the Indian Ocean has also been at the subsistence level but with a commercial bias for Sardines in Lake Tanganyika and commercial fisheries by foreign and local vessels in the Indian Ocean waters. With the emergence of the commercial fisheries in the Lake Victoria, the importance of fisheries has been enhanced not only for providing nutritional benefits but also employment creation, government revenue generation and foreign exchange generation. According to the statistics provided in table 1 below, the contribution of the fisheries sector to the national economy is significant and increasing since 1995. Real fisheries value has consistently increased between 1991 and 1999. At the same time fisheries sector value in terms of USD has consistently increased since 1993. Despite these obviously positive indicators of the fisheries sector trend, questions about about whom really benefits from the vast wealth of the fisheries resources of the country?

A study was thus deemed necessary to provide for information and facts of the industry. This information is essential ingredient towards understanding of the real situation on the ground and therefore what should be done in order to redress the imbalances existing in the fisheries industry. Using this information in the fisheries master plan should help to promote the sustainable development of the industry.

Table 1: Selected Relationships Showing the Importance of Fisheries in the National Economy

Item	1991	1992	1993	1994	1995	1996	1997	1998	1999
Total GDP	989594	1275917	1607763	2125324	2794266	3452558	4281600	5125311	5986085
Total Fishing	29920	35120	41802	56038	65803	82166	103199	129245	157698
NCPI	43.32	54.15	67.2	90.87	115.77	140.07	162.62	183.45	191.5
Fish/Total GDP	3.02	2.75	2.60	2.64	2.35	2.38	2.41	2.52	2.63
Tshs/USD	219.16	297.71	405.27	509.63	574.76	579.98	612.12	666.75	800
Real Fisheries Value(Fish/NCPI)	690.67	648.57	622.05	616.68	568.39	586.61	634.60	704.52	823.49
Fisheries value (/USD)	136.52	117.97	103.15	109.96	114.49	141.67	168.59	193.84	197.12
Fisheries Contribution to GDP	3.02	2.75	2.6	2.64	2.35	2.38	2.41	2.52	2.63
Real GDP	22843.813	23562.64	23925.04	23388.62	24136.35	24648.80	26328.8648	27938.4628	31258.93
National Budget (Total recurrent and development)			337895	410533	453393	500116	711673	866951	1007786
MNRT Budget (Total recurrent and development)			7898	7898	7898	7898	7898	7898.5805	16053.85
Division of Fisheries Budget			251	251	251	251	251	251.9322	1620.819

4.0 Objective of the Study and Terms of Reference

The objectives of this study are imbedded in the terms of reference (TOR) provided by the client. The TOR required a social economic survey to be conducted in order to provide both quantitative and qualitative analysis on the sector situation and fishers life for the Fisheries Development Master Plan. Specifically, the objectives of the TOR were:

- (i) to collect household and market data within the fishing communities and different fisheries groups with the intention of establishing fisheries policy for development issues.
- (ii) to analyse of the local and foreign fish processors potential as markets for the fisher folks
- (iii) to determine the fishing industry characteristics from different localities:
 - level of technology
 - type of fishing practice
 - problems and constraints faced
- (iv) to prepare a report that will comprise an analysis of findings and recommendation for the following issues:
 - poverty situation and level at the fishers household accessibility to finance meaning the overall situation on savings and credit schemes/ facilities
 - fishers opinion for fisheries development and government support
 - characteristics of fish consumers
 - fish demand forecasting for the consumption market
 - (Quality, price, species, processing, type etc.)

5.0 Methodology

The study is utilising various approaches to carry out this study. The following approaches have been use for this study.

Review of Literature and Key Documents

The consultants have reviewed existing key publications and reports, which are related to fisheries development in Tanzania. This exercise has helped to understand the past and present socio-economic situations in the fishing areas.

Data Sources

This study will utilise both primary and secondary data. The published official documents has been used to collect secondary data and information. The primary data has been collected mainly through surveys and formal informal interviews with key stakeholders in the selected areas of the study. The researchers will also gather information through observations.

Choice of the Study Areas

The study areas to be covered were chosen after considering several issues including the geographical representation, accessibility and active fishing community. The areas chosen in this regard are presented in the table 2.

Table 2: Selected Surveyed Areas

Region	District	Village	Village inventory	Fisheries household	Marketing	Consumption
Lake Victoria						
Mwanza	1. Ukerewe	Rugezi/ Mulusenyi	X	X		
	2. Sengerema	Nyakalilo, Nkome	X	X		
	3. Mwanza	Kirumba market			X	
		Mwanza town				X
Mara	4. Tarime	Sota	X	X		
	5. Musoma	Bwai	X	X		X
Kagera	6. Muleba	Katunguru/kinagi	X	X		
	7. Biharamulo	Mganza/Nyabugera	X	X	X	
	8. Bukoba	Nyamkazi	X	X		
Lake Tanganyika						
Kigoma	9. Kigoma	Bangwe/ Kibirizi Katonga	X	X		
		Kigoma town			X	X
Rukwa	10. Sumbawanga	Kipili	X	X		
Lake Nyasa						
Mbeya	11. Kyela	Kyela	X	X	X	
	12. Mbeya	Mbeya				X
Marine Coastal Areas						
Tanga	13. Muheza	Kigombe	X	X	X	
	14. Tanga	Tanga town			X	X
Coast	15. Bagamoyo	Bagamoyo	X	X		
Dar es Salaam	16. Kinondoni	Kunduchi beach	X	X		
		Town				X
	17. Ilala	Banda beach			X	
Lindi	18. Lindi	Mchinga bay	X	X		
		Lindi town			X	
Mtwara	19. Mtwara	Msimbati	X	X		
		Mtwara town			X	X

Thus, the study has covered 15 sites around the four major water bodies in Tanzania, namely, Lake Victoria, Lake Tanganyika, Lake Nyasa and Marine Coastal areas as shown in the table for household surveys. Marketing survey was done in nine (9) urban centres. Consumer survey has been conducted in seven (7) urban centres.

Sampling methodology

The study has carried out one village inventory (profile) survey from each village. This has involved:

- (i) Stratification across the village according to occupation to get a representative number of various groups but with a focus on fisherfolk including youth and women. In this case the study has undertaken fisher household survey with a sample of about 70 to 78 respondents of fisher/household from each village. With regard to fish marketing about 30-63 fish traders from each village or market site have been sampled. Further, between 86 to 103 consumers (household, hotels, schools, hospitals, etc.) have been sampled for the fish consumption survey.
- (ii) Within these groups, we also categorised the household respondents into rich and poor so that they are all represented proportionately.

Data Collection Techniques

At least six major instruments for data collection for this study have been used and these are:

(a) *Structured Questionnaires*

These have been used in trying to generate information and data, which are used for both qualitative and quantitative analysis. The questionnaire used by the FINNIDA/FAO study on Lake Tanganyika has been used as a basis for this study's household questionnaire.

(b) *Checklist of Leading Questions*

This instrument had questions, which guided researchers in conducting dialogue with a range of stakeholders in the fish sector.

(c) *Focus Group Discussions*

These discussions have been organised for special groups amongst the -fisherfolk such as women and youth.

(d) *Use of Informants*

This instrument has been used so as to capture specific changes and historical information as can be narrated by elders and leaders in the area of study.

(e) *Observations*

Observations during the fieldwork has mainly assisted to probe on issues beyond those, which are covered in the structured questionnaire and interview checklist.

(f) *Documentation*

This has involved collecting information and data from existing reports and documents on fisheries. The key documents and reports which have been reviewed and others in the process of being reviewed include:

(i) Socio-economic surveys carried out by:

- Lake Victoria Fisheries Research Project – has taken stock of fishers.
- Lake Tanganyika Fisheries Research Project
- Integrated Fisheries Development in Rural Fishing, Village, Kagera Region.

(ii) Household Budget Survey, 1991/92

(iii) Sample frame survey for Lake Victoria, 2000.

(iv) Fisheries Division, annual reports

(v) Other studies by FAO, EU, Finnish Embassy, UNDP, IUCN, UNCDF, World Bank and USAID.

(vi) The National Fisheries Policy, 1997

(vii) The National Environmental Policy, Vice President's Office, 1998.

(viii) PRSP and Vision (2025).

(ix) Gibbon, (1997) of Saviours and Punks: The Political Economy of the Nile Perch Marketing Chain in Tanzania, CDR Working paper 97.3, June.

Types of Surveys

The following surveys have been undertaken by this study:

(a) *Household Survey*

This survey has involved all the riparian communities but with a focus on fisherfolk. The survey has facilitated the establishment of the socio-economic characteristics of the surveyed households. It has also assisted in the analysis of issues of credit facilities and environment.

(b) *Market survey*

This survey has been carried out so as to establish the marketing chain and analyse who is doing what in this chain.

(c) *Consumer Survey*

This survey is also important since it is expected that the fisherfolk will expand their production given existence of demand increase for fish. Thus in addition to establishment of the existence of demand for fish, the survey has facilitated the establishment of the fish consumption habits which influence the size of the market for fish.

6.0 Scope and Limitations of the study

This study has covered all the major lakes of the country namely Lake Victoria, Lake Tanganyika, Lake Nyasa and also the Indian Ocean coast. The other water bodies including Lake Eyasi, Rukwa and also dams like those of Mtera and Nyumba ya Mungu have not been covered. Only a select few landing sites and villages have been surveyed. We hope the surveyed areas will represent the other areas not visited. Co-operation in all the areas the researchers went was generally good with the exception of some areas where villagers showed reluctance to co-operate due to bad previous experience with a group from an NGO who promised loans but were never to be seen again!

7.0 Analysis of Findings

7.1 Sample characteristics and Analysis

7.1.1 Sample Size

From the study areas of the four major water body regions of Lake Victoria, Lake Nyasa, Lake Tanganyika and the Coastal areas along the Indian Ocean, the study was able to conduct interviews with 1,118 households.

Villages along these areas were the primary units of data collection; heads of households responded to the interviews. A total of 15 villages were involved in the exercise; and the sample size from each is shown below from a distribution based on the above mentioned water body regions.

Table 3: Distribution of Respondents by villages and fishing areas

	Region	District	Village	Number of Households
Lake Victoria	Mara	Musoma	Bwai	75
		Tarime	Sota	75
	Kagera	Muleba	Kinagi	75
		Bukoba (U)	Nyamukazi	73
		Biharamulo	Nyabugera	75
	Mwanza	Ukerewe	Mulusenyi	72
		Sengerema	Lugata	71
	Coastal	Dar es Salaam	Kinondoni	Kunduchi
Tanga		Muheza	Kigombe	75
Mtwara		Mtwara (R)	Msimbati	76
Lindi		Lindi (R)	Mchinga	75
Lake Tanganyika	Kigoma	Kigoma (U)	Kibirizi / Katonga	75
Lake Nyasa	Rukwa	Nkasi	Kapili	78
	Mbeya	Kyela	Kajunjumele / Igombe	74
Total				1,118

Despite some missing responses from some of the households on some of the issues covered in the study, all the 1,118 households sampled have been used in the subsequent analysis of the collected information.

Basically, the study covered fisher-households in the study areas. This means much of the findings and their implications will be for typical fisher communities.

7.1.2 Age-Sex Composition

Being the basic demographics, age and sex distributions of the respondents were studied. Fisher communities are not different from other communities in the African-rural or African general setting with respect to the gender of the head of household. It was found from the study that 93% of the households were male-headed. Most of these respondents were aged between 26 and 45 years of age where they make a proportion of over 60%. However, some variations were observed in the age-sex composition of the respondents when controlled for the water body region.

It was revealed that Lake Victoria region, unlike other regions, has a good proportion of female-headed households who, in the range of 19 to 45 years constitute 12% of all the heads of households.

These could be an indication of the diversity of fish-related activities in this region that might allow direct involvement of women in the decision-making process. All other regions have shown a general tendency of having very few female-headed households.

These characteristics of the respondents, as shown in summary in Table 4 will be crucial in determining other variables of the study.

Table 4: Percent Distribution of the respondents by age, sex and study area

Sex	Water-Body Region				Total
	L. Victoria	Coastal	L. Tanganyika	L. Nyasa	
	n = 515	n = 375	n = 75	n = 151	n = 1118
Male	89.1	97.9	96.0	91.4	92.8
Female	10.9	2.1	4.0	8.6	7.2
Total	100.0	100.0	100.0	100.0	100.0

Age (years)	Water-Body Region				Total
	L. Victoria	Coastal	L. Tanganyika	L. Nyasa	
	n = 516	n = 375	n = 75	n = 151	n = 1118
Up to 18	0.8	2.4	0.0		1.2
19 - 25 yrs	16.3	21.3	16.0	15.8	17.9
26 - 35 yrs	40.1	34.4	37.3	42.8	38.4
36 - 45 yrs	25.0	20.3	32.0	21.7	23.4
46 - 55 yrs	11.2	10.1	12.0	11.8	11.0
56 - 65 yrs	3.7	6.9	2.7	6.6	5.1
Over 65 yrs	2.9	4.5	0.0	1.3	3.0
Total	100.0	100.0	100.0	100.0	100.0

7.1.3 Marital Status

This aspect of the sample showed the pattern that's followed by an average household in a given community. That's most of the respondents are married, making about 80% of the sample. Variations in this characteristic of the sample are mainly shown by the age of those who are married and the number of wives for the married men in the four study areas.

The data shows that polygamy is exercised in all regions; however, the extent shown by the Lake Victoria and Coastal regions is relatively higher than in the other regions. In these regions there are respondents who have up to six wives. This is an indication of the intensity of fish activities that might be taking place in the regions. Thus, by having many wives and eventually many children, one could have security in terms of the manpower that would be needed to cater for the day to day needs of the household. This need is further indicated by the distribution of respondents by their longevity in the fishing business. For these regions, respondents are many in each class representing their longevity (in years) in the business.

This shows for these regions fishing is the traditional occupation of its residents and is passed through generations.

7.1.4 Education attainment

Before dwelling upon the types and extent of fishing activities that are carried out by the respondents, the study looks into the aspect of education attainment as it has direct influence on such activities and other socio-economic variables in the study. Respondents were required to state the highest level of education that they have so far attained.

The data shows that on the average the largest proportion of the respondents (62%) has completed primary school. (this pattern is generally shown regionally). This implies that a good proportion of fishers have the ability to read and write and thus can make use of written materials which may influence their behaviour and attitudes towards some matters related to their daily activities.

However, on going through regional variations, we note that there are some alarming results. Coastal region, for instance, has got the largest proportion of those who did not had formal

education. Their average, 23%, is twice the whole study average (11%); furthermore they represent 70% of all respondents who didn't acquire formal education in the study. Table 5 below summarises this information.

Table 5: Distribution of Respondents by highest Level of Education attained

Level of Education	Water Body Region			
	L. Victoria	Coast	L. Tanganyika	L. Nyasa
None	25 (4.8%)	87 (23%)	7 (9.3%)	4 (2.6%)
Lower Primary Std. I - IV	73 (14.1%)	79 (21.1%)	12 (16.0%)	30 (19.9%)
Higher Primary Std. V - VII/VIII	366 (70.9%)	182 (48.7%)	49 (65.3%)	99 (65.6%)
Secondary Form I-IV	39 (7.6%)	14 (3.7%)	4 (5.3%)	17 (11.3%)
Higher Secondary To degree level	9 (1.8%)	2 (0.6%)	2 (2.6%)	1 (0.7%)
Functional Literacy	4 (0.8%)	10 (2.7%)	1 (1.3%)	0 (0%)
Total	516 (100%)	374 (100%)	75 (100%)	151 (100%)

In addition, rate of school-dropouts, indicated by the number of respondents who studied up to standard IV is highest (21%) from the Coastal region. This is after leaving out respondents aged over 56 years 18% who might have been in the educational system that had a complete curriculum after standard IV. This observation has been typical of the coastal areas in Tanzania where the government and its organs have been trying to change some traditions in the areas that hinder educational development.

All regions have shown negligible proportions of respondents with higher education. For the whole study, respondents with education higher than lower secondary (Form I - IV) are less than 2%. This trend is observed in the regional distributions as well.

7.1.5. Migration and Occupation

Fishers are well known for their habit of shifting from one place to another in search of better working places in terms of type and quality of their catch. This behaviour is well known to have some relationship with socio-economic activities of the places where the fishers do reside at any point in time.

To measure the extent of migration, this study required respondents to state they were born at localities where the interviews were conducted or not.

From the whole study it was found that about 43% of the fisher folks were involved in shifting from one place to another. The shifts were observed to be minimum before independence (2%) and maximum in the period 1995 to 2000 (51%).

Table 6: The distribution respondents by areas they migrated from

Shifting from	Frequency	Percent
Within District	98	23.7
Different district within region	104	25.1
Neighbouring region	157	37.9
Distant region	52	12.6
Neighbouring country	2	0.5
Distant country	1	0.2
Total	414	100

The highest proportion of the migration rate (38%) was observed to be the one involving movement of fisher folks between neighbouring regions (i.e. neighbouring regions with one or both having a major water body). The second ranked type of migration for the fisher folks is that involving movements within a region where people move from one district to another. This type of migration involved 25% of the sampled fisher folks.

At water body regional level, the study found out that there were a lot of shifts of fisher folks from other parts of the country to the Lake Victoria and Coastal regions. There shifts were at the peak in the period between 1995, and 2000 representing 60% and 37% of all fisher folks who moved to the Lake Victoria and coastal regions respectively.

There shifts could be attributed to a number of factors including (i) normal shifts of fishers in search of more productive areas, (ii) signs of fish stock depletion in some areas and (iii) outcome of policy changes in the country that make people shift from one work to another, consequently causing migration.

Particularly for the Lake Victoria region, fish processing industries in Mwanza and Musoma have caused influx of fishers to its vicinity due to the market assurance that is provided by the processors.

Another class of migrants not mentioned from the above discussion is that of young fishing hands coming from neighbouring countries. Most of these are boys who have not completed formal education in their countries of origin. They form a large group of fishers who live in fishing camps around the shores of Lake Victoria and other major water bodies of Tanzania. They are normally "owned" by big fishers who are agents of fish processing companies. There are signs of growing tension between this class of migrants and the locals when it comes to the distribution of fishing grounds in the lake.

Despite having respondents as fishers, the study wanted to establish type and extend of fish related activities that they were engaged in. It was found out that 74% of the respondents were involved in fishing on a full time basis. This trend was observed in all water-body regions with the exception of Lake Nyasa region, where only 41% of the respondents were full-time fishers.

Distribution of respondents by their status as fishers is shown in Table 7. From the table we note that the majority of fishers are those who own boats and physically get into the water bodies for fishing. They represent 44% of the fishers.

Table 7: Distribution of Respondents by status of Fishing

Status	Frequency	Percent
Fishing aid	309	32.2
Boat owner and fisher	420	43.7
Boat owner don't fish	102	10.6
Renter of gear	109	11.3
Renting/Borrowing	21	2.2

Fishers who don't own boats represent the lowest proportion of 2% . These are normally casual fishers or those new into business and are in the process of acquiring their own gear.

Regionally, the same pattern is shown with the exception of Lake Tanganyika region, where most of fishers (61%, n = 70) are fishing hands.

The study found out that the main activity occupying the respondents besides fishing is farming for both food and cash crops. All regions have shown to have over 45% respondents who are farmers. Lake Nyasa Region has the highest proportion (65%) of such respondents.

7.1.6 Earnings

Due to complexities of estimating income for people in different communities this study tried to use different approaches in doing so in order to get a clear picture of the means of extent of income generating activities that are undertaken by the respondents.

The study looked at earnings from fishing activities, income from other activities, minimum and maximum monthly income as well as earnings in poor and good months of fishing activities.

Monthly expenditure and value of household possessions, aspects closely related to income, were also studied in order to supplement the gained knowledge on the income of fisher households.

Average monthly income from fishing was observed to be Tshs.45,000, with most of the fishers (26%) having monthly income of between Tshs.31,000 and 60,000 per month. This study result was found to be consistent with all regions; i.e. all 4 regions under study have shown to have the average income from fishing activities as Tshs.45,000. However, we observe some differences when we look at income from supplementary activities.

Table 8 below shows distribution of respondents by income from other sources.

Table 8: Distribution of Respondents by Income from Supplementary Sources

Income (Tshs.)	Region			
	L. Victoria	Coastal Belt	L. Tanganyika	L. Nyasa
Less Than 10,000	116 (40.7%)	51 (30.0%)	4 (8.7%)	16 (12.7%)
11,000 - 20,000	50 (17.5%)	22 (12.9%)	13 (28.3%)	40 (31.7%)
21,000 - 30,000	49 (17.2%)	25 (14.7%)	9 (19.6%)	29 (23.0%)
31,000 - 60,000	37 (13.0%)	57 (33.5%)	10 (21.7%)	19 (15.1%)
61,000 - 100,000	17(6.0%)	11 (6.5%)	6 (13.0%)	14 (11.1%)
101,000 - 150,000	4 (1.4%)	1 (0.6%)	1 (2.2%)	1 (0.8%)
151,000 - 200,000	2 (0.7%)	1 (0.6%)	1 (2.2%)	4 (3.2%)
Over 200,000	10 (3.6%)	2 (1.2%)	2 (4.4%)	3 (2.4%)
TOTAL	285 (100%)	170 (100%)	46 (100%)	126 (100%)

The distribution above portrays the extent of dependence on fish-related activities by region of respondent.

We note that residents along Lake Victoria are heavily dependent on fishing for their income; the data shows that the average income per month from other activities is less than Tshs. 10,000/= the least compared to other regions. The coastal region tends to give a picture of a wider diversity in other activities apart from fishing. In this region the average income from other activities is almost the same as the income from fishing, i.e. Tshs.45, 000 per month. Lake Nyasa and Lake Tanganyika regions have shown some moderate income from other activities, lying in between the other two with an average of Tshs.15, 000 per month.

Other aspects of income/earnings tend to show similar pattern, that is the Lake Victoria region has fishers who depend on fishing activities for their income much more than any other economic activity. This finding calls for a more detailed analysis of the fishers using other proxies of income in order to determine why this is so.

7.1.7 Technology/Fishing gear used

After observing the extent of dependence on fish-related activities for the well being of the respondents, the study now gets into the analysis of the gear used. It will be of interest to know the type of gear and degree of usage for the region. This will enable us to understand whether or not regions with highest economic dependence on fishing have the most advanced technology in fishing.

Firstly, the study wanted to know the type of boats that are used by the fishers in the study areas. it was found out that about 1% of the respondents were casual fishers who don't need to use boats for their fishing activities as they just get into shallow waters of their fishing areas.

The largest proportion, however, was that of fishers with no engine-driven boats, they are 85% of all the fishers interviewed. This huge proportion indicates the types of fishers that reside in the study areas; they are small-time fishers who can not really engage themselves in fishing without risking their lives by going into deep waters for good catches. This follows the results of other studies in these areas where it has been shown that there are indications of depletion of fish stocks; and when this is coupled with the weather changes, it makes the fish get into deep waters that can only be reached using motor-driven boats for adequate catch.

This finding along calls for an immediate attention to the whole question of well being of individual fishers. This follows from the fact that other parties that depend on fish, for instance processing industries, would benefit from the "combined" poor catches of individual fishers and thus would never bother them with what happens to an individual fisher, in terms of his well being. The circle can only be broken if appropriate measures are taken to make fishers a unit that works for itself determining all its needs by itself and having the power to negotiate with all other parties that fall in the chain of fish industry.

7.2 Production and Processing of Fish

7.2.1 Preamble

To understand how any business enterprise function, we begin by analysing a firm's production function. This is determined by the relationship between the maximum amount of output that can be produced and the inputs required to make that output for a given state of technology (Samuelson and Nordhaus, 1992: 107). In the fishing industry this is related to catch and effort. Where catch will represent the production output and effort will represent aspects of technology (soft and hard), that in turn will determine the amount of manpower. Likewise, the processing of fish is carried out in different ways for preservation in order to facilitate longer shelf life and therefore transportation to far off markets without spoiling the quality of fish. This is done in different ways, which are discussed below. The findings of this survey point to both production and processing employing rudimentary and low level technology. Huge potentials for improvement exists, given various conditions are met. Such conditions include improving the way fishing is done in both Lakes and in the Indian Ocean especially through employing improved fishing gear and marketing arrangements.

7.2.1 Fishing Practice

Fishing practice differs from place to place and particularly practice in the coastal areas as compared to Lake fishing. There are differences and similarities though. The similarities include the small-scale nature of fishing activity, the following of the same conditions of darkness or moonlight days for fishing decisions. Hence, the dark days will produce more catch than the moonlit days both in the Lakes and in the ocean. The differences include the seasonal migration in the coastal areas influenced by the northerly and southerly winds. These normally take fishers migrating to and from Mozambique side during northerly and southerly winds respectively. Mozambicans do move to the Tanzanian side during the southerly winds (May-July) up to Kilwa to fish, while Tanzanian move to Mozambican side during northerly winds for the same reason. While they are there they do also sell their fish to the nearest markets. This does not happen in the Lake water bodies. The migration there is mainly prompted by decline of fish catches in fishing grounds.

In both areas, Lakes and Ocean, illegal fishing gears are used due to three main reasons. First, is the decline of fish catches and the need to get more fish. Secondly, Lack of better fishing equipment and thirdly greed. However, dynamite fishing is found in the ocean fisheries, while the use of poison is most common in lakes.

7.2.2 Fishing Technology

Different technology prevails in the fishing industry and these have an influence on the amount of output produced. Technological change refers to a change in the underlying techniques of production, as when a new product or process is improved. In such situations, the same output is produced with less input, or more output is produced with same inputs.

The current fishing technology at local level in all the areas of study i.e. Lakes Victoria, Tanganyika and Nyasa and also the Indian Ocean Coast, is still the traditional technology whereby fishermen with their vessels or small canoes use fishing nets and hooks. Few fishermen have boats with outboard or inboard engines. A handful of “wealthy” fishermen and fish processors in Lake Victoria command many boats with outboard engines and many fishnets with a higher catch capacity, while the majority are still traditional owning one or without canoes/boats and one or a couple of fishnets! This as has been found out is one of the major obstacles to better catch and hence income.

The Fisheries Division frame survey for 2000 for Lake Victoria (Tanzania side) show clearly that number of landing sites have increased by about 33% from 451 in 1998, while number of fishermen has increased by 74% from 1998 figure of 32,403. The number of fishing vessels has also increased by 103% from the figure of 7,618 fishing vessels. Furthermore, fishing has become more mechanised and sophisticated by a huge increase in both in-board and outboard engines. Outboard engines have increased by 76% from the 1998 figure of 825 outboard engines only! Likewise for inboard engines the increase has been tremendously phenomenal by 1400% from the 1998 figure of 5 inboard engines. The range of fishing gear has also increased remarkably.

Table 9: Summary of Technology Used in Fisheries in Mainland Tanzania 1995

SN	Item/Gear In Use	Freshwater	Marine Waters	Total
1	Number of vessels	18696	3768	22464
2	Gill nets	185424	4120	189544
3	Shark nets	-	3357	3357
4	Beach seine	1343	350	1693
5	Scoop nets	1129	75	1204
6	Cast nets	6	49	55
7	Apollo nets	4	-	4
8	Lift nets	1403	-	1403
9	Ring nets	-	221	221
10	Sardines seine nets	2979	-	2979
11	Hooks/hand lines	1685193	7839	1693032
12	Longlines	-	1575	1575
13	Basket traps (madema)	5071	3390	8461
14	Fixed traps (uzio)	-	25	25
15	Spears	-	134	134
16	Hurry up	67	-	67
17	Outboard engines	798	272	1070
18	Inboard engines	15	34	49
19	Trawlers (industrial)	16	19	35

Source: Adapted from Fisheries Division Annual Statistics Report 1995

7.2.3 Output/Catch Trend

7.2.3.1 Availability and Quantity

In all the fishing grounds we visited fishers pointed to us that fish availability was declining as measured by their daily and seasonal catches. Various reasons have been put forward to explain this, but in most cases increased pressure on the resource in terms of fishing effort and illegal fishing practices have accounted for the most part this decline. Fishing effort for Lake Victoria for instance has increased tremendously as discussed above.

Table 10: Fish Production Trend in Mainland Tanzania

Year	Inland lakes	Marine
1993	294782	331467
1994	228007	268792
1995	207139	258212
1996	308600	356800
1997	306750	356960
1998	300000	348000
1999	260000	310000

Source: Economic survey 2000

7.2.3.2 Fish Prices Determination

Determinants of the level of prices for fish are various. In Lake Victoria for example, the existence of many buyers in some areas do put prices high while in others prices are low due to monopolistic practices by some of the bigger buyers especially buying agents from the big fish processing plants of Mwanza and Musoma. The type of fish also determines the price levels. So, due to the consumer preferences of certain type of fish we may find that some fish are highly prices than others. The extent of the market in many cases is the major determinant

of price levels. Where there is export opportunity for fish, the market is expanded and the demand therefore expands prompting more fish to be harvested. The level of the price will now depend on the structure of the market itself. If the market is dominated by competitive behaviour in buying, then fishers will enjoy high prices, but if the market is being controlled by monopolistic or even oligopolistic practices, then the producer is at a disadvantaged position to bargain. The different kinds of situations do exist in the fishing industry in Tanzania mainland. The way people determine prices for their fish tells the whole story about the nature of the market structure they are facing. In some places prices are predetermined by the buyer, could be by the kilogram of a certain type of unit e.g. bucket. In other places fish is auctioned and the highest bidder gets to buy. This is some kind of competition although can be abused.

7.2.4 Processing Methods

Technology, energy, type and source

The main types of fish processing found in the areas of study include fish smoking, sun drying, salting, frying, freezing and chilling. The last two methods are practised at a small scale in the coastal areas to preserve fish and prolong their shelf life while transporting to major markets locally. For Lake Victoria this is done at two levels; one level involves the preservation for local markets and the second level is done for foreign markets particularly for Nile Perch. The foreign market level requires extra processing such as gutting, cleaning, filleting, freezing/chilling and packaging. In the Lakes Tanganyika and Victoria, sardines have both local and foreign markets. Their preparation is simply sun drying on rock surfaces or on beach sand.

Survey findings show processing methods in the 4 fishing areas of Tanzania. In Lake Victoria 33% of the respondents process their fish by frying, while 18% process by sun drying, salting is done by 15% and 13% do different by having 50% of processors smoking their fish and 35% frying. Processing methods in Lake Tanganyika include smoking 34%, sun drying 22% and 38% do both sun drying and smoking. Processing methods in the coastal areas are frying 36%, sun drying 25% and salting 4%. As has been shown by the empirical findings, most of the processing technologies rely on sun drying and drying by woodfuel fire. This has an implication on the environment through excessive cutting down of trees. Anecdotal evidence show that those places where processing by smoking and frying is done, trees are in short supply.

7.2.5 Investment cost in processing.

Investments for processing technology differ greatly from one another. Some technologies used in fish drying in mainland Tanzania do require just space on the beach or on rock surfaces in order to utilise the God given drying agent- the sun. All that is required is constant supervision and monitoring to ensure the drying process is desirably achieved. Investment in processing fresh fish for export requires huge sums of money and expertise. Take the Nile Perch processing plants in Mwanza and Musoma for instance, the infrastructure required which includes facilities and equipment for various stages of the processes such as receiving bay, gutting area, cleaning area, filleting area, freezing, packaging and transporting, needs a huge financial commitment. Prime catch, a new fish processing plant in Musoma town with the capacity to process 125 tons of fish/day at full capacity to produce 50 tons of fillets. The plant cost about US\$ 8million with a working capital of US\$ 500,000. Other technologies depend highly on other natural resources and the environment. These are mainly drying

technologies using woodfuel. The manner, in which the harvesting of wood for drying of fish has been done over the years, has resulted into the deforestation of some areas near the fishing villages. This is an undesirable outcome with respect to the conservation of our environment. According to Gibbon (1997), investment in fish processing is quite high for factory production of Nile perch and less expensive for artisanal processing inputs. Artisanal processing inputs include kilns, wire meshing, building poles, wire brushes, scraping knives, bowls, bottles, baskets, sacks, woodfuel, salt among others, Factory processing inputs include plant buildings, machinery (a fish grading machine could cost up to US\$80,000), chemicals and packaging materials. All these have to be purchased locally or abroad. Artisanal processing facilities are simple and are normally made personally by their owners or employ cheap labour to make. For instance a processing kiln with the capacity of holding between 400 – 800 pieces of fish depending on the size of the fish could cost up to US\$200: - to build. The advantage on the source of materials for the artisanal processing facilities is local and mostly available from nature.

7.2.6 Constraints experienced

Constraints, which have been pointed out by fishers mostly, boiled down to lack of capital and credit sources, marketing problems and piracy for the Lake Victoria fisheries. More discussion on the fishers' problems is provided later on.

7.3 Marketing

Preamble

Fish produced in the mainland Tanzania have their markets mainly locally and in foreign customers. Fish marketing and sales in the mainland Tanzania is mainly done through small-scale traders.

7.3.1 Marketing Survey

Areas of Study

The marketing survey was conducted in 9 regions. These are as presented in the table below:

Table 11: Sample-survey areas

Area	% of Sample of 400 respondents
1. Dar es Salaam	12.5
2. Kagera	9.0
3. Kigoma	13.3
4. Lindi	7.5
5. Mara	12.5
6. Mbeya	12.5
7. Mtwara	7.8
8. Mwanza	15.8
9. Tanga	9.3

Source: Survey Data May 2001

Dar es Salaam and Mwanza one no doubt the largest markets for fish in Tanzania. Both these cities act as transit places for other local and foreign destinations. At the Mwaloni landing site in Mwanza, fish products are loaded for destinations such as Dar es Salaam, Rwanda and Burundi also Bukavu in Democratic Republic of Congo (DRC). From Mwanza Nile Perch processing plants consignments of processed fish find their way out of the country through the Mwanza airport and through Sirari border past to Kenya for farther onward destination to

Europe. At the Dar es Salaam Centre, sardines from both Lake Victoria and Lake Tanganyika are further transported to destinations to the southern regions of Mtwara, Lindi, Mbeya and across the border to Zambia. Salted Nile perch “Kayabo” Also find their way to the Southern regions and Tanga through Dar Es Salaam City.

7.3.1.1 Existing Fish Marketing Situation

The fish-marketing situation is predominantly small-scale with the huge majority of the markets being local with the exception of the Nile Perch in Lake Victoria. Sardines in both Lake Victoria and Lake Tanganyika apart from the local markets have also regional markets including Zambia, Rwanda and Burundi, Democratic Republic of Congo (DRC) markets. Although there are several types of fish from both the Lakes and the Indian Ocean, it is only a few types of fish, which are commercialised. From Lake Victoria, The Nile Perch (NP) leads the group in terms of commercialisation followed by sardines and Tilapia. NP and Sardines have both local and foreign markets while Tilapia is predominantly local market oriented. From Lake Tanganyika Sardines are the highly commercialised fish specie with markets both local and foreign. From Lake Nyasa no particular type of fish for consumption for the export market except the ornamental fish. The local markets for fish are urban centres along or near the water bodies. The major markets for fish in mainland Tanzania include the big urban centres of Dar es Salaam, Tanga, Mtwara, Mwanza, Morogoro, Dodoma, and Arusha. The major foreign fish markets include The European Union, Israel, UK, and USA, Italy, Greece, Holland, Ireland, HongKong, Gibraltar, Spain. From the coastal belt, most fish is for local markets of Dar es Salaam, Tanga, Mtwara, Lindi, and Morogoro. Exported fish by big fishing vessels are mainly shrimps of prawns. However, fish from the Indian Ocean find their way in most tourist hotels all over the country where red snapper, prawns, squid and octopus are most popular types. Fresh water fish are also found in these tourist hotels particularly Tilapia.

Findings from the marketing of fish survey shows that the type of fish mostly traded is shown to be fresh fish (53%) Dried fish (21%) and smoked fish (8%). The most popular type of fish traded from Lake Victoria is Nile perch, Tilapia and sardines. In the Lake Tanganyika ‘migebuka’ are the most popular, while in the coastal areas it is ‘changu’ ‘tasi’ ‘kolekole’ and ‘vibua’ emerge as most commercialised.

An interesting characteristic of the fish traders is that, 56% of the traders are migrants. Most of these moved to the fishing areas in the last decade. 22% 1991 – 1995 and 28%, between 1996 – 2001. 36% come within the same regions, where the fishing activity is done, 27% came from neighbouring countries.

Table 12: Marketing Survey Profile (n=1118)

	Item	Lake Victoria	Lake Tanganyika	Lake Nyasa	Coastal Fisheries
1	Average HH size	7	7	5	5
2	Average income/month				
	Good season	242,2000	95,792	51,880	158,612
	Bad season	117,367	41,711	23,489	76,665
3	Other sources of income/month	40,505	3,981	5,602	11,594
4	Average period engaged in fish trade	6 years	10 years	8 years	13 years
5	Average Fish Trade Transactions per month	17 times	19 times	20 times	24 times
6	Amount of fish traded per month	1,635 KGs	296 KGs	60 KGs	49 KGs

Source: Field Marketing Survey, May 2001

Fish trade is a profitable undertaking but differs from area to area. As the table above shows, fish traders in Lake Victoria are making the most of money compared to fellow traders elsewhere. Coastal traders and Lake Tanganyika follow Lake Victoria traders. Lake Nyasa traders reported the lowest average income per month. The low average number of years in fish trade is for Lake Victoria fish traders. This is quite in line with the emergence of Nile Perch as the main commercial fish from the lake around 1993, attracting more people to the trade. Comparing the monthly average traded fish in all the 4 areas, Lake Victoria leads with 1,635 kilograms while the coastal area fisheries are last with 49 kilograms. This is surprising but might be representing the existing situation since most of small-scale subsistence level fishers who are using inferior equipment and face poor market opportunities. This is the situation in Mtwara and Lindi where most of the landing sites are away from big fish markets and roads are not good.

7.3.1.2 Fish Marketing Chain

Starts with the fishers in the lakes and involves middlemen and small and large-scale traders. To be able to analyse the fish marketing chain in the various areas, we may want to look at different types/species of fish since each type of fish has its own marketing channels depending on its customers and processing method involved and the extent of commercialisation. Despite the existence of numerous fish species in both the Lakes and the Ocean, there are only a handful of widely commercialised types (i.e. fish mostly sold away from the fishing locality).

Fish traders fall in various categories. Field data show that fish traders in the areas surveyed fall into 4 major categories in the marketing chain namely; fish trading alone (55%), Processor/trader (26%), Fisher/trader (8%), and processor (6%). In both Lake Victoria and Coastal areas, a great proportion of traders buy their fish direct from fishers, followed by buying from fellow traders.

Table 13: Source of Fish Supply

Source	% of responds
1. Buy straight from fishers	50
2. Buy from other traders	17
3. Buy from processors	10
4. Buy from Auction markets	2
5. Mix of the above	21

Fish buying arrangement

Two major methods used for buying arrangements are by paying cash and through credit. In the Lake Victoria region about 19% of traders buy from the same particular fisher due to getting discounts. However 21% do not buy from particular trader because they do not get any guarantees. Likewise in Lake Tanganyika 54% do not buy from same fisher for the same reason. The situation is the same for sales.

In the Coastal region represented by Tanga, Dar es Salaam, Lindi and Mtwara 21% of traders sell on the open market and 26% depend on auction market. The main reason given is the existing of many buyers in the majority of the landing sites especially in Tanga and Dar es Salaam regions. The Southern regions of Lindi and Mtwara, road infrastructure for Dar es Salaam are in bad shape hence curtain easy access to markets. In Lake Nyasa, fishing activity in the lowest compared to the other three fishing areas, 55% of traders do not buy from a permanent fisher due to lack of guarantee of fish supply.

Table 14: Purchase arrangement

Arrangement	% respondents
1. Relying on market	67
2. Buying from particular fishers	33

Sources of Fish Supply

In all the 4 areas of study, traders buy their fish from three main source which are buying from fishers, processors and from other traders. However, variations do exist. In coastal areas are the above three existing with an addition of the fourth, which is by auction markets. 44% of respondents buy from fishers, 15% buy from other traders, 7% buy from processors and 5% buy from the auction markets.

In Lake Victoria buying direct from fishers also dominant by 54% followed by 19% of the respondents buying from other traders. Fish processors sell to 11% and the rest do a mix of the above. Auctioning does not exist. In the coastal areas, the auctioning has several advantages to the buyers in terms of good prices and tax collection to the local government. In Lake Tanganyika again auctioning does not exist and the same 3 sources as above. Here 32% of traders buy from fishers, 21% from traders and 19% from processors. The rest of the traders do a mix of above. The majority of traders in Lake Nyasa buy from fishers 81%, 10% and 8% of traders buy from other traders and processors respectively.

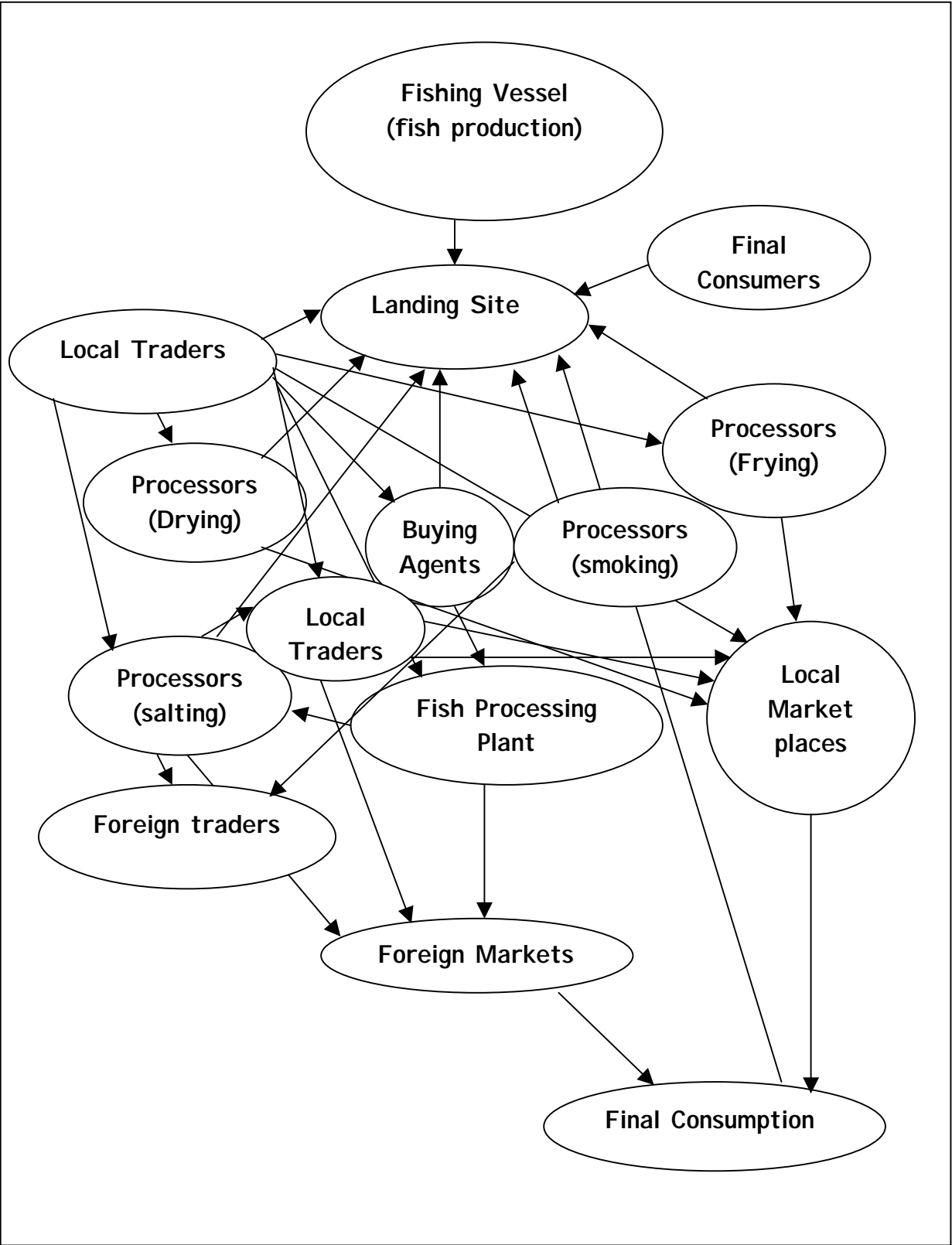
Selling Market for fish from Traders

Traders around Lake Nyasa sell their fish mostly to consumers (80%) and the rest sell them at a local retail market. In Lake Tanganyika, apart from direct to consumers (29%) and local market (35%) traders sell also to non-local traders (31%). The majority of traders in the coastal areas also sell direct to consumers (61%) and 22% to non-locals who process to sell in other areas in the hinterland. In Lake Victoria 39% of traders sell direct to consumers, 29% to non-local traders, 17% to local traders and 12% to local retail market.

From the source of fish and market for fish for fish traders, it could be seen the nature of transactions which are taking place and the chain involved. In the Coastal areas and in Lake Victoria and to a lesser extent Lake Tanganyika do have buyers from outside the locality and in Lake Victoria and Tanganyika foreign buyers are found to operate.

From Lake Victoria species mostly traded are Nile Perch, Sardines and Tilapia. The marketing chain for NP is as follows: -

Figure 1: Nile Perch Marketing Chain



Fish marketing and sales transactions start as early in the water before fish is landed in some cases. When fish is landed, there are several people waiting to buy. Some fishers do have buyers whom they have an agreement so as to ensure market access for themselves while missing out some benefits of competition in some cases. These buyers may be any of the ones listed in the chain i.e. private buyers, traditional small-scale processors (salt, sun drying and frying) and the agents for the modern processing plants. In some cases more than one buyer are present at the landing sites to provide a healthy competitive atmosphere in which the fishers benefit. In others situations, only one buyer and usually the agents of big private buyer is present to the disadvantage of the fishers due to monopolistic behaviour of these buyers. Apart from about 10% of the total catch which normally goes to fishers own consumption, Most NP goes to the neighbouring local markets to be sold and consumed as fresh while the other larger share go to the processing plants in Mwanza and Musoma for foreign markets.

The buyers at the landing sites include also consumers who live in the vicinity of the place or within the village in which the landing site is situated. These have to compete with other buyers, and normally will buy from fishers with small catches who do not have competitive power. The other group of buyers is mostly ladies who process fish by frying for the neighbouring markets but also for the far off local markets upcountry. This type of processed fish finds its way up to Dar es Salaam and all the regions in between Mwanza and Dar es Salaam. It is a significant market, which provides the opportunity for self-employment to women around the lake.

Fish marketing at Mtwara landing sites particularly the Shangani landing site lack proper organisation hence affects some small-scale traders negatively. Due to lack of fish auctioning, women traders are disadvantaged due to lack of capital. Young middlemen with adequate amount of money (normally Tshs 30,000/= onwards) buy fish straight from fishers and resell the same to the women at several times their purchase price without adding any value. This is an unnecessary level of the fish trade chain, which does exploit and deny especially the women fish vendors the little income they would otherwise earn. Furthermore, this arrangement denies the government revenue from fish sales.

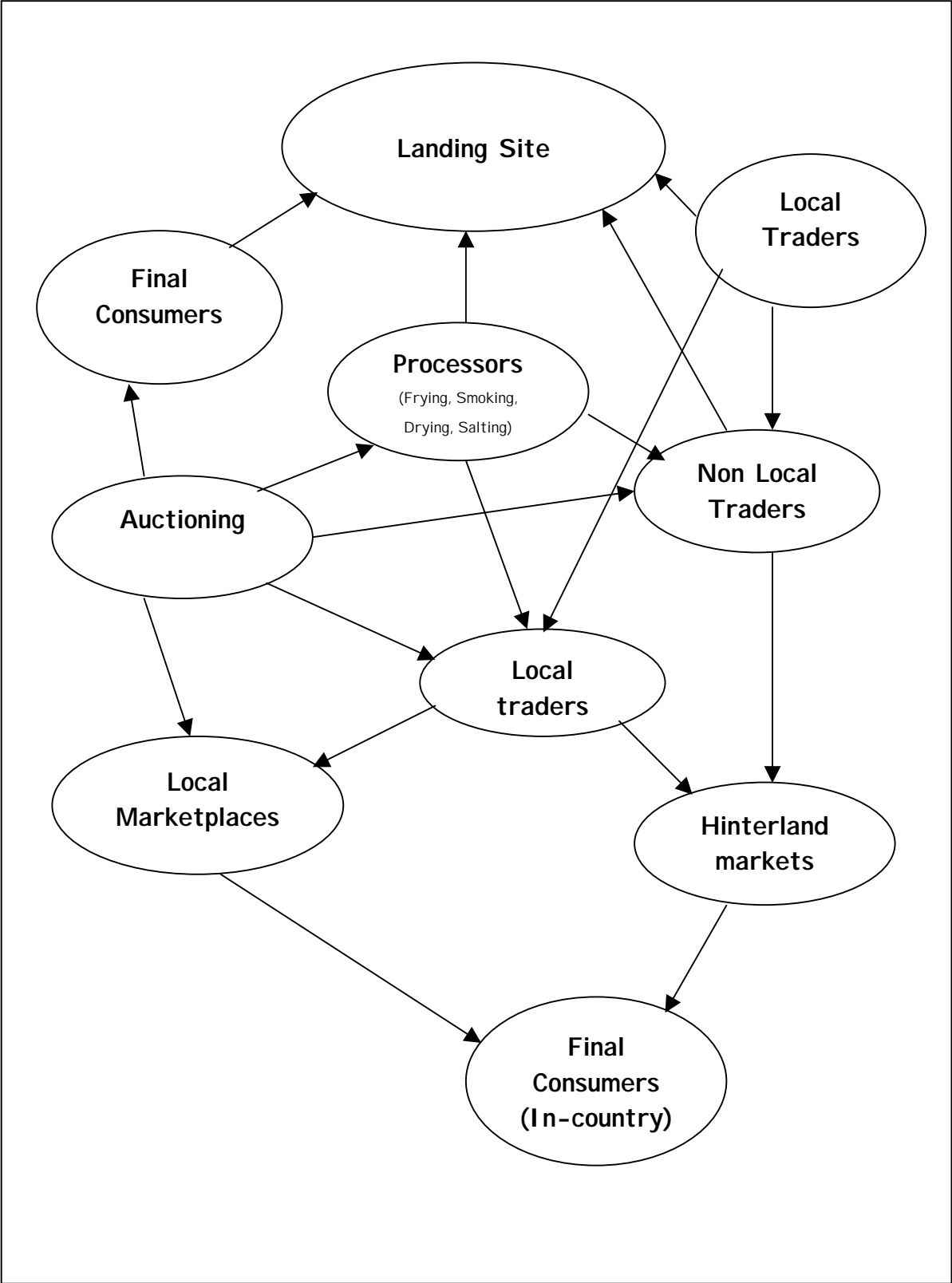
The traditional fish processors normally take advantage of lack of buyers. These may include the fishers themselves or people they have entered into agreement to supply fish. These will normally offer a little bit less price due to the fact that they still have to process the fish and bear the risk of spoilage. This has become a stabilising factor in the areas where fish market situation has not been favourable for quite some time in terms of low prices offered and the availability of buyers. In such cases, fishers salt-dry their fish for the lucrative “Kayabo” market in DRC and elsewhere in the country. This is a good opportunity for market diversification so as to stabilise prices and fisher incomes.

The fish that finds its way to the processing plants is filleted and packaged for foreign markets. However, from the processing plants comes out rejected fish and fish frames or by-products of filleting. These find their way back to the marketing chain through the salt processors enterprise. The frames are sold either for human consumption in the form of chips or as an input to animal feed processing. The rejected fish is salted and dried for both local and foreign markets for human consumption.

Therefore, until NP fish gets to the dinner table, it passes through different hands and processes in which many people/traders are involved in making a living either through fishing, processing, loading and unloading, transporting and related activities. Apart from the

marketing chain presented above, there are also sub-chains involving fish by-products of fish frames and fish offal (mabondo).

Figure 2: Fish Marketing chain for the coastal belt



Profitability

The fish business is profitable but risky. The survey could not get reliable information on this aspect of fish trade. For the fishers, this aspect was difficult to grasp since all they cared for was what they got out of daily catch. Keeping records or even considering their labour power as input into production and therefore need to be considered, as a cost into production was an alien idea! For the traders, that was an area they would rather tell you that they “get by” without being specific on their costs of trading. The major problem, which came out, was the bookkeeping aspect. Many of the traders are kind of subsistence types who did not have the knowledge of bookkeeping. But they were also wary of mentioning their profits for fear of being given a high tax rate.

Seasonality

Fish migration and overexploitation necessitate migration of fishes from place to place. This makes fish prices change from place to place following the law of demand and supply. There is an interesting migratory of fishers’ movement down south between Tanzanian fishers and those from the neighbouring country of Mozambique. During the southerly winds fishers from Mozambique will move to Tanzanian side fishing grounds of Mtwara and Lindi regions. During the northerly winds the opposite will occur legally of course! When this occurs, fish caught will be sold in the areas where they have been caught whether it is in Tanzania or Mozambique regardless of whom caught them. In the previous years when war was raging in Mozambique, the market for fish products from Mozambique used to be in Mtwara (e.g. sea cucumbers and others). In the lakes mostly the difference between the dark nights and bright night (following the movement of the moon), also the rain and dry season influence fish catch for most specie of fish.

Transport infrastructure

Availability of transport to a fish-landing site is influenced by the good/bad condition of the roads and the distance from the processing plants and major trading centres. If a landing site is far off from where the consumers are, it has the implication to add cost on the selling price. If there are other competitive sources of protein, this results into slow moving fish business and hence discouragement of the expansion of the business. In most places, the roads are bad necessitating the shifting of landing sites to more accessible places. Water transport is more common where the waters are easily navigable especially in Mara and Mwanza regions although road is also used to collect fish landed by small-scale fishers. Fish transport vessels are still not sufficient and not as cost efficient as road transport since they carry less load and use a lot of fuel not mentioning the risk involved in water transport when the weather is bad.

Modes and status

There are 2 major transport modes used to transport fish around the country. These are waterways and roadways. Air transport and train wagons are also used but not at the same level as the other two above. Waterways are mostly used to transport fish from fishing grounds/camps to landing sites where they are marketed. Road transport normally is used to transport fish to processing plants and areas and to far off fish market places upcountry (Dar es Salaam, Mtwara, Lindi, Tanga, Shinyanga, Dodoma, and Morogoro) or even across borders (Rwanda, Burundi, and DRC)

Transport facilities/operating equipment

Existing transport facilities are predominantly privately owned. Some of these are trucks used for multiple purposes. Could be used to haul different types of goods given the opportunity.

Just a few specialised fish transport vehicles exist most of which are owned by fish processing companies.

Table 14: Trading transport

Type	% of respondents
1. Vehicles	39
2. Bicycles	23
3. Head Load	17
4. Transport boat	5
5. Mix of above	16

Storage facilities

Cold storage

This is one facility, which is lacking in many places and is very important for promoting fresh fish trade to small-scale traders who can not afford to have own facilities and the capability for their sustainability.

Table 15: Storage and other trading equipment/facilities

Facility	% respondents n=1118
1. Bicycle	38
2. Frying Facilities	18
3. Cooling Box	13
4. Boat	11
5. Drying Facilities	11
6. Freezers	6.5
7. Others	2.5

As the above table shows, the most common fish storage facilities are cooling boxes and freezers. Reading from the proportion of respondents having them (13% and 6.5% respectively). The cooling boxes are inadequate since they depend on ice blokes, which are not readily available in remote fishing villages and landing sites. Fishers have to travel long distances to get these blokes which will last a couple of days before they melt away. Freezers are non-existent in most landing sites except in urban major centres near the fishing villages. The distance to centres where ice blokes are available and the cost involved deters the wider use of this facility to advance trade. Around the Lake Victoria region fish collection by Nile Perch processing plants facilitate the fresh fish trade but only for fish going to the plants. These send fleets of refrigerated vans to accessible landing sites around the lake to collect fish for their plants. In the coastal areas and all over the country there used to be a public enterprise known as the National Cold Chain Foods Company (NCCFC) which used to supply fresh fish throughout the country. That company's activities have but died away due to mismanagement. The lack of these facilities discourages fresh fish business and suppresses the trade and consumption of fresh fish in the country.

7.3.1.3 Problems

The major problems faced by most traders are listed in the table below. It can be seen from the table that most of the respondents in 3 areas of study ranked the lack of capital problem as the first most severe. In Lake Victoria area the market problem is ranked the first while it is the second for Lake Tanganyika and Coastal areas. For Lake Nyasa the second most severe

problem is that of transport and marketing ranks third. Poor storage facilities such as cold storage for fish are the 3rd and 4th major problem for the Lake Victoria area and in the coastal areas respectively. These are coincidentally the most active fish trade areas of the four study areas.

Table 16: Major Problems faced by Traders

sn	Item	Lake Victoria %	Lake Tanganyika %	Lake Nyasa %	Coastal Areas %
1.	Small capital	13	49	42	23
2.	Marketing	26	13	18	20
3.	Transportation	11	6	22	7
4.	Poor working Facilities	4		2	5
5.	Poor storage Facilities	14	4	4	15
6.	High Fish price		4	4	1
7.	High running cost	1	4		2
8.	Conflict with customers		2		6
9.	No credit Facilities	7			1
10.	High Export Taxes	5			1
11.	High Taxes	2	6		
12.	Unstable Press	3	4		1
13.	Conflicts with Fisheries Officials	2		2	1
14.	None	1	2		2
15.	Decrease in amount of fish	6	4		3
16.	Security	7			4
17.	Health Hazards	2			5
18.	Conflicts among colleagues				1
19.	Other				
20.	Lack of Training facilities				
21.	Number of Respondents	149	53	50	148

7.3.1.4 Conclusions

Marketing of fish is still suppressed due to several bottlenecks including marketing infrastructure such as roads and transport, facilities such as cold storage and marketing information and organisation. There is a great potential for expanding fish trade if these obstacles are removed or reduced and hence providing much needed protein sources to a larger population at less cost.

7.4 Consumption

7.4.1 Consumption Pattern

7.4.1.1 Preamble

The purpose of fish production and marketing is that fish will be eventually consumed. The consumers' demand for fish is the case for any commodity, is the ability (income/wealth) and willingness (taste) to pay for the product that is available in the market at different prices. The changes in the price of fish will affect the consumption pattern of individuals and this will affect the production pattern of fish in a positive or negative way depending on the change. Thus, any increase in fish production and marketing should be followed with increase in demand through appropriate income and price policies.

The importance of analysing fish consumption is based on two main aspects. First, fish consumers are markets and hence sources of income for both fishermen and fish traders. Secondly, fish is high quality food that contains as much as 6% first class protein. It is rich in vitamins and also contains variable quantities of fat, calcium, phosphorus and other nutrients important for human health and growth. Fish is a valuable source of protein to many people in Tanzania both in rural and urban areas.

Consumers are willing to respond to price signals because they wish to maximise their utilities from consuming fish. However, in attempting to do so they are constrained by their budget (Heibrover and Thurow, 1981:66). Given these maximisation objective and the constraints facing fish consumer and the importance of consumer demand in influencing fish production and marketing and the overall fisheries development this report includes analysis of consumer demand for fish.

This section analyses characteristics of fish consumers in Tanzania and the subsequent factors (e.g. quality, price, species, processing, type) that influence fish demand. Analysis of consumption from both own sources (Fisher/consumers) and consumers (buying from fishermen and traders) is made.

7.4.1.2 Coverage of Fish Consumer Interviewees

(a) By Place of Residence

Fish consumer households from around the three lakes of Victoria, Tanganyika and Nyasa and from Coastal areas were interviewed. The number and proportion of interviewed consumers by place of residence are presented in the Appendix Tables.

Accordingly, a total of 690 fish consumers were interviewed in seven regions of Tanzania. These regions include Mwanza, Mara, Kigoma, Mbeya, Dar-Es-Salaam, Tanga and Mtwara. The respective share of interviewees from each region ranged between 12.6% (for Tanga) and 14.9% (for Mtwara).

(b) By Sex and Age

Out of 690 interviewed consumers, 366 of them (or 53%) were male and 324 (or 47%) were female. Data from the field survey indicate that people of all ages in the regions covered by

our study eat fish. Although there is concentration of fish consumers in the age groups between 19 to 25 years and 46 to 55 years, there is no evidence, even based on cultural reason, that children (below 18 years) and old people (above 65 years) do not eat because of reasons connected to their age (See Appendix Tables.)

(c) By Level of Education

The information from the survey reveals that both educated and uneducated people eat fish. In general, high education levels as well as illiteracy do not seem to be very influential as to whether one eats or does not eat fish (See Appendix Tables). This is partly because of the fact that in the surveyed areas fish is almost a common or traditional food, which is, consumed by people of all categories regardless their levels of education. However, in Mbeya town which is far away from water bodies that are the sources of fish the differences is obvious regarding the type of fish consumed, that is processed or unprocessed. Educated people have relatively more chance to eat fresh fish in Mbeya town mainly because with salaries they can afford to buy fresh fish from Fresh Food Company.

7.4.1.3 Fish Consumption Patterns

Fish consumption levels are analysed with respect to the amount of fish consumed, type of fish consumed including whether processed or not processed and the frequency of fish consumption.

(a) Amount of Fish Consumed

For each study area the per capita consumption of fish will be computed and compared to the corresponding estimates of between 9 and 11.8 kg of per capita fish consumption, by Bwathondi (1990, p.5). Bwathondi's estimates refer to Lake Victoria. Results from our survey show that the average per capita fish consumption are 73.3 kg for areas around lake Victoria, 76.1 kg for the Coastal area, 38.4 kg for Kigoma town and 68.8 kg for Mbeya town. These estimates are clearly above the estimates by Bwathondi. The high estimates from our survey data may partly be explained by our sample being exclusively in or around fishing communities which have little alternative to fish leading to such high consumption.

(b) Type of Fish Consumed

Tanzania's water bodies are rich in varieties of fish. The differences in availability, prices and tastes, however, have led to some fish species being more consumed in certain areas than in others. The current survey revealed these differences in the types of fish consumed in various places. The differences are also with respect to consumption of processed and unprocessed fish.

Table 17: Types of fish consumed in Tanzania

S/N	Place	1 Type Fish	% Of H/H	2 Type Fish	% Of H/H	3 Type Fish	% Of H/H	Overall	% of H/H
1	Coast Area	Changu	13.9	Kolekole	4.7	Tasi	4.4		
2	L Victoria	Sato	25.3	Sangara	7.0	Kambale	3.8		
3	L Tanganyika	Migebuka	9.3	Kuhe/Ngege	1.5	Nonzi	1.0	Sardines	4.2
4	L Nyasa	Gege	4.4	Mbasa	1.5	Mbelele	0.3		

Source: Field Survey

Fish consumption in Coastal areas and around lake Victoria appears to be dominated by three types of fish, respectively, in each area. For instance, in the Coastal areas the three leading fish types that are mostly consumed are Changu, Kolekole and Tasi. Together the three types constitute about 23% of the fish consumed in the area. In turn more than half of this share (23%) represents consumption of Changu. In areas around Lake Victoria about 36% of fish consumption involves only three fish types namely, Sato, Nile Perch and Kambale. 25.3% or about 70% of the share (36.1%) is the consumption of Sato alone. Thus, clearly Changu and Sato are by far the leading fish being consumed in the Coastal area and areas around Lake Victoria, respectively.

On the other hand the information contained in Table.... show that the dominance in terms of the few types of fish consumed is not very big in areas around Lake Tanganyika. In Kigoma town (along Lake Tanganyika) the three mostly consumed fish, Migebuka, Kuhe and Nonzi constitute less than 12% of the total fish consumed by its residents. Lack of a clear dominance by these three species is partly a result of the existence of numerous fish species that are available and consumed resulting in thinly distributed shares of various consumed fish types. Moreover, in Kigoma town Sardines is relatively more consumed by many people.

In Mbeya town (Near Lake Nyasa) fish consumption is, like for the case of Kigoma town, not dominated by three leading fish type. The share of three fish types, namely, Gege, Mbasa and Mbelele, in total fish consumption is about 6% only. Two possible reasons account for the small share. First, Mbeya town receives many types of fish for domestic consumption from various places including as far as Mwanza along Lake Victoria and from other water bodies like Lake Rukwa, Lake Tanganyika and Mtera dam. Secondly, Lake Nyasa that was supposed to be the main source of fish consumed in Mbeya town offers only small quantities (partly due to primitive fishing technologies) of various types of fish which none of them can dominate the others in terms of supply.

Fish consumption levels also differ with respect to whether fish is or is not processed. Information on preference of processed or unprocessed (fresh) fish is summarized in the following Table below.

Table 18: Consumption of Processed and Unprocessed Fish

S/N	Type of Fish	% of Households			
		First	Second	Third	Not Preferred
1	Fresh Fish	25.5	18.4	15.7	12.8
2	Processed Fish	1.3	3.6	5.8	39.3
3	Sardines	5.5	8.7	8.0	20.3

Source: Field Survey

In general as shown in Table 18 consumers prefer fresh fish than processed fish. About 25% of the surveyed households reported that they preferred fresh fish as a first choice. Taking the first, second and third choices together 60% of the households preferred eating fresh fish while only 12.8% of the households did not prefer eating fresh fish. However, comparatively, consumers residing very near or along the fishing water bodies show higher preference for fresh fish than those who are far away from the sources. The reasons behind this difference include that with long distances from sources fresh fish becomes expensive and sometimes even destroyed (losing taste) due to poor preservation technologies. In this case for instance, in Mbeya town only about 38% of the 84 households noted that they preferred fresh fish as first to third choices, while in Kigoma town 84% of the 100 households revealed that fresh fish was their first to third choices. Likewise 55% of the 200 households in areas around lake Victoria and 58.4% of the 289 households in Coastal areas said that fresh fish was their mostly preferred fish type.

Sardines though commonly used was not the most preferred fish type as it was either the fourth, fifth or sixth preferred fish type. In fact in areas around Lake Victoria Sardines was not preferred by 38% of the 200 surveyed households. In general 20% of the total surveyed households did not prefer Sardines. Sardines are not highly preferred partly because some people regard it as a poor man's food. Poor processing technologies also contribute to the low preference of Sardines. In particular technologies in which Sardines are literally spread on the sand for sun drying contribute to the contamination of such Sardines with sand.

On the other hand however, various consumers revealed they could in future eat more Sardines if the quality of Sardines would be improved through better processing and storage technologies. Increased supply and hence relatively lower prices would encourage them to eat more Sardines in future. Specifically, about 62% of the 98 interviewed consumers in Mbeya town, 70% of the 194 consumers in areas around lake Victoria and close to 70% of 93 consumers in Kigoma town pointed out that they would eat more Sardines in future if those aspects could be dealt with. In addition more than 90% of these consumers said the motivation to eat more Sardines in future is also based on their awareness that Sardines is has high nutritious value.

Processed fish is preferred by only about 10% of the households. About 39% of the surveyed consumer households noted that they do not prefer eating processed fish. Apart from disliking the taste of processed fish it was pointed out that poor technologies, particularly smoking, led to poor quality of the processed fish. This point was strongly expressed by interviewees in areas around Lake Victoria where about 67% of the 200 households said they did not prefer eating dried fish. Likewise about 42% of the 289 fish consumers in the Coastal areas do not prefer processed fish. The corresponding percentages for Mbeya town and Kigoma town are low. In Mbeya town the low percentage is mainly due to the fact that fresh fish are relatively more expensive while in Kigoma town this is partly due to seasonal shortages in the availability of fresh fish and hence high reliance on dry fish and dry Sardines.

Consumers were also asked to give opinion on the quality of fish they were eating.

In general fish consumed was generally rated to be good. About 67% of the interviewed households noted that the quality of fish they were eating was good. However, overall close to 20% of the interviewed households was of the view that the quality of the fish they were consuming was poor. Specifically, a blame for the poor quality was directed at the poor processing and storage technologies used by various small fish traders. In Mbeya (95 consumers) and Kigoma (93 consumers) towns only about 56% of the consumers were

satisfied with the quality of fish compared to 76% of the 193 consumers around lake Victoria and 68% of the 282 consumers in the Coastal areas. In Kigoma town the poor fish quality was attributed to the above poorly processed Sardines while in Mbeya town this was in reference to poorly smoked fish as well as the poor storage technologies.

(c) Fish Consumption Frequency

The majority (99%) of the 689 households involved in the survey answered ‘yes’ to the question as to whether they consume fish. Very few (less than 1%) revealed that they do not consume fish. The few pointed out that they do not eat non-scaled fish purely on religious beliefs. These, however, are too few to influence negatively the overall consumer demand for fish.

Table 19: Fish Consumption by Household Size

S/N	Household size (Number of people)	Number of H/H	%
1	Up to 5 Members	396	57.6
2	6 to 10 Members	258	37.5
3	11 to 15 Members	29	4.2
4	Over 15 Members	5	0.7
	Total	688	100.0

Source: Field Survey

Members of households of all sizes eat fish. However, households with less than 10 members dominate while the extremely large households (with more than 10 members) that consume fish are relatively few. One possible explanation to this phenomenon is that extremely large families are poorer and hence do not afford to buy fish for domestic consumption.

Preference on particular type of fish consumed is also partly mired in the frequency of consuming the concerned fish type. For instance, fresh fish, which, as noted above, is relatively more preferred show, is eaten more frequently than salted and fried fish and Sardines. Out of 587 households that reported to be eating fresh fish, 317 households or more than half (about 56%) said they eating fresh fish at least three times per week.

Only 329 and 305 households reported to be eating salted and fried fish, respectively. In each case more than half (85% of households eating salted fish and 65% of households eating fried fish) of the households were eating these types of fish not more than twice a week. This again confirms the above observation that based on poor quality and bad taste consumers less prefers these types of fish. Sardines that also is not preferred save for its relative easy availability is, like fresh fish, eaten by many (500 households) consumers and almost daily (as reported by about 8% of households). The fact that Sardines can be bought in small quantities makes many households with low income use it almost as a fallback when they can’t afford other sources of protein (See Appendix Tables).

During the survey consumers indicated that they would definitely eat more fish if certain problems facing them could be solved.

Table 20: Main Problems Faced by Consumers when buying Fish as Identified by Households

S/N	Problem	Frequency	%
1	Very Low Income	272	42
2	Very Expensive	110	17
3	Fish Scarcity	58	9
4	Fish Poisoning	13	2
5	Most Fish Exported	8	1
6	Others	38	6
7	None	152	23
	Total	651	100

Source: Field Survey

Out of 651 surveyed households 382 of them or almost two thirds (about 60%) cited their very low income and high price as the most serious problems facing them as fish consumers. In Mbeya and Kigoma towns the cited leading problem was very low income. More than 55% of the 95 consumer respondents in Mbeya and 55% of the 93 consumers in Kigoma, pointed out that low income was the most serious problem constraining them from eating more fish. In areas around lake Victoria the cited leading problem was high prices of fish partly resulting from the high fish demand by fish processing industries in the area.

Partly because of the low income and high prices the value of fish bought per shopping for many consumers is low.

About 84% of the 630 consumers reported the low (not exceeding Tshs 2000) ranges of the value of fish per shopping of fresh fish. On the other hand more than 95% of the 350 consumers, or of the 306 consumers and of the 557 consumers, for salted fish, fried fish and Sardines, respectively, reported the value of their fish shopping to be in the same range. Thus, relatively more consumers (16%) of fresh fish made shopping with values above Tshs 2000 per shopping. The above noted high preference for fresh fish partly explains this phenomenon. In the same way the relatively low (5%) is due to low preference for processed fish and that in terms of quantities more processed fish or Sardines can be bought using the same amount of money which could buy less fresh fish (See Appendix Tables).

There are several sources from which consumers get the fish they consume.

Table 21 : Sources of Fish

S/N	Source	Frequency	%
1	Fishing Ourselves	19	3.0
2	At the Market	504	79.1
3	From Peddler	84	13.2
4	Other	30	4.7
	Total	637	100.0

Source: Field Survey

About 504 consumers or 79% of the 637 interviewees reported that they buy fish from markets while 84 consumers (or 13% of respondents) buy from fish peddlers. Few of them (about 3% only) get fish from own fishing. To reach the markets there are both transport costs and traders profit margins. Thus, where the distances from fish sources to markets are long the consumer prices are high. In addition where fish are transported in small quantities the

consumer prices are also high. Improvement in the transportation system may reduce the high fish prices and hence expand the markets for fish.

As noted above fish consumption is also constrained by low incomes.

Out of the 674 surveyed households 379 (or 56%) of them had incomes ranging between Tshs 20,000 and Tshs 100,000 only per month. For a household eating fish worthy Tshs 2,000 daily it would mean that almost two thirds of its income being spent on fish consumption alone. Given that a household has numerous other competing needs it is unlikely that per month expenditure on fish would be that high. Thus, it is crucially important to raise consumers' incomes for greater demand for fish consumed domestically in the area. In fact our survey revealed that about 72% of the 191 consumer respondents in areas around Lake Victoria noted that if their incomes increases they would also increase fish consumption. The corresponding ratios for Kigoma and Mbeya towns are 83% (of 94 respondents) and 87% (of 100 respondents), respectively. The differences of the ratios for areas around lake Victoria on one hand and for Kigoma and Mbeya on the other is consistent with the above noted factors that hinder more fish consumption in the respective areas.

7.4.1.4. Factors Influencing Fish Consumption

(a) Basic Theory

A consumer's ordinary demand function states that the quantity of a commodity that an individual unit will buy depends on various factors such as commodity prices, prices of other commodities (substitutes or complementary) and income.

- $Q_i = f(P_1, P_2, Y)$
- Where Q_i = Quantity of commodity I demanded
- P_1 = Own price
- P_2 = Prices of other commodities
- Y = Income

The ordinary demand function for any commodity is derived from the analysis of utility maximisation. Given amount of commodities X_1, X_2, \dots, X_n and non-negative prices P_1, P_2, \dots, P_n , the constrained maximisation problem is

$$\begin{aligned} \text{Max } U &= f(X_1, X_2, \dots, X_n) \dots\dots\dots(1) \\ \text{St. } P_1X_1 + P_2X_2 + \dots + P_n X_n &= Y^* \dots\dots\dots(2) \\ X_1, X_2, \dots X_n &> 0. \dots\dots\dots(3) \end{aligned}$$

Where: U = Utility

- $X_1, X_2, \dots X_n$ = Quantities demanded of commodities
- P_1, P_2, \dots, P_n = Prices of commodities
- Y^* = Fixed consumer's income.

Equation (1) is a utility function that states that, the consumer derives utility from consuming n commodities.

Equation (2) is a budget constraint which states that the consumer in purchasing quantities of commodities

X_1, X_2, \dots, X_n cannot exceed his fixed income Y^* .

Equation (3) is a restriction that shows that quantities of commodities are non-negative.

Using a LaGrange we can show that at the point of maximising utility marginal utility divided by price must be the same for all commodities. This ratio gives the rate at which satisfaction would increase if an additional Tshs were spent on a particular commodity.

(b) Data, Models and Estimation Method

Data

Cross-section data, which in our case are primary data that were obtained from the fisher-households survey and the consumer survey, carried in the area covered by this study during the months of April and May 2001. In general fish consumers were categorized according to areas of respective towns in terms of high, middle and low-income areas. The inclusion of people with different levels of income was intended to avoid getting biased answers or results. All towns except Mbeya were areas situated near lakes or along the coastline. The levels and composition of fish consumption in such areas could easily be captured as they are near the sources of fish. Mbeya town is far from water bodies but was chosen because it is the largest and nearest market of fish caught in Lake Nyasa, Lake Rukwa and other water bodies.

The choice of variables

This study uses the Expenditure on fish by Households or Consumers as a dependent variable. The use of Expenditure on fish as dependent variable is preferred on the account that to obtain quantity data it is necessary that the commodity in question does not display too great a variation in quality and variety that is not the case with fish. Fish display great variation in quality and variety.

With regard to independent variables one of them will be Total expenditure (household/consumer) that is used as a proxy for income in cross-section analysis. The use of this proxy is mainly because quite often it is difficult to obtain accurate and reliable income figures from Households surveys.

Another independent variable is the Household size that in most cases greatly determines the quantity of fish to be consumed. Expenditure on alternative sources of protein is also another independent variable.

The other independent variables such as education, fish availability, taste and quality will be captured by dummy variables. For instance Taste may be captured by a dummy variable that may assume the values 1 for Households which originates where fish is traditional food and 0 otherwise. Education may have dummy values of 1 (for educated) and 0 for not educated, while quality may have 1 for good quality and Zero for poor quality and availability may have 1 for regular supply and 0 for non-regular.

Price is not be used in this study because we consider that in cross section analysis prices are equal to all consumers and do not change with time because of the short period considered.

Model

The model to be estimated is specified as follows:-

$$EF = F(TE, HS, AE, ED^*, TS^*, QT^*, AV^*, U)$$

Where EF = Monthly Expenditure on Fish

TE = Monthly Total Expenditure

HS = Household size

AE= Monthly Expenditure on Alternative sources of protein

ED* = Dummy variable for Education

TS* = Dummy variable for Taste

QT* = Dummy variable for Quality

AV* = Dummy variable for Availability

U = Random error Term

A double log form is proposed to be used and hence the specified equation is as follows:

$$\ln EF = a_0 + a_1 \ln TE + a_2 \ln HS + a_3 \ln AE + a_4 ED^* + a_5 TS^* + a_6 QT^* + a_7 AV^* + U$$

Where a_0, a_1, \dots, a_7 are parameters to be estimated and other variables are as earlier defined.

In this study we employ Ordinary Least Squares (OLS) technique to estimate the cross section data.

Hypotheses

The specified equation is used to establish the demand for fish in the areas of our study. Specifically the following hypotheses will be tested.

- (i) Expenditure on fish responds positively to income or total expenditure. The higher the income the greater the amount of fish consumed.
- (ii) Fish consumption is positively related to Households size
- (iii) Fish consumption is positively related to taste
- (iv) Fish consumption is positively related to quality
- (v) Fish consumption is positively related to education
- (vi) Fish consumption is positively related to fish availability.
- (vii) Fish consumption is negatively related to expenditure on alternative sources of protein.

The parameters are the elasticities which will show the responsiveness of changes in fish consumption to changes in the respective independent variable e.g. Total expenditure which is a proxy for income (income elasticities).

7.4.1.5 Analysis and Interpretation of results

(a) Determinants of Demand for fish in Tanzania

$$\text{Ln EF} = 4.685 + 0.388 \text{ lnTE} + 0.130 \text{ lnHS}$$

(7.30) (6.398) (1.147)

$$R^2 = 0.109$$

$$F = 24.033$$

All variables possess the same definition as stated above.

The coefficient of TE (as a proxy for income) is positive as hypothesised. Expenditure elasticity is 0.39 implying that a 10% increase in TE will increase demand for fish for about 3.9%. The estimated expenditure elasticity of 0.39 may be low, however, it closely reflects the nature of our sample that was biased towards urban low income consumers who are likely to have a lower expenditure elasticity for food items like fish.

The policy implication from these results is that fish availability must be increased and also that planners and policy makers should address the factors constraining the demand for fish. Specifically, they must deal with how to increase the incomes of people if domestic consumption of fish is to be increased.

The household size elasticity is found to be 0.130. The low household size elasticity for fish consumption suggests a high degree of substitution of cheaper protein food for more expensive protein food as household size increases. Usually large households tend to spend relatively more on cheap protein food like beans and less on expensive protein like fish.

The low R^2 is not surprising when cross section data is used, because of the great variability that is possible across the individual entities. Thus the degree of fit is not very good as independent variables explain only 33% of the variation in fish expenditure. However, both TE (as a proxy for income) and HS are significant at 5%. Using the F test the overall significance of regression line is 24.033.

The results obtained in this section confirm the earlier observation that income and consumer price of fish are important determinants of the demand for fish in the area of the study. However, these results should be interpreted with caution given the quality of data that also led to the dropping of some variables from the estimated equation.

7.5 Credit and Micro-finance

7.5.1 Preamble

Micro-finance is financial intermediation at the local, which includes credit but also savings and all forms of financial services. It is a local process based in local institutions that collect local resources and reallocate them locally (ERB, 2000:3). Micro-finance should be a key component of any comprehensive anti-poverty strategy. It comes as a powerful anti-poverty instrument broadening the role and impact credit has on economic activity, especially of the poor (UNDP, 1999). Micro-finance can target and can have a profound impact on the

livelihood of the poorest of the poor because it encompasses all types of financial services from deposit mobilisation to savings and credit in poor and destitute areas (Garson, J. 1997, Mwenda, 2001).

Research findings shows that poverty is associated with less education, size of household, whether households grow cash crops or not, lack of credit, unavailability of inputs and equipment, access to other income generating activities etc. Micro-finance addresses financial needs of major sector of Tanzanian population, however, micro-finance is primarily a facilitator rather than creator of underlying economic opportunities that lead to widespread prosperity (TNMFP, February 2001).

Within the rural fishers community as any other rural community there is the basic problem of lack of collateral in obtaining loans from banks. Some banks have tried to simplify collateral attributes and would accept both registered and non registered collateral including, houses with letters of offer from the district land office, houses in villages with supporting letter from Ward Executive Officers, other assets like cars, motor cycles, milling machines etc.

The study looked at the problems and constraints, which are faced by the fisher communities (fisherman, fish processors and fish entrepreneurs) on the accessibility to credit. Increase in income is an important measure of the impact of credit but the association between credit and income is indirect and not direct. Therefore, in analysing the impact of credit one needs to take into consideration other business factors, which also contributes to increase in income. In the case of the fisher communities other business activities performed will also be taken into consideration. All factors being equal beneficiaries of any credit scheme should be able to repay the loan through revenue accrued from their yields or output of the activity that they established by the borrowed money.

7.5.2 Status of Savings and Credit

Savings and credit are services or products offered by formal and informal financial institutions to the society. In the surveyed regions there is great potential for savings in the community but it has not been tapped by the institutions. About 83.3% of the fishers buy fish in cash while 9.4% buy in credit and 29% buy in cash and credit. The picture from the water areas justifies the overall sample situation as follows:

Table 22: Means of buying fish

Water area	Cash	Credit	Cash + credit
Lake Victoria	89.0%	6.2%	4.8%
Lake Nyasa	96.0%	4.0%	0.0%
Lake Tanganyika	60.4%	17.0%	22.6%
Coastal Regions	81.6%	11.6%	6.8%

Source: Survey Data, April 2001

More than 60% of the fisher-folks purchase their fish in cash. Lake Tanganyika fishermen have the highest credit fish purchases (17%). By the virtue that the fisher-folks purchase their fish supply in cash implies that they are liquid and it is possible to mobilise savings in these areas.

In the case of fish processors, 93.3% of the whole sample purchase their equipment in cash while only 1.9% purchase by credit. The table below shows the water area purchase methods.

Table 23: Water area equipment purchase method

Water area	Full cash	Partial cash	Full credit	Partial credit
Lake Victoria	93.1%	5.2%	1.7%	0.0%
Lake Nyasa	96.8%	3.2%	0.0%	0.0%
Lake Tanganyika	89.5%	10.5%	0.0%	0.0%
Coastal Region	90.7%	5.6%	2.8%	0.9%

Source: Survey Data, April 2001

About 90% of the fish processors purchase their equipment in cash while less than 3% of the processors in Lake Victoria and the Coastal Region purchase in full credit.

The fisher-folks have different sources of seed capital for purchasing equipment as seen in Table 24 below.

Table 24: Sources of seed capital for purchasing equipment

Source of seed capital	Frequency	Percentage
Bank loan	1	0.3
Informal Bank loan	9	2.3
Loan from relatives	48	12.0
Loan from friends	19	4.8
Loan from traders	11	2.8
Own savings	220	55.0
Grant from relatives	77	19.3
Grant from others	7	1.8
Loan from relatives + own savings	4	1.0
Own savings + relatives grant	4	1.0

Source: Survey Data, April 2001

Own savings account for 55% while grants from friends and loan from friends account for 19% and 12.3 % respectively. Bank loans are a very small proportion of the source 0.3%. The water area representation on the sources of seed capital is as seen below.

Table 25: Zonal source of seed capital (3 largest)

Water area	1 st	2 nd	3 rd
Lake Victoria	Own savings 64.0%	Grant for relative 20%	Loan from relative 6%
Lake Tanganyika	Own savings 62.3%	Loans from relatives 11.3%	Grant from relatives 9.4%
Lake Nyasa	Own saving 50.3%	Grant from relatives 22.1%	Loans from relatives 11.4%
Coastal Regions	Own saving 54.1%	Grant relatives 19.6%	Loans relatives 14.9%

Source: Survey Data, April 2001

Own savings account for more than 50% as a source of seed capital for purchasing equipment. The process of obtaining loans from the relatives and friends indicate that these folks have an ability to repay the loans advanced to them. However, the grants extended to the fisher-folks perpetuate the syndrome of having funds for free.

Much as the fisherfolk use their own savings in purchasing equipment but they also see the problem of having inadequate sources of capital for their development in the sector. Small/low capital was sited as a problem by 26% of the total interviewed sample.

About 40.3% of the sample indicated that they did not know where to solicit funds and 12.6% indicated the formal financial institutions. The rest indicated that they could solicit funds from friends, relatives' traders and informal financial institutions. This clearly shows that there is a need of imparting knowledge about sources of funds especially from formal and informal institutions, which offer services to the rural areas.

7.5.3.1 Existing institutions providing savings and credit

The following loan providers (individuals, NGOs and institutions) were sited as having access to the rural fisher communities.

Table 26: Loan Provider in the sample areas

Description	Frequency	%	Valid %
Friends	6	0.5	15.0
Relatives	7	0.6	17.5
Employer	2	0.2	5.0
Religious Institutions	1	0.1	2.5
Informal groups	2	0.2	5.0
FINCA International	6	0.5	15.0
Other NGOs	3	0.3	7.5
SWISSAID	1	0.1	2.5
SIDO	3	0.3	7.5
PRIDE	5	0.4	12.5
Neighbour	4	0.4	10.0
N/A	1078	96.4	

Source: Survey Data, April 2001

A small proportion of the sample 3.6% provided information on the loan providers as shown on Table 26 above. This shows that most of the sample areas lack institutions that can provide savings and credit facilities. Friends and relatives still have a major role in providing loans to the fisher-folks. FINCA International and PRIDE are among the few NGOs providing between 12 and 15% of the loans.

7.5.3.2 Formal Financial Institutions

The following are potential and existing financial institutions, which can provide services in the rural areas.

(a) CRDB Bank Limited

In 1996 CRDB was privatised and incorporated as a public limited liability company under the companies ordinance (Cap 212) with over 11,000 shareholders. In resource mobilisation CRDB raises public deposits, which are the main source of funds for the lending and investments. The loan portfolio includes term loans and overdrafts to all categories of borrowers, which include co-operatives and savings and credit co-operative societies (SACCOs).

The CRDB Bank has been dealing with micro-finance credit schemes for more than three years now. Among its successful projects is the "Juhudi Credit Scheme" which has been providing loans in Arusha and Kilimanjaro regions. CRDB plans to start a similar scheme in Tanga. CRDB acts as banker to the SACCOs while the SACCO act as bankers to their members. Another scheme known as the micro-finance project has been implemented on a pilot basis in Mbeya, Iringa, Dodoma, and Morogoro.

(b) The National Micro-finance Bank (NMB)

The National micro-finance Bank was established in 1997 following the restructuring of the National Bank of Commerce (NBC) and its division into two entities The NBC Bank limited and the NMB. The NMB was allocated most of the branches in the rural areas and small branches in the urban areas totaling 95 branches in all. The NMB approach has been to concentrate on preparatory work focusing on staff training since most of the operations and management staff was not conversant with micro-finance. Consequently a major objective was to reorient staff attitudes and practices from commercial banking to micro-finance.

While public deposits with NMB are substantial, amounting to over US \$ 200 million, it has not yet commenced lending operations or activity. It is engaged in business preparation with a business plan, which is awaiting Bank of Tanzania approval. The target group will include individuals, and micro and small enterprises. Only one credit product is envisaged, namely individual loan with minimum loan sizes ranging between Tshs. 50,000 to Tshs.500, 000. Wholesale products are envisaged particularly as regards groups such as SACCOS, SACAs and village Banks. For instance it is envisaged that NMB will act as wholesaler with the SACCOS acting as retailers. NMB lending operations are awaiting the Bank of Tanzania (BoT) Micro Finance Policy and Guidelines. Nevertheless, preparations have been completed for the commencement of operations as soon as Bank of Tanzania approval is granted.

(c) Akiba Commercial Bank (ACB)

The first branch of ACB in Dar es Salaam has established a Bank agency in Manzese, and this Bank agency has initiated micro-finance programmes, which are group based in the solidarity group principle, using the village banking approach.

Each Bank agency facilitates and promotes the formation of core groups whose members have similar saving profiles. Such members are micro entrepreneurs, and their membership of a core group is important since the group contributes to collective security. Each core group has 6 members, while 10 core groups form a micro-finance centre. Each member of a core group has a passbook and makes savings deposits once each week during the weekly meeting, which is held once each week in each centre. The once weekly meetings of each centre have three main objectives: to collect savings, to issue loans/disbursements, and to collect repayments. Such weekly meetings are crucial to ensure group cohesion and maintain stable loan repayments.

ACB expects to establish more Bank Agencies in Dar es Salaam this year (2001): at Kariakoo, Ilala, Buguruni and Temeke. At the same time ACB expects to establish branches in Arusha and Mwanza within the next 5 years. All this envisaged expansion of the branch and agency network is expected to revolve around the micro-finance programme.

7.5.3.2.1 Informal Financial Institutions

(i) *Promotion of Rural Initiative and Development Enterprise (PRIDE) Tanzania*

PRIDE Tanzania was established in 1993 in Arusha as a company limited by guarantee to provide credit to micro and small entrepreneurs in order to promote business growth, enhance income and create employment in Tanzania. PRIDE Tanzania uses a modified Grameen Bank lending model, which is based on solidarity groups. The solidarity groups consist of self-selecting members; group members applying peer pressure and a three-tier loan guarantee

system to ensure loan repayment. Together with weekly meetings; a loan insurance scheme in the form of forced savings in small amounts which are paid weekly and are refundable upon exit. The clients are involved in loan administration through elected leadership, which is responsible for maintaining group cohesion, group discipline, loan appraisal and approval, and ensuring loan repayment.

PRIDE Tanzania approach is to use a loan menu, which has seven loan cycles with small loan amounts ranging from Tshs. 50,000 to Tshs. 2 million, where clients graduate from lower to higher loan cycles. There are 22 branches located in major urban centres, which includes Arusha, Moshi, Tanga, Dar es Salaam, Mwanza, Mbeya, Musoma, Kigoma, Morogoro, Dodoma, Iringa, Shinyanga, Tabora, Singida, Songea and Zanzibar.

(ii) Mennonite Economic Development Associates (MEDA)

MEDA is a financial NGO whose parent organisation is based in Canada. It was established in Tanzania in 1996 to provide micro-credit facilities to micro entrepreneurs lacking access to commercial bank credit facilities. It has branches in Dar es salaam and Mbeya. The main target groups for the MEDA micro-finance programme are women groups, micro entrepreneurs lacking access to commercial bank loans and who also lack collateral assets.

The MEDA strategy is to use the community represented in the groups to provide collateral/guarantees over the micro-credit as well as ensure that the groups identify persons with character guarantees for participation in the micro-loan programmes. The strategy also hinges on compulsory savings amounting to 20% of the loan being deposited as loan insurance. These compulsory deposits also act as savings, which on completion of loan repayment attract interest incentive at 18% per annum, which is called an ‘on-time repayment bonus’. In addition to the compulsory saving, borrowers have opportunities for optional saving amounting to 1% of the loan amount which is intended to help build up the balances for allowing the borrower to take further repeat loans of larger size. The loan amount is a multiple of 5 times of deposits (i.e. compulsory and optional deposits). MEDA has 3 loan products, namely, individual loans, solidarity group loans and poverty lending for income generating activities. Individual loan must have 2 guarantors and voluntary pledging of assets.

(iii) Rotation Savings and Credit Associations (ROSCAs)

These are networks based but addressing different needs of their members. The rules of conduct are more formalised. These associations pool savings from members each period and rotate the resulting pot among them, according to various rules including random drawing. The process is repeated each period until the last member receives the pot. Unlike demand deposits, once the saving is committed, it usually cannot be withdrawn before the member’s scheduled turn, although some groups do allow for an early draw of the pot in an emergency situation.

(iv) Informal moneylenders

Typically, informal moneylenders are approached when the amount of credit required is larger or is needed quicker than can be obtained from friends and neighbours. Moneylenders lend for profit and often charge high interest rates. Rates in the range of 5 to 7 percent per month are uncommon. Moneylenders lend only to households about whom they possess adequate information.

(v) *Lending and borrowing among relatives, friends and neighbours*

Borrowing from socially close lenders is often the first recourse of poor households in financing expenses, especially essential consumption expenditures. Transactions are collateral-free and, these are essentially informal social insurance schemes that have the principle of reciprocity at the core of the transactions. Hence, both the lender and the borrower gain from the transaction, and the process is self-sustaining. The borrower is able to finance urgently needed expenditures quickly and with few transaction costs. The lender gains a right to reciprocity that he can lay claim to in the future. Further risk of the loan not being recovered is minimal because the lender only lends to persons who are part of his or her social network, within which contracts can be enforced.

7.5.3.3 Type of savings and credit services

Savings account

This is an interest bearing account. There is a one-time fee that is charged for opening an account, therefore, the customer does not have to pay any other charges in operating the account. Withdrawal of amounts below a set limit can be done on a set frequency currently. Any amounts in excess of the limit require specified time notice.

Current account

This is a cheque account that normally does not earn interest. It is not very favourable for rural individuals. This account also has monthly service charges.

The following tables show the number of members who have savings and current account in the sample areas

Table 27: Family members with Current account

Number of members	Frequency	Percentage
None	626	97.2
1	10	1.6
2	8	1.2

Source: Survey Data, April 2001

More than 95% fisher folks do not own a current account.

Table 28: Family members with Savings account

Number of members	Frequency	Percentage
0	608	90.2
1	56	8.3
2	8	1.2
3	1	0.1
5	1	0.1

Source: Survey Data, April 2001

90% of the fisher folks do not own a savings account while 8% of the survey show one member of the household own a savings account. This situation gives a clear picture on the lack of formal and informal savings and credit services in the rural areas.

Table 29: Last Month Savings

Amount	Frequency	Percentage
0	718	65.0
up to - 10,000	194	17.6
10,001 - 20,000	73	6.6
20,001 - 50,000	59	5.3
50,001 - 100,000	33	3.0
100,001 - 300,000	17	1.5
over 300,000	10	1.0
Total	1104	

Source: Survey Data, April 2001

About 65.0% of the surveyed fisher folks did not have any savings last month, while about 18% had savings of up to 10,000/= . Some members had savings above 300,000/= (9%). Nevertheless there is potential for savings because 35% of the respondents were saving up to 300,000/= . If these folks were sensitised and given knowledge on the importance and benefits of proper saving that is with interest there will positively be a difference.

Table 7.10 shows the members who have obtained a loan in the last 12 months

Table 30: Members who have obtained loans

Members	Frequency	Percentage
Yes	47	4.3
No	1047	95.7

Source: Survey Data, April 2001

Less than 5% of the fisher folks interviewed have received loans in the last 12 months. This is another justification for the lack of savings and credit services in the surveyed areas.

7.5.3.4 Methods of Lending

Pressure groups approach

In these groups individuals are given loans based on group guarantee reinforced by weekly loan insurance contributions. Groups are involved in loan appraisal and members are self-selected. The group constitutes five members. Its lending activities are managed through peer monitoring and joint liability. Loans are provided mainly for productive activities.

Individual

These are loans given to individuals after they have satisfied the conditions that prevail such as having guarantors, assets for collateral and having a proportion of savings in the account as insurance.

In kind

Loans in kind are mainly provided by trader or owners of fishing vessels (Dhows, canoes, boats etc.). They give credit to the fisherman in the form of for example a set of fishing gear such as nets, hooks, diving gear and in return the fisherman is conditioned to sell all the catch to the loaner at the price dictated by him. In another case the fisherman have to deliver all the catch to the loaner and is given some small portion of the catch for consumption until the loan is finished.

Village banking

This is a financial service model that enables the poor community to establish their own credit and savings associations or village banks (UNIFEM: 1996). The sponsoring agent makes one

loan to the village bank, which then makes individual loans to its members. The bank guarantees these loans and relies on peer pressure and peer support among members to ensure repayment

Solidarity groups

Just like the Grameen and Latin America methodology the group constitutes five members. Its lending activities are managed through peer monitoring and joint liability. Trained field workers give the members of a group orientation from the bank prior to the commencement of any financial activity. Loans are provided only for productive activities.

Guarantee system (using guarantors)

This is a system whereby an individual acts as a guarantor to another person who requires a loan. The guarantor has to be someone who is known in the society, has assets and he has to declare 125% of the value of the loan as a guarantee for repayment.. This transaction is done at the court according to the law.

7.5.4 Loan Repayment Performance

Documents for loan repayment were not easily obtained but during interviews to SIDO officials in Lindi and Mtwara two observations were made.

- In Lindi Region the SIDO management is well organised and cooperates with the Regional Fisheries Department in understanding the behaviour of the fisher-folks and their developmental requirements. The SIDO officials hold training sessions for the villagers conducted by experts from SIDO and elsewhere. They mostly use colleges for assistance such as Moshi Cooperative College.
- In Mtwara Region the SIDO officials declared that they do not lend money to fisher-folks because they do not repay their loans. The Mtwara SIDO is more on lending as a business than for developmental purposes.

7.5.5 Potential for Credit supply

In general it can be stated that there is high potential for savings mobilisation from small savers in urban and rural areas. What is required is to sensitise the clients, have simple procedures and convenience.

From the total sample 66.5% declared that credit availability was a major problem. This is a large proportion of people who have difficulty in obtaining credit therefore; there is great potential of clients for the credit market.

Most of the fisher-folks (73.6%) were of the opinion that there is a need of the formation of cooperative credit and savings society. Some 12.8% of the sample thought that formation of these savings and credit societies would make credit easily accessible

Looking form the gender perspective 68.2% and 43.6% of male and female surveyed fisher-folks saw credit facilities as a problem in their development path.

The opinion on the question “is credit facility a problem” from the different water areas is shown on the table below:

Table 31: Water region and the credit facility problem

Water region	Credit		Total
	NO	YES	
Lake Victoria	235 45.7%	279 54.3%	514
Coastal Region	105 28.2%	267 71.8%	372
Lake Tanganyika	7 9.3%	68 90.7%	75
Lake Nyasa	26 17.1%	126 82.9%	152
Total	373 33.5%	740 66.5%	1113

Source: Survey Data, April 2001

It was observed in all four water regions that credit was a problem the highest was in Lake Tanganyika (90.7%) and the lowest in Lake Victoria (54.3%).

Of the three major problems facing the fisher-folks in the different study areas small/low capital took the lead as seen in Table 32 below.

Table 32: Three major problems for the fisher folks

Water Bodies	1 st	2 nd	3 rd
Lake Victoria	Marketing 22.8%	Small/low capital 13.1%	Transport 11.0%
Lake Tanganyika	Small/low capital 49.0%	Marketing 9.4%	Transport 5.7%
Lake Nyasa	Small/low capital 42.0%	Transport 22.0%	Marketing 18.0%
Coastal Regions	Small/low capital. 23.0%	Marketing 14.9%	Rotting Fish 8.1%

Source: Survey Data, April 2001

Low capital was ranked as the first problem in Lakes Victoria and Nyasa and the Coastal Regions while for Lake Victoria it was ranked second. Other problems were marketing, transport and wastage/loss. Lack of capital can be circumvented by availability of credit facilities therefore, these areas have great potential for credit.

7.5.6 Problems or Constraints

Problems

Lack of formal financial institutions

In most areas visited especially in Kigombe, Kunduchi, Katonga, Kipili, Kyela, Bangwe and Mlingotini villages there is no formal or informal institution that takes the role of facilitating the provision of credit and savings mobilisation to/from the fisherfolk.

Cheating

There is a lot of cheating activities that are targeted to the fisherfolk by the buying agents, traders, auction master, and big firms. The cheating is done through fiddling with the weighing scales; the weight that is declared is almost half the actual weight of the fish. The practice is flourishing because the buyers use their own weighing scales. As most fisher folks do not have storage facilities they do not have a strong bargaining power with the buyers. They have to succumb to the weight that is proclaimed by the buyers.

Inadequate grace period

The grace period given to the fisherfolk in areas where there are credit facilities is very short. This does not give the folks time to turn over the capital and obtain a profit to enable them repay their instalments. Some financial institutions declare that a grace period of one month for most projects enables the client to be committed as soon as the loan is issued rather than extending the grace period, which sometimes make clients to diverge using funds for other purposes.

Box 7.1

Ismail Abdallah Tukonge a fish processor in Mtwara related the difficult and unrealistic conditions that the loans are extended to them. He observes that the grace periods for paying the loans are very short. If you are given a loan on Monday you are supposed to start repaying on Saturday. This results in most of the people using the same credit money to repay the loan before generating any income.

Modalities of credit delivery

In other areas the procedures of obtaining the credit consumes part of the loan. For example a group of five women in Kigombe village received a loan of 50,000/= which they had to travel to Muheza District Council for collection. They had to pay for their bus fare which is 1000/= and they had to open an account at the Bank there. This implied that the five women no longer had the 10,000/= each as a loan because of the expenditures involved. The repayment procedure required them to start paying a week after they had received the loan. The perception that they have been given a loan of 10,000/= but actually had less than that and still had to pay for 10,000/= is a demoralising factor.

Box 7.2

One Saidi Mohamed Chalachala of Mtwara Region who is a retired NBC officer told the researchers that there is a lot of red tape and bureaucracy in delivering loans. He explained that for a 100,000/= loan you have to pay 20,000/= as contribution to the loan insurance fund and 5,000/= for training and stationary. This result receiving less money than what you have on paper as the loan.

Loan size

As stated above the loan size of 10,000/= was seen by many fisherfolk as being on the low side. For a case of the women in Kigombe village who fish along the shore for Sardines and a mix of any other small fish a loan of 10,000/= may only enable them to purchase fishing net and a few items for processing the catch. In the case of the fishermen who use the fishing vessels it is even worse because it cannot suffice for their requirements. Table below shows the loan amounts from the sample areas.

Table 33: Loan Amount

Loan Amount	Frequency	%	Valid %
0 – 10,000	7	0.6	17.1
10,001 – 50,000	21	1.9	51.2
50,001 – 100,000	7	0.6	17.1
100,001 – 250,000	3	0.3	7.3
250,001 – 500,000	2	0.2	4.9
500,001 – 750,000	2	0.1	2.4
Total	41	3.7	
Non Applicable	1077	96.3	

Source: Survey Data, April 2001

From the sample 96% was non-applicable. The rest of the sample 51% received loans between 10,001 to 50,000 while 17.1% received loans less than 10,000/= and between 50,001 – 100,000. For a fisher folk who require purchasing an engine in order to fish in the high waters these amounts are not adequate at all.

Income/earnings

The income that the fisherfolk receive is very low and this is mainly because most of them especially in the coastal belt do not have adequate fishing gear and equipment that enables them to go to the high waters and obtain high yields. By fishing along the coastline they obtain a small catch, which does they cannot sell for much considering that they have to save some catch for domestic consumption.

Mobility of fisher folks

Most fisherfolk move from one area to another depending on the winds and season for the kind of fish they want to catch. This is in a way a problem for their weekly credit payments and also savings mobilisation because of their mobility.

Grant attitude

SIDO Mtwara experiences great difficulties in recovering loans extended to fisher folks because of their attitude which makes them refer to the grants extended by SWISSAID some time ago and they equate them with the SIDO loans and therefore do not see the necessity of paying the loans.

Illiteracy of clients

Most clients especially of rural areas have low education such that it is difficult for them to keep records of their projects. While most clients know the importance of credit, most of them cannot understand fully the importance of savings.

Lack of reliable collateral

For individual loans, which need collateral, there is uncertainty of loan recovery if the default arise. This is due to flexibility in accepting collateral in order to enable clients acquiring financial services.

Lack of credit in terms of accessibility, amount and conditionalities attached to it

In most fishing communities visited in Kagera Region, with an exceptional of MIWISO in Musoma Urban, Mara and USUMAU in Ukerewe, Mwanza, savings and credit were lacking making it difficult for the fisherfolk to have starting capital to invest seriously in their business. To make matters worse, even where savings and credit facilities existed, the conditionalities and strings attached to the loans were too difficult for the smaller fishermen, who were the majority to afford. The situation therefore did not encourage fishermen to expand their business into modern ventures due to the lack of sufficient capital for the same.

Low capital

Most artisanal fishermen were also of the opinion that they were using very low and outdated fishing technology and hence very low catches because of lack of sufficient seed money or starting capital. On top of their general poverty levels, they also said there were no credit facilities to which they could apply for reasonable amounts of working capital. To that effect some stakeholders especially Women Groups e.g. Tweyambe have initiated their own credit schemes based on the Grameen Bank and SACCOS principles. Even here however contributions by members is very low/little.

7.5.7 Emerging issues

Evidence shows that there is lack of savings and credit facilities in most of the surveyed areas. Where the facility exists it caters for less than 5% of the sampled population. The following are some of the emerging issues cited:

Formation and savings and credit groups

The fisher folk were all positive on the formation of such institutions. In fact some fishing communities have formed multipurpose co-operative societies or credit organisations (Mkendo Wavuvi Samaki in Musoma, MUSIWO, USAMAU Savings and Credit Co-operative Society LTD in Ukerewe.

There was also consensus on the need of the formation of co-operative societies by all stakeholders involved. Some groups of stakeholders have in fact formed the same e.g. USUMAU in Ukerewe, Tweyambe in Muleba, etc.

Ability of to save

The fisher folks have been seen to have the ability and potential to save what is required is proper sensitisation and mobilisation of this untapped resource for the developmental benefit of the fisher folks.

Institutions providing Savings and Credit services

In order to provide economic benefits for the rural communities the formation of savings and credit services is a necessity. The service providers have to be able to provide the following:

- Receive savings and make available credit to members
- Accumulate capital of its own and manage the operations so as to ascertain the viability and independence of the society
- Promote thrift and savings habit
- Promote economic planning and assist members to achieve a sound development of their enterprises and economic activities

Of late there has been a change in the direction of micro-finance whereby the Government, NGOs, some Banks and individual projects have taken up the initiation and facilitation of this great task. Institutions such as Savings and Credit Co-operative Societies (SACCOS), Savings and Credits Association (SACAs), CRDB, PRIDE, and others have asserted on the group lending concept which has been widely adopted as a way to transfer screening and enforcement functions, costs and risk.

In Lindi Region SIDO obtains funds for offering credit from the following NGOs and institutions namely, Tanzania Gatsby Trust (TGT), National Income Generation Programme (NIGP), Regional Revolving Fund (RRF), Donors, Small Enterprise Loan Facility (SELF),

National Entrepreneur Development Fund (NEDF) and through Parliamentary budget. The lending method used is group lending.

Expression of interest

In areas where there is no micro-finance the community members have expressed great interest in being part of this initiative.

Box 7.3

In Kigombe village one member declared that if there were a possibility of obtaining credit facilities it would definitely change his life. He is a trader and needs some funds to purchase a deep freezer and a generator to enable him store his produce without any fear of having losses or quality deterioration. He sells his products in Morogoro, Arusha, Dodoma, Mbeya and Iringa regions. This indicates that individuals have a clear focus of what they want but are constrained by lack of resources to achieve their targets.

Establishment of groups

In most areas visited the members of the communities have already formed groups (some formal while others are informal) and they work collectively. Most of the fishermen go to sea in-groups and they share/distribute their income in the collective way. The voluntary formation of groups whose members have a shared goal and have common characteristic, which bind them together is a starting point for formal and informal institutions to facilitate the availability of micro-finance services.

Capacity building

Training in micro-finance is needed for clients and service providers. Clients would need among others, training about record keeping, importance of savings and management of projects. As the industry is fairly new, most of the service providers are not fully qualified. It is important to boost the efficiency of the staff.

7.5.8 Conclusions

Attitude on credit

One major problem facing small-scale entrepreneur's' credit schemes in Tanzania is their attitude and perception towards credit. As pointed out by Monji et. al (1997), having lived through a period where the policy of the government and many other credit support programmes was to provide grants to the small-scale entrepreneurs, the concept of credit which requires repayment of loans on commercial basis is not popular among Tanzanians. It is a new concept and not widely understood in the country, particularly among rural communities. The misconception and predominance of undesirable attitudes in the country is the result of the 'cheap credit era' where money was more or less given as interest free loans.

Micro-financial institutions

There is widespread shortage of reliable finance to undertake economic investments and steady growth and poverty eradication in the rural areas. Micro-finance if extended to the rural poor has great impact on their livelihoods. However, most of the communities are not aware where to solicit funds, this requires imparting knowledge on the alternatives available.

Savings versus credit

Funds disbursed for credit to members in micro-finance are not adequate to meet their demands.

Saving ability

There are sufficient resources that can be tapped as savings through proper mobilisation and sensitisation. Through sensitisation there is great possibility for future sustainability because communities will be owners of the initiatives.

Loan size

The loan size extended to most of the fisher folks interviewed is inadequate to tackle their problems.

Loan repayment period

The loan repayment period is considered short and leads to loan recipients repaying with the same loan money before using for productive activities.

7.5.9 Suggestions and Recommendations

Promote savings mobilisation

Purposeful efforts should be taken to sensitise the fisher communities on the importance of savings. Communities should be made to understand that savings mobilisation from internal sources is the most and only dependable means to expand the capital base from which loans will be secured.

Emphasis on training

There should be adequate resources to sensitise and train clients in order to transform their attitudes in favour of savings, on record keeping for projects, understanding the savings and credit relationship

Transport and storage logistics

Fisher folks sometimes are forced to sell their product at give away price because they lack knowledge of which product, for which market, for what time and which customer to sell. It is recommended that:

- There is a need of facilitating availability of market information and
- Facilitating the building capacity in marketing.

Group lending

The group lending is recommended as a starting point as some are have groups already it is a convenient and effective entry point. It is appropriate to disburse loans through groups in order to take advantage of peer pressure, which exists among members and acts as collateral.

Loan size

The size of loan given should be sufficient for the procurement of the equipment, as the fishing equipment are expensive the group lending method will hold water here because the loan will be extended to a group and repayment will be group wise.

7.6 Poverty Analysis

7.6.1 Characterisation of Poverty

According to the Country population Assessment Report (UNFPA/URT 2001:8) the main development challenge facing Tanzania which all efforts aim at addressing is the widespread and persistent poverty amongst its people where half of the population live below the basic needs poverty line. Accordingly the said poverty in the country is characterised by, amongst other things:

- a) low income
- b) high mortality and morbidity
- c) poor nutritional status
- d) low educational level/attainment
- e) vulnerability to external shocks
- f) Exclusion from economic, social and political processes.

The said poverty is also said to be widespread in the rural areas and a significant portion in urban areas as well as being gender specific with more women being affected than male counterparts.

It is thus behind this background that the Government of the United Republic of Tanzania has drawn the National Poverty Eradication Strategy (URT 1998) enumerating a number of arrears/sectors to be addressed in order to at least reduce the level of poverty by the year 2025.

Although disagreements abound as to what constitutes poverty, its causes and the yardstick to measure it on the part of researchers, politicians and developmentalists in general, there is however consensus and indeed agreement on the fact that Poverty is one of the most serious and devastating social problems in all countries the world over and that the situation is even much more worse for countries of the South such as Tanzania.

The above pointed disagreement on what constitutes poverty and various forms it takes has been a function of the dichotomy around three areas of controversy (Musoke 1994:71):

- a) Absolute versus Relative Poverty
- b) Material versus Multiple deprivation, and
- c) Inequality versus Poverty.

Most if not all, contemporary studies on poverty and poverty alleviation have mainly been informed and guided by one or a combination of these dichotomies either in support or rejection of any of the said perspectives.

In this study, the concept “*poverty*” is used to describe a situation or condition in which the people involved live below certain socially accepted standards of living in terms of the material artifacts of life as well as other non-material facets including inadequate educational opportunities, unpleasant working conditions, powerlessness and even more bankruptcy and all other things which are not necessarily directly linked to the individuals income but which are necessary and important for the individuals or social groups livelihood and well-being and, hence, a socially acceptable health and decent life.

The basic assumption guiding this presentation is that Poverty is a social malaise which every right-minded person, government and other institutions would like to eradicate because of the negative impacts it has on both individuals and social groups in society (Musoke 2000: 13):

Poverty means more than simply that the poor people are living less than those of average income. It means that poor people are often hungry, malnourished, it means deprivation, lack of access to basic social services including safe water, energy and power, health facilities, sound sanitation, clothing and being exposed to rats, cockroaches and other vermin. It means being embarrassed about the few ragged clothes that one has to wear, it means greater susceptibility to emotional disturbances, alcoholism, and drug abuse, victimisation by criminals as well as having shortened life expectancy. It also means slum housing, unstable marriages, exposure to higher levels of water and air pollution as well as high rates of malnutrition and disease – poverty is indeed the cause and/or explanation of most other social problems.

In this study, an attempt is made towards a dynamic and seemingly radical paradigm towards the understanding and subsequent eradication or at least reduction of poverty amongst fishing communities in Tanzania. It is also asserted that such a study should be guided by the following considerations (Musoke 1994 op.cit.78-81):

1. That “*Poverty*” is multi-dimensional and cannot be studied and understood only in “*this*” or “*that*” dichotomy alone. It is both “*absolute*” and “*relative*”, material and multiple, and is also interlocked and linked with “inequality” and with politics.
2. That Poverty is also spatially and time specific.
3. That Poverty level and what constitutes poverty very much depends on, and is determined by the level of development of a particular country.
4. That Poverty operates at many different dimensions other than material or economic dimension, It also has political, social, cultural, ethical and moral dimensions.
5. That Poverty operates at different levels: starting with the individual, then the household, the local community, and subsequently to the national and international levels and that what happens at higher level has very far-reaching ramifications for the level below it.
6. That any serious discussion or analysis of poverty alleviation in fishing communities in Tanzania has to be placed within a historical context of how, over time, the country’s fisheries resources have been appropriated and/or distributed.
7. At the national level, any serious study/analysis of poverty and poverty alleviation has to be placed within the context of the various development models and strategies currently at work including economic liberalisation and/or privatisation as per Structural Adjustment Programme (SAPs) and Globalisation.
8. That a more meaningful discussion of all efforts to alleviate poverty has also to answer the question of who or what institutions are best placed to do so.
9. To any conceptualisation of poverty is both “*objective*” and “*subjective*”.
10. That a dynamic conceptualisation of poverty has also to be radical. It has to go beyond basic human needs and material subsistence requirements, to human development indicators as developed by the UNDP (1989). It also to be based on Basic Human Rights. In this way basic human needs, without which one is said to be poor should include freedom of speech and assembly, the right to organise, access to information, freedom from arbitrary arrest and detention, access to employment and major sources of livelihood as well as the right to life.

11. While it is true that any definition of poverty will depend very much on the aspect of poverty that the individual researcher is interested in, it is important to note that the starting point is definitely some level of basic needs including food, clothing and shelter without which one can not survive. After isolating or identifying the material subsistence needs, then one society at the respective time, the country's level of development, its politics and ideology and cultural values. In this way it is important to make a hierarchy of basic needs and draw up priorities according to some agreed Hierarchy of Needs (Maslow's Hierarchy of Needs, 1962).
12. That any meaningful and comprehensive approach/paradigm to the study of poverty and poverty alleviation has to eschew crude, rigid and mechanistic economic determinism. It has to be sociological, and in that regard Marx Weber's classification of what is valued, and which is the basis of social differentiation in any given society or community—economy/class, status and power.
13. Lastly but very crucial and important is that any such study and analysis should mainstream gender in all steps and measures taken to redress the situation.

7.6.2 Measurement of Poverty

Poverty is a multi-dimensional concept and as pointed above it is difficult to define it uniquely. Indeed there are various views on what it means to be poor. Even within the particular concept of poverty, there are still likely to be important differences in how it is measured. The most commonly used definition addresses the income dimension of poverty. Income is taken to be a relevant welfare indicator. This approach defines poverty as the inability to attain a minimum standard of living. Thus, conventionally poverty is measured by income (or expenditure) level that can sustain a bare minimum standard of living.

Practically, individuals are not very contented to discuss their income but are more comfortable to discuss how much they spend for a day, week or month. We intend to use the expenditure method when looking at the incidence of poverty

Poverty can be measured in absolute or relative terms. *Absolute poverty* refers to the position of an individual or household in relation to a poverty line whose real value is fixed overtime. It is captured in the income (expenditure) related definition provided above. Anyone who is absolute poor cannot attain what is considered to be the minimum requirements of life. *Relative poverty* is an arbitrary concept. It refers to the position of an individual or household compared with the average income in the country such as a poverty line set at one-half of the mean of income.

Although the limitations of such approach of the measurement of poverty are now widely recognised, it continues to be used in general by economists. This seems acceptable partly because income is a major determinant of poverty, as long as non-economic aspects of poverty are also recognised.

7.6.2.1 Measurement of Incidence and Distribution of Poverty

Using the primary data collected our households total expenditures and adult equivalence (using the adult equivalence scale from NBS, 2000) estimates of adult equivalence household expenditure (in Tshs) have been made as shown in the following Table.

Table 35: Yearly Expenditure of Households by location

Place	Per capita Household Expenditure (in Tshs)	Adult Equivalent Household Expenditure (in Tshs)
Overall	27,439.77	33,280.65
Lake Victoria	25,641.65	32,778.81
Coastal Region	18,551.34	22,087.1
Lake Nyasa	20,862.34	25,056.26
Lake Tanganyika	73,746.78	92,598.86

Source: Computed using Field Data (2001)

The need to adjust expenditure to the person's age arises because children and old people consume less than working adult. This allows ranking of the population in terms of levels of expenditure and determine their position relative to the poverty line.

With the estimates of adult equivalent household expenditure we further measure poverty using the following poverty indices (suggested by Foster, Greer and Thorbecke (FGT), 1984):

- (i) Head Count Index (P_0): This shows the proportion of the population defined as being poor, that is, those whose measured standard of living is less than the poverty line. It is the proportion of people living in households where total expenditure per adult is below the poverty line. This index gives us the proportion of the poor but not the depth of their poverty.
- (ii) Poverty index gap (P_1) that is a measure of the depth of poverty. It measures the average percentage shortfall of total expenditure of households below the poverty line. The measure, however, do not tell us anything about how that poverty might be distributed among individuals.
- (iii) Poverty severity index (P_2) that is sometimes called squared poverty gap index. It is the average value of the square of the depth of poverty for each individual. The value of P_2 is therefore greater for distribution s where more people are in severe poverty.

The FGT formula for computing the P_0 , P_1 , and P_2 is expressed as follows:

$$P_x = 1/n \sum_{i=1}^q ((z - y_i)/z)^\alpha \text{ for } \alpha \geq 0$$

where n = is the population

q = the number of people deemed poor

z = the poverty line

y_i = the expenditure of the i -th individual

The DAD 3.0 programme is used for computation.

Table36: Extent of Poverty in Areas of Study

Place	Share of Population with Adjusted Adult Equivalent Expenditure Below Poverty line	Depth of Poverty (P ₁)	Severity of Poverty (P ₂)
Overall	20.8%	5%	13.9
Lake Victoria	20%	59%	18.1
Coastal Region	22.2%	38%	4.2
Lake Nyasa	21.4%	46%	3.8
Lake Tanganyika	16.2%	N/A	37.9

Source: Field Survey

The information contained in the above Table must be interpreted with great caution because of the difficulty of arriving at reasonable expenditures by rural households that rarely keep accurate information of their expenditures. The calculated poverty indices are, therefore, only indicative of the extent of poverty in the areas.

According to the above Table poverty is found in all the surveyed areas. The range of calculated poverty indices is from 16.2% and 22.2%. These percentages indicate the proportion of the poor in the respective areas. To a large extent the differences in the proportions arise from the quality of information obtained. For instance income figures elsewhere in this study show that people in Lake Victoria areas are less poor than those around lake Tanganyika. The final sample used for the calculation of the index for lake Tanganyika, in the above Table, were biased towards few relatively rich people and hence the result of only, relatively, few poor in the area.

The last column of the Table measures the severity of poverty. The depth of poverty measures the level of expenditure required to bring the expenditure of the poor (in adult equivalent terms) up to the poverty line. Thus, to bring the households, in the area of study, up to the poverty line would require supplementation equivalent to 14 percent of the poverty line expenditure. The actual indices for individual places may not be that accurate as explained above but they certainly point that in all areas some expenditure need to be made so as to bring the poor up to the poverty line.

7.6.3 Poverty Status

Data and information obtained from field survey including the village inventories, checklist administered to various NGOs, CBOs and several officials and members of the various stakeholders, secondary sources and personal observations by the research team so far attests to the following state of affairs. Note that these are tentative awaiting the analysed data from the various research instruments.

The substantive findings from our research include the following though not necessarily in that order.

7.6.3.1 That Tanzania (mainland) is endowed or blessed with a lot of marine/fisheries resources as characterised by the abundance of various species of fish. The major species include Nile Perch, Sardines, Tilapia, Changu, Migebuka, Tasi, Kolekole, Mbasi, Prawns, Lobsters, KingFish, etc.

The said fisheries/resources especially certain species including Prawns, Lobsters, Tilapia, Nile Perch, Ornamental fish-species as well as several fisheries by products have very good market potentials both domestically, the sub-Saharan African region (Kenya, Uganda, Sudan, Democratic Republic of the Congo, Zambia Malawi and as far as the Central African Republic and Chad as well as Europe and Japan).

7.6.3.2 That for a long time now a substantial number of local Fisher folk and members of the riparian communities surrounding the said marine resources have actively participated in the exploitation of those resources or actively engaged, albeit at different levels, in several activities related to the country's marine and/or fisheries resources. Table 37 indicates the duration in which respondents in fishing.

Table 37: Percentage distribution of respondents in fishing activities (N =1118)

Duration	Percentage
< 10 years	58
Up to 15 years	16
Up to 20 years	13
Up to 30 years	7
> 30 years	6

The levels of participation varies from zone to zone, region to region and district to district with the Lake Victoria and Tanganyika as well Indian Ocean zones depicting the highest level of participation and fisheries related businesses and activities compared to the Lake Nyasa and Rukwa area.

7.6.3.3 That a number of women are also engaged in the exploitation of economic opportunities resulting from the fisheries/marine sector. Thus out of the 1118 sample, 80 were women. The low level of women participation in fishing and fish related activities can be partly explained by the predominance of patriarchal ideology and economic powerlessness

7.6.3.4 That despite being surrounded by and their active participation in the exploitation of the very rich marine/fisheries resources around them and such other related resources, the lives and living standards of most members of the riparian and fishing communities as well as others engaged in activities related to the fisheries sector in the country continue to be defined and/or characterised by object poverty, squalor, destitution and, above all, total marginalization from the mainstream of the nation's economic, social and even political activities as well as human misery. Their poverty or economic deprivation is reflected through the following :

(a) Low level of Income: For instance information from the research team attests to the fact that some fishing labourers or fishermen receive less than Tshs. 1000.00 in some months.

In order to find out how much a household earned per month from fishing, respondents were asked to mention their average income. Table 38 presents their responses by monthly household income from fishing and by water region.

Table 38: Percentage distribution of respondents' responses by monthly household income from fishing only and water region (N = 1056)

Monthly household income from fishing only	Water Region				Total
	Lake Victoria	Coastal region	Lake Tanganyika	Lake Nyasa	
Less than 10,000.00	77 (16.7)	35 (9.5)	-	7 (4.7)	119 (11.3)
11,000.00 - 20,000.00	87 (18.8)	38 (10.3)	-	17 (11.3)	142 (13.4)
21,000.00 - 30,000.00	90 (19.5)	49 (13.3)	4 (5.3)	35 (23.3)	178 (16.9)
31,000.00 - 60,000.00	119 (25.8)	129 (35.0)	16 (21.3)	30 (20.0)	294 (27.8)
61,000.00 - 100,000.00	47 (10.2)	72 (19.5)	21 (28.0)	24 (16.0)	164 (15.5)
101,000.00 - 150,000.00	17 (3.7)	37 (10.0)	11 (14.7)	15 (10.0)	80 (7.6)
151,000.00 - 200,000.00	10 (2.2)	7 (1.9)	9 (12.0)	14 (9.3)	40 (3.8)
201,000.00 - 300,000.00	6 (1.3)	1 (0.3)	5 (6.7)	5 (3.3)	17 (1.6)
301,000.00 - 50,000.00	4 (0.9)	-	8 (10.7)	3 (2.0)	15 (1.4)
Above 501,000.00	5 (1.1)	-	1 (1.3)	-	6 (0.6)
Reluctant to divulge	-	1 (0.3)	-	-	1 (0.1)
Total	462 (100.0)	369 (100.0)	75 (100.0)	150 (100.0)	1056 (100.0)

Source: Interview with fishing communities along Lakes Victoria, Tanganyika, Nyasa and Indian Ocean, 2001

As indicated in table 38, there is still a significant number of respondents (119 or 11.3 percent) who earn less than Tshs. 10,000.00 a month. Very few of them 38 or 3.6 percent earn more than Tshs. 201,000.00 per month. And only 6 or 6 percent earn above Tshs. 501,000.00. The group is led by those in Tshs. 31,000.00 - 60,000.00 income bracket (294 or 27.8 percent, then those in the Tshs. 21,000.00 - 30,000.00 income bracket (178 or 16.7 percent. Cross regional variations are clearly indicated in the table.

The research assistant in the Lake Victoria Zone (Kagera region) for instance, quotes an example of two fishing labourers at Kinagi who received just Tshs. 140.00 at the end of a working month from their employer, a certain big fisherman/processing industrialist (name withheld). In Kyela however we are also given a story of very low income accrued from fishing due to the fact that the so-called fishermen just catch one or two fishes either for home consumption and/or sale for a few cents or shillings.

(b) Possession or ownership of very few basic household items:

This seems to be the general finding by all research teams. Most fishermen are basically migrants. Some sleep on the ground/mats with not what seems to be the semblance of a bed. They have and/or wear few ragged clothes and very few household items such as cooking pots, plates, cups leave above luxuries such as simple tables and chairs. Most of them of course eat at food stalls (Mama/Baba Lishe).

Establishing the value of properties owned by respondents in the fishing communities visited was important in order to determine their poverty and wealth. Table 39 summarises their responses by average value of properties owned and water region.

Table 39: Percentage distribution of respondents' responses by average value of properties owned in (Tshs) and water region

Total value of properties owned	Water Region				Total
	Lake Victoria	Coastal region	Lake Tanganyika	Lake Nyasa	
0	6.7	0.3	1.4	-	3.1
Up - 10,000.00	6.0	0.6	1.4	0.7	3.0
10,001.00 - 50,000.00	12.9	9.9	5.6	6.9	10.4
50,001.00 - 100,000.00	9.7	14.3	12.7	12.4	11.9
100,001.00 - 250,000.00	17.5	28.1	16.9	29.7	22.8
250,001.00 - 500,000.00	15.2	15.5	14.1	27.6	17.0
500,001.00 - 750,000.00	9.2	8.1	5.6	9.7	8.6
750,001.00 - 1,000,000.00	4.4	4.8	4.2	2.8	4.3
Over 1,000,000.00	18.6	18.5	38.0	10.3	18.8
Total	100.0	100.0	100.0	100.0	100.0

Source: Interview with fishing communities along Lakes Victoria, Tanganyika, Nyasa and Indian Ocean, 2001

The data on Table 39 shows that on average a significant number of respondents in all fishing communities visited possessed properties worth between Tshs. 100,001.00 - 500,000.00 (393 or 34.7 percent). This however starkly compares with another 163 or 16.5 percent who are in the Tshs. 0 - 50,000.00 only Respondents who with worth over Tshs. 1 million are only 185 or 18.8 percent. Only a minority of respondents in these communities had no properties at all (3 percent) and possessed properties worth up to Tshs. 10,000.00 (3 percent). The picture that we can draw from these findings is that a large number of fishing communities had assets with very little value compared to available resources in their areas. This partly explains the high level of poverty amongst members as reflected in these communities.

When analysed by water region, on average a good number, 38 percent of Lake Tanganyika fishing communities seem to possess properties worth over Tshs. 1,000,000.00 compared to eighteen percent respondents both in Lake Victoria and Coastal region respectively. Fishing communities in Lake Victoria were leading by respondents who owned nothing except their labour power, seven percent compared to one percent, 0.3 percent and nil respondents in Lake Tanganyika, Coastal region and Lake Nyasa respectively. The pattern of these findings indicate that careful strategies are required to raise the capacity of the communities and individuals in terms of income in order to enable them possess more valuable properties than as is the case now.

However the so-called big fishermen (owners if engine boats and other fishing gear) and big fish processors and traders, people who never venture out into the water seem to be comparatively better off. Some, though very few like the ones found along the Indian Ocean, at Nyamukazi and Kinagi in Kagera regions at Kibirizi in Kigoma/ Lake Tanganyika and the owners of the fish processing plants and exporters of fish and fisheries products in Mwanza, Dar es Salaam, Kigoma and Tanga seem to be stinkingly rich as reflected in their life styles, vehicles they own and the houses they live in. Most of these also own the fishing gears that they sub-let to some middlemen who in turn engage the "fishermen" or what for lack of a better term we have dubbed "fishing labourers"

In the Lake Victoria a zones, they are ones who also determine/set the prices of fish and other fisheries

(c) Poor housing or residential facilities:

Apart from very few fishermen especially in Dar es Salaam, Nyamukazi (Kagera region) and one or two in Musoma and Mwanza. Most fishermen are migrants and as such do not possess any residential facilities of their own. Most fishing communities/villages are as a general rule dotted with makeshift shacks made of poles, bamboo and elephant grass and mud. Inside those "*residences*" you hardly find a bed or any reasonable household item. Most of them however possess at least one small radio and sometimes a radio-cassette.

(d) Lack of or poor access to basic social services and physical infrastructure including.

As a general rule most, in fact all fishing communities are located at the water sides/shores of the various water bodies. As such, they tend to be cut off from the main villages or residential areas although a few of them are mere extension of the main villages/community. As a result a lot of them with few exception of Nyamukazi, Kunduchi lack in basic social services and physical infrastructure including:

(i) Safe Water -- most fishing communities are not connected to clean and safe water facilities. Their major sources of water are the rivers, lakes and even the ocean along which they are located. There are however a few exceptions mainly those fishing communities that are in urban/areas where they are connected to the urban/village common safe/clean water facility e.g. Nyamukazi, Kunduchi, etc.

(ii) Education Facilities -- the situation as regards education facilities is just like what prevails as regards clean/safe water. Those fishing communities in urban areas or that exist as part and parcel of the traditional villages/communities may have access to at least a Primary and even Secondary school or any other education facility where such facilities exist or are provided at least in the neighbourhood (within a distance of not more than 5 Kilometres).

(iii) Accessibility/transport facilities -- Although most of the fishing communities/Villages seem to be accessible, this is mostly seasonal especially where road/land transport seems to be the dominant mode of transport. Such communities tend to be totally cut off during the rainy seasons or very difficult to navigate through the rough roads. Whether by land or water, most forms of transport are not safe and viable (boats and canoes or trucks and tractors) and where they are relatively in good shape and conditions they are not reliable while also operating irregularly/erratic and once or twice a week if you are lucky.

(iv) Poor communications -- tied to the problem of transport is the problem of the means of communication. Apart from the few exceptions (urban located fishing villages/communities) most fishing villages are located long distances from the post office, have no telephone facilities or the like. This seems to be a major bottleneck especially as regards making business transactions or accessing important information relevant to their activities.

(e) Poor health and sanitary conditions: Data and information from almost every fishing community attest to the very abhorring health and sanitary conditions pertaining in the fishing villages or communities. This is reflected through the lack of latrines and environmental cleanliness. Almost most villages have no latrines and people just go to the surrounding bush or water body to do their thing. This is reflected through the high incidence of several water borne and water related diseases including typhoid, dysentery,

diarrhoea, bilharzia / schistosomiasis and several other communicable diseases such tuberculosis, STDs and HIV/AIDS.

- (f) Low level of education, information and awareness** as regards the economic potential of the marine economic system around, economic opportunities including markets for the various marine/fisheries products as well as regards their own capacities in improving their economic status, living status as well as other aspects of their livelihood and well being. This situation is very much reflected in information and observations from the Lakes Nyasa and Rukwa, some areas in the Lake Victoria Zone (Kinagi, Muganza - Nyabuzele, etc.) and Mtwara/Lindi part of the Indian Ocean

According to information from the survey for instance, most members of the fishing community have very low level of education. Very few people for instance, have attained post secondary education as clearly indicated in Table 40. In fact a significant number (123 or 11 percent) have never been enrolled in school. Most of them have attained primary school education (696 or 62 percent).

Table 40: Percentage distribution of respondents' responses by education status and water region (N = 1116)

Education Status	Water Region				Total
	Lake Victoria	Coastal region	Lake Tanganyika	Lake Nyasa	
Never enrolled	25 (4.8)	87 (23.3)	7 (9.3)	4 (2.6)	123 (11.0)
Primary School (Std. I - IV)	73 (14.1)	79 (21.1)	12 (16.0)	30 (19.9)	194 (17.4)
Primary School (Std. V - VIII)	366 (70.9)	182 (48.7)	49 (65.3)	99 (65.6)	696 (62.4)
Ordinary Secondary School	39 (7.6)	14 (3.7)	4 (5.3)	17 (11.3)	74 (6.6)
Advanced Secondary School	.3 (0.6)	.1 (0.3)	-	1 (0.7)	5 (0.4)
Post Secondary Certificate	.4 (0.8)	-	-	-	4 (0.4)
Diploma	-	-	1 (1.3)	-	4 (0.4)
Degree	-	-	1 (1.3)	-	1 (0.1)
Functional Literacy	.4 (0.8)	10 (2.7)	1 (1.3)	-	1 (1.3)
Total	516 (100.0)	374 (100.0)	75 (100.0)	151 (100.0)	1116 (100.0)

Source: Interview with fishing communities along Lakes Victoria, Tanganyika, Nyasa and Indian Ocean, 2001

Cross regional variations indicate that the Indian Coastal regions have the lowest level of education (182 or 49 percent), Lake Tanganyika (49 or 65.3 percent), Lake Nyasa (99 or 66 percent) compared to Lake Victoria (366 or 71 percent).

- (e) Poor/Low Nutrition Levels** - this is basically a function of unbalanced diets: Observation from field work especially by the Lakes Rukwa, and Lake Victoria side attests to the fact that most members in the various fishing communities very rarely consume vegetables, legumes and red meat.
- (f) Poor clothing** -- most fisher folk or fishing labourers do have very few clothes and most such clothes are ragged. This is indeed reflected in their appearances in almost all fishing communities.

(g) **Marginalisation/ Exclusion as regards decision making and/or participation in decision making on issues pertaining to their development and governance:** This was reflected by the low level of awareness of information as regards the country's Fisheries Policy, the various Rules and Regulation and the various decisions that had been taken at the local community, ward and district levels touching on the various aspects of the fisheries sector (Kinagi, Nyabuzele/Muganza, Kyela and several other areas. In this regard it is important to note that women suffer the brunt even more (Nyabuzele, Nyamukazi Mtwara/Lindi, Kunduchi and Kigoma/Lake Tanganyika areas, etc.)

7.6.4 Community's Own Perception Of Poverty:

It is however interesting to note that most of the fishing labourers and other artisanal fishermen tend to accept the situation they are in as natural and/or God-given. As a result they don't think of measures to alleviate the situation. Poverty is again perceived as mere inaccessibility to basic social services and infrastructure. They don't see that as poverty but just mere problems they encounter or face. They have no other reference points to compare their situation with. For instance in Table 5 in which the respondents were asked to talk about and/or rank some selected problems facing them as members of the fishing community only 261 or 23.3 percent of the respondents said poverty was a problem as opposed to 107 or 9.6 percent who didn't. Other major problems perceived by the communities themselves include lack of credit facilities, lack of medical/health facilities, periodic epidemics, lack of co-operative institutions/common facility, reliable roads, reliable transport, thefts of working/fishing gears, reliable product markets, etc. For more detailed information see Table 41.

Table 41: Basic problems as perceived by fishing communities (N = 1118)

No.	Type of Problem	Response	
		No	Yes
1.	Means of transport	198 (17.4)	177 (15.8)
2.	Reliability of roads	184 (16.5)	186 (16.6)
3.	Medical/health facilities	142 (12.7)	232 (20.8)
4.	Primary school	272 (24.5)	97 (8.7)
5.	Secondary school	242 (21.6)	128 (11.4)
6.	Product markets	205 (18.3)	164 (14.7)
7.	Inflation	263 (23.5)	106 (9.5)
8.	Security of lives and fishing gears	222 (19.9)	148 (13.2)
9.	Conflict with big fishermen	306 (27.4)	63 (5.6)
10.	Co-operation with fisheries officials	299 (26.7)	70 (6.3)
11.	Sanitation at fish landing sites	299 (26.7)	69 (6.2)
12.	Produce taxes	256 (22.9)	114 (10.2)
13.	Participation in decision making	251 (22.5)	118 (10.6)
14.	Confiscation of fishing gear by government officials	323 (28.9)	46 (4.1)
15.	Confiscation of fishing gear by government by big fishermen	295 (26.4)	74 (6.6)
16.	Theft of working/fishing gears	196 (17.5)	172 (15.2)
17.	Co-operative institution	162 (14.5)	206 (18.4)
18.	General poverty	107 (9.6)	261 (23.3)
19.	Credit facilities	112 (10.0)	258 (23.1)
20.	High prices of working /fish gears	206 (18.4)	163 (14.6)
21.	Periodic epidemic	146 (13.1)	222 (19.9)
22.	Cheating practices by traders	265 (23.7)	102 (9.1)

Source: Interview with fishing communities along Lakes Victoria, Tanganyika, Nyasa and Indian Ocean, 2001

7.6.5 Influencing/ Contributing Factors:

Preamble

Data so far obtained from personal observations, checklist, and village inventories and FGDs from the fishing communities or villages visited include the following:

7.6.5.1 Community's/People's Socio-cultural beliefs and practices including their attitudes towards certain developmental issues.

It is rare enough for policy makers to assess the needs and means of their target groups. It is even more rare for the impact of culture and tradition to be taken into account. Yet it is being realised more and more that many development projects fail if the local customs, perceptions and power relations of the beneficiaries are neglected. Our visits and observations in the fishing communities visited along the Indian Ocean, Lake Victoria Basin, Lake Tanganyika, Lake Rukwa and Lake Nyasa revealed diversity of cultural attitudes and practices that impact on their perception towards developmental issues. For example, there was a general feeling among the fishing communities that they were being used by elite and government officials for their own ends. Their claims were attested by a number of research and/or projects conducted and/or initiated in their locales but they never benefited them instead they were hijacked by government officials or local elite.

7.6.5.2 Low- Level of technology mainly due to low level of scientific innovation and achievement as well as unavailability and affordability.

Most of the fishing communities visited were characterised by low level of technology partly because of low level of scientific innovation and achievement and partly because unavailability of modern fishing technology, leave alone the question of affordability of such technologies. For example, most fishermen made use of non powered boats for fishing that did not guarantee them with large catches; poor fishing gears (such fishing nets, Makokolo); poor and/or lack of processing facilities (such as drying, smoking, and lack of cold facilities) that resulted to high post-harvest loss. Even when these modern fishing technologies were available, the general complain for almost all fishing communities was the high prices which they could not afford bearing in mind their poverty status and low level of capital. See Table 42 on fishing gears used by respondents in the fishing communities.

Table 42: Percentage distribution respondents by fishing gears used (N = 1088)

Type of fishing gear	Frequency	Percent
None	207	19.0
Beach seines	33	3.0
Hand line/hook	208	19.1
Gill nets	373	34.3
Shark nets	48	4.4
Ring nets	43	4.0
Boat seine	5	0.5
Scoop net	39	3.6
Long line	4	0.4
Fish cage	43	4.0
Diving gear	7	0.6
Other gear	78	7.2
Total	1088	100.0

Source: Interview with fishing communities along Lakes Victoria, Tanganyika, Nyasa and Indian Ocean, 2001

7.6.5.3 Lack of Credit in terms of accessibility, amount and conditionalities attached to it

In most fishing communities visited, with an exception of MISIWO in Musoma Urban, Mara and USUMAU in Ukerewe, Mwanza, savings and credit facilities were lacking making it difficult for the fisher folk to have a starting capital to invest seriously in their business. To make matters worse, even where savings and credit facilities existed, the conditionalities and strings attached to the credits were too difficult for the smaller fishermen, who were the majority to afford. The situation therefore did not encourage fishermen to expand their business into modern ventures due the lack of sufficient capital for the same.

7.6.5.4 Poor health and environmental conditions as reflected through high levels of certain diseases (malaria, STDs, HIV/AIDS, Typhoid and several other diseases).

Among the fishing communities visited (in Dar-Es-Salaam, Tanga, Mtwara, Mwanza, Mara, Kagera, Kigoma, Rukwa and Mbeya), there were “better” and “worse” ones, in terms of health and environmental conditions. There were some fishing communities improving and others stagnant, serviced and unserved in terms of the aforementioned aspects. For example, most of the fishing communities visited around the Lake Victoria shores had comparatively better environmental conditions due to the existence of Beach Management Units (BMUs) entrusted to maintain cleanliness compared to other areas visited. However, almost all-fishing communities were characterised by high levels of water and water related diseases (e.g. typhoid, malaria, diarrhoea STDs as well as HIV/ AIDS. Due to the existence of such diseases many fishermen spend many man- hours on treatment, nursing the sick than on fishing and other fish related activities. In turn this affect their socio-economic situation in terms of eradicating poverty.

Observations by the research team indicate that on the all general household cleanliness was satisfactory for 507 (45.3 percent) of the 1118 households visited/interviewed. Another 348 (31.1 percent) households scored “Good” and only 54 (4.8 percent) were ranked as “Very Good”. A significant number 134 (12.0 percent) and 28 (2.5 percent) had their household surroundings ranked as “Bad” and “Very Bad” respectively. It is however very important in this regard to point out that most members of the fishing communities did not have latrines and that they did their things in the water bodes or surrounding bushes.

It is therefore not surprising that most of them reported very high rates and incidence of water related diseases as indicated in Table 43 on the most recurrent diseases in their respective areas.

Table 43: Problematic types of diseases in the selected sampled areas along water bodies in Tanzania (Percentage in brackets)

No.	Type of disease	Response	
		Yes	No
1.	STDs	18 (1.6)	1098 (98.2)
2.	Cholera	41 (3.7)	1075 (96.2)
3.	Dysentery	132 (11.8)	982 (87.8)
4.	Diphtheria	36 (3.2)	1079 (96.5)
5.	Typhoid	356 (31.8)	759 (67.9)
6.	Other abdominal problems	64 (5.7)	1051 (94.0)
7.	Colds/coughs	328 (29.3)	787 (70.4)
8.	Respiratory diseases	36 (3.2)	1079 (96.5)
9.	Tuberculosis	38 (3.4)	1077 (96.3)
10.	Malaria	906 (81.0)	209 (18.7)
11.	Schistosomiasis	198 (17.7)	917 (82.0)
12.	Elephantiasis	5 (0.4)	1109 (99.2)
13.	Leprosy	1 (0.1)	1114 (99.6)
14.	HIV/AIDS	14 (1.3)	1100 (98.4)

Source: Interview with fishing communities along Lakes Victoria, Tanganyika, Nyasa and Indian Ocean, 2001

According to Table 43 the most common and seemingly fatal disease is malaria, followed by typhoid, coughs/colds, schistosomiasis, dysentery, cholera, etc. in that order. This is further attested by information or data contained in Table 8 on types of diseases contracted by members of the respective household in which again malaria leads the list and is followed by colds/coughs, then typhoid, schistosomiasis, dysentery, other abdominal malaise, etc. in that order.

Table 44: Diseases contracted any of one's household in the last one month in the selected sampled areas (Percentages in brackets)

No.	Type of disease	Response	
		No	Yes
1.	STDs	1107 (99.0)	5 (0.4)
2.	Cholera	1095 (97.9)	20 (1.8)
3.	Dysentery	1046 (93.6)	69 (6.2)
4.	Diphtheria	1096 (98.0)	19 (1.7)
5.	Typhoid	948 (84.8)	167 (14.9)
6.	Other abdominal problems	1071 (95.8)	44 (3.9)
7.	Colds/coughs	933 (83.5)	182 (16.3)
8.	Respiratory diseases	1104 (98.7)	11 (1.0)
9.	Tuberculosis	1100 (98.4)	15 (1.3)
10.	Malaria	481 (43.0)	634 (56.7)
11.	Schistosomiasis	1028 (91.9)	87 (7.8)
12.	Elephantiasis	1112 (99.6)	3 (0.3)
13.	Leprosy	1113 (99.6)	1 (0.1)
14.	HIV/AIDS	1108 (99.1)	7 (0.6)

Source: Interview with fishing communities along Lakes Victoria, Tanganyika, Nyasa and Indian Ocean, 2001

7.6.5.5 Knowledge, Awareness and Practices (KAP) as far as HIV/AIDS is concerned

To measure the fisher folk's level of KAP as regards HIV/AIDS the 1118 respondents who responded to the Fishing Community Household Questionnaire were asked a question as whether they had heard or were aware of HIV/AIDS.

Table 45: Percentage distribution of respondents' awareness of HIV/AIDS (N = 1118)

Response	Frequency	Percentage
Yes	1075	96.2
No	30	2.7
Don't Know/No Response	13	1.2
Total	1118	100.0

Source: Interview with fishing communities along Lakes Victoria, Tanganyika, Nyasa and Indian Ocean, 2001

Asked on their source of information as regards HIV/AIDS, most of the respondents said it was the press/mass media (452 or 40.4 percent), peers (97 or 8.7 percent), both peers and mass media (103 or 9.2 percent), special national campaigns (62 or 5.5 percent) and international agencies (72 or 6.4). All in all the press/mass media seems to occur together with other sources in 694 or 62.0 percent of the total responses to the question. (For more details see Table 46).

Table 46: Basic problems as perceived by fishing communities (N = 1118)

No.	Sources of information	Frequency	Percent
1.	Spouse	20	1.8
2.	Parents	5	0.4
3.	Peers	97	8.7
4.	Worship place	38	3.4
5.	Press/Mass Media	452	40.4
6.	Family Planning NGOs/Institutions	22	2.0
7.	Special National Campaigns	62	5.5
8.	Political leaders	7	0.6
9.	Parents and Mass Media	6	0.5
10.	Peers and Mass Media	103	9.2
11.	Worship Places and mass Media	44	3.9
12.	Mass Media and international Agencies	72	6.4
13.	Mass Media and Others	17	1.5
14.	Peers, Media and International Agencies	50	4.5
15.	Worship Place, Mass Media and International Agencies	28	2.5
16.	Peers, Worship Places and Mass Media	69	6.2
17.	Total	1092	97.7
18.	Missing	22	2.3
19.	Total	1118	100.0

Source: Interview with fishing communities along Lakes Victoria, Tanganyika, Nyasa and Indian Ocean, 2001

All in all the fisher folk seem to depict a very higher level of awareness of HIV/AIDS with 1075 or 96.2 percent of the respondents saying they were aware as against only 30 or 2.7 percent who said they were not. Thirteen or 1.2 percent of our respondents were reluctant to answer the question.

This seemingly very high level of awareness was almost similar across all water body/regions as clearly indicated in the following Table.

Table 47: Level of HIV/AIDS awareness across the four water bodies/regions (Percentage in brackets)

Response	Water Bodies			
	Lake Victoria	Coastal Region	Lake Tanganyika	Lake Nyasa
Yes	491 (95.2)	361 (96.3)	72 (96.0)	151 (99.3)
No	17 (3.3)	12 (3.2)	1 (1.3)	1 (0.7)
Don't Know/No Response	8 (1.6)	2 (0.5)	2 (2.7)	-
Total	516 (100.0)	375 (100.0)	75 (100.0)	152 (100.0)

Source: Interview with fishing communities along Lakes Victoria, Tanganyika, Nyasa and Indian Ocean, 2001

Percentage-wise however, the fishing communities in Lake Nyasa area seem to depict the highest level of awareness (99.3 percent), followed by Coastal region (96.3 percent), then Lake Tanganyika (96.0 percent and lastly the Lake Victoria region with 95.2 percent. Numerically however, more people in lake Victoria area (491) were positive as compared to 361 (Coastal), 151 (Lake Nyasa) and 72 (Lake Tanganyika).

On whether they use family planning methods which would also protect them against HIV/AIDS transmission, 576 (51.5 percent) of the respondents said they did. A substantial number (411 or 36.8 percent) said they did not. Together with those who were reluctant to answer this attest to a very high propensity to HIV/AIDS risk on the part of members of the fishing communities in Tanzania.

Table 48: Percentage distribution of whether respondents' use family planning methods (N = 1118)

Response	Frequency	Percentage
Yes	576	51.5
No	411	36.8
Reluctant to answer	68	6.1
Doesn't Know/Never had any sexual intercourse	48	4.3
Total	1103	98.7
Missing	15	1.3
Total	1118	100.0

Source: Interview with fishing communities along Lakes Victoria, Tanganyika, Nyasa and Indian Ocean, 2001

For instance, while a substantial number of them said they use family planning methods during sexual intercourse only 205 or 18.3 percent of the 1118 respondents said they used condoms which leaves more than 80.0 percent at high HIV/AIDS risk as Table 49 shows.

Table 49: Percentage distribution of family planning methods used during sexual intercourse (N = 1118)

Method Used	Frequency	Percentage
Contraceptive	15	1.3
Protective	46	4.1
Others (Specify)	9	0.8
Contraceptive and Protective	1	0.1
Abstinence	12	1.1
Use of condoms	205	18.3
Rhythm	13	1.2
None	38	3.4
Being faithful to partner	34	3.0
Having one partner	2	0.2
Religious beliefs	1	0.1
Injection	7	0.6
Prolonged Breast feeding Period	2	0.2
Traditional Methods	12	1.1
Implants	2	0.2
Counselling	5	0.4
Missing	714	63.9
Total	1118	100.0

Source: Interview with fishing communities along Lakes Victoria, Tanganyika, Nyasa and Indian Ocean, 2001

One of the reasons as to why a lot of them don't use family planning methods including the use of condoms might be because there are no providers of such services as clearly indicated in the responses to the question: *"Are there any health or family planning education services provided in your area"* to which a significant number (507 out of 1118 respondents or 45.3 percent) said *"No"*. Together with the 52 or 4.7 percent who said they did not know, this constitutes more than 50.0 percent as clearly demonstrated in Table 50.

Table 50: Are there any health or family planning providers? (N = 1118)

Response	Frequency	Percentage
Yes	527	47.1
No	507	45.3
Doesn't Know	52	4.7
Total	1086	97.1
Missing	32	2.9
Total	1118	100.0

Source: Interview with fishing communities along Lakes Victoria, Tanganyika, Nyasa and Indian Ocean, 2001

7.6.5.6 Inaccessibility to Markets and Low prices for their produce.

Living under conditions of insecurity of tenure, poor or degraded environments and general scarcity of basic services and resources, vast numbers of fishing community dwellers have many more needs than can be met as. And as there are so numerous (e.g. fishing labourers, small fishermen, big fishermen, etc.), there is numerous competitions amongst them for those scarce resources within their reach: jobs, credit, water, reliable health care, etc. Many more resources are outside their reach, such as fishing grounds (especially in Lake Victoria), plots, secure shelter, permanent jobs, bank loans. Most of the poor fishing community dwellers are generally excluded from the markets for some of these things, while these markets are usually imperfect. They are dependent on others (big fishermen/traders) to obtain the latter but often also former resources, on patrons who can offer the resource or on brokers who can mediate

on their behalf. The problem of access includes the difficulties in making organisational connections, the way in which resources are distributed and the kind of links between institutions and beneficiaries and/or clients.

7.6.5.7 Lack of security for human lives and fishing gears in the water bodies due to the ever-increasing incidences of piracy.

Security of human lives and fishing gears in all water bodies visited was fragile. There were a number of reported cases on armed robbery and piracy committed on Lake Victoria, Lake Tanganyika, Lake Rukwa and along the Indian Ocean water bodies against fishermen and traders. Besides there were time and again raids on the fishing communities committed by armed robbers, who in some incidences killed people and living others with permanent impairment. This situation was highly pronounced along Lake Victoria and Lake Tanganyika areas, which border with the turbulent Great Lakes region. The general insecurity of both human lives and fishing gears acts as a big set back towards the efforts of a number of fisher folks in these areas on poverty eradication.

7.6.5.8 Unscrupulous and cheating behaviour on the Part of big fisher folk and traders, including tampering with weighing scales and price-cutting/manipulation.

One of the most bottlenecks contributing to the problem of poverty among the fishing communities visited was unscrupulous and cheating behaviour on the Part of big fisher folk and traders including tampering with weighing scales and price-cutting/manipulation. In Katobofu, Kinagi Island for example, one weighing scale had been tampered and manipulated by a fishing agent. In an attempt to verify it, a member of the research team found 5 Kilograms loss and five Kilograms gain to the fishing labourers and/or small fishermen and fishing agent respectively. The Kinagi case is just a tip of an ice berg of numerous cases all over the fishing communities and landing sites visited by the researchers. Thus, if URT and JAICA are to address the problem of poverty among the fishing communities then priority should be on establishing common fishing facilities owned by the fishing communities themselves.

7.6.5.9 Inaction by relevant state authorities either due to lack of working tools and other resources or as a result of personal aggrandisement.

Despite government policy which stipulates that fishing should be left to smaller fishermen and that processing and marketing be on the hands of big fisher folk and businessmen, still there is too much laxity and inaction on the part of the relevant authorities in enforcing the policy and land laws. The inaction on the state authorities partly due to lack of working tools (patrol boats, insufficient extension officers) or partly due to personal aggrandisement has fuelled conflicts between smaller fishermen and big fisher folk and at times has resulted into blood shed (e.g. Lake Victoria) – Kinagi Muleba.

The state authorities inaction, e.g. of issuing fishing licenses in Mwanza to big fisher folk to fish in Kagera and Mara waters of Lake Victoria has often than not been at the disadvantage of the poor fishing communities. If the authorities that be are real concerned to eradicate poverty among these fishing communities, then concerted efforts need to be done to iron out the existing contradictions for the betterment of the majority.

7.6.5.10 Growing dependency syndrome.

Most of the fishing communities and dwellers visited still have the dose of a development statism, i.e. top down development approach. The government in collaboration with donor countries and organisations, e.g. FAO, European Union, World Bank, UNDP and other bilateral countries tried to impose development on the people from their own perspective without prior involvement. The results of these projects have always been catastrophic in terms of sustainability and improving people's livelihood. The approach by government and donors has created a sort of dependency syndrome and lack of creativity as well as aggressiveness on part of their own development. Consequently, there is a need in a new effort to eradicate poverty on these communities to adopt Participatory Poverty Alleviation Approach (PPA) that is not romanticised.

7.6.5.11 Low level of awareness and lack of information on several issues and aspects of their overall development, livelihood and well being.

Other equally important factors to the poverty status of many fishing communities are caused as well as aggravated by the existing, often very severe socio-economic inequalities. They also originate in the characteristics of the fishing communities in so far as they are handicapped in dealing with high status actors or the government bureaucracy. For example, the majority lacks proper or sufficient information, because of being illiterate for example, or having settled recently in a fishing community. In Tanzania and more particularly in the fishing communities visited are characterised by the poor who belong to the disadvantaged or the most disadvantaged category, leading to low self-confidence vis-à-vis the more advantaged middle class (the fish agents, the fisheries officers)/ big fisher folk (processing and export business owners as well as ministry officials) who may perceive the poor as lacking socially accepted behaviour.

But there is also an institutional problem component to low levels of awareness and in-access to information problems for example, bureaucracies.

7.6.5.12 Gender insensitivity and inequality as a result of rampant patriarchal beliefs and practices still dominant in almost all fisheries and riparian communities in the country.

While a substantial number of women play various significant roles in the fishing communities this limited to fisheries related or support/complementary activities rather than fishing. As a general rule, their activities are limited to providing services to the respective fishing communities or fish processing. The said activities include:

- i) Eating places - "Mama Lishe"
- ii) Kiosks
- iii) Beer "groceries" or stores
- iv) Sale of household furniture and utensils
- v) Vending cereals and other food stuffs
- vi) Fish smoking

Despite their important contributions to the fishing communities they however suffer from abject poverty, exploitation, repression and being down trodden by their male counterparts. This is partly a function of the patriarchal cultural values, which are predominant at almost every fishing community visited and their economic powerlessness.

Observations by research teams as well as information from focus group discussions carried out at several fishing communities/villages (Nyamukazi, Karatunga, Nyabuzela - Muganza, etc.) attest to the manner in which men, including local government officials, look down at women whom they refer to and treat just as “children”. Ironically enough most women condone this saying they can’t do anything to change the situation. “It is just the natural/traditional order of things”, lamented one woman at Nyabuzela - Muganza fishing community in Biharamulo district, Kagera region.

To attest to what has just been said above, all women we talked to narrated how:

- a) a lot of women refuse to pay for the services rendered to them and how they are beaten if they insist that they be paid
- b) How community leaders/village officials cannot hear their cases or complaints unless they are paid some money
- c) How they are asked to pay several “voluntary” contributions for various functions and services that are rendered to them - up to Tshs. 8,000.00 without being given receipts
- d) How the Sanitary Official condoned and propagated the atrocities and other socially deviant/negative acts committed against them.

The women also complained of unreliable weighing scales through which traders cheat fishermen. When the fishermen bought their own scale, the traders refused to buy the fish.

The women also complained of low investment or start up capital and general lack of credit facilities, health and Mother and Child Health (MCH) services.

The women also came out with some recommendations including:

- i) need for working equipment and working capital
- ii) Need to be involved in decision making
- iii) Need for credit and establishment of Saving and Credit Societies/Co-operatives
- iv) Need for training so as to build their capacities
- v) Reduce fees on the various licenses from Tshs. 6,000.00 - 8,000.00 they are paying now to about 3,000.00
- vi) Day Care Centres and Nursery Schools for their children

It is important to also note that women are the most hit by poverty as most of them don’t own valuable assets including money, fishing gears, land and other items which might act as collateral for securing loans.

It is therefore very imperative, and indeed a matter of expediency, that any interventions to uplift the socio-economic status of fisher folks and improve their incomes and livelihoods should main stream gender

7.6.6 Potential For Poverty Reduction

Concern and interest in alleviation or reduction of the Poverty levels/status of the various sections of the Tanzania population including the artisanal fishermen has been on the agendas of the government of the United Republic of Tanzania, several international and local organisations as well leaders and members of the local and/or fishing communities themselves. The various publications, policy documents and specific development interventions are indeed testimony to this ever-increasing concern such documents include the government's

National Poverty Eradication strategy enumerating a number of areas including the fisheries sector that are to be addressed in order to at least reduce poverty by the year 2025; the Lake Victoria Environment Management Project which is a heady, working in various sector, around the Lake Victoria Basin various local community Based Organisations and NGOs all targeting the poor sections/categories of their population, some in the provision of saving and Credit Facilities, some in Capacity building while others are Micro-Project provisions etc. --- all these aim at poverty alleviation of their members and/or target the poor. Other important documents include the National Fisheries Sector Policy the Fisheries sector Bill expected to be tabled before Parliament in its current budget session or thereafter.

On shortcoming in all these documents and their implementation strategies has been the lack of involvement of their target populations in the initial stages of their formulation. This is basically a function of lack of information from Baseline Surveys/Research, which should inform and guide such policies, strategies and specific interventions. Before embarking on any specific interventions. Before embarking on any specific interventions to alleviate poverty amongst any social category there is always the need to find the state of the situation, peoples' own perception of the problem one wants to tackle, the available resources including peoples' own awareness and perception of the problem and their own preferred strategies for intervention as well as their willingness to participate in the alleviation of the problem. The latter is very important in terms of community ownership and long term sustainability of the programme or specific intervention. You need to adopt some form of Participatory Poverty Assessment (PPA) methodologies if you are to be successful in your approach.

The strategy adopted by the JAICA and Ministry of Natural Resources and Tourism in this project therefore, seems (with periodic minor modifications) to be in the right track.

During the just ended research for instance, we were able to capture the state of the act as regards poverty and related potentials for its reduction or alleviation from communities or categories of the poor amongst artisanal fishermen and those other stake holders in the fisheries sector. We were in the process able to identify both liabilities and assets in the task before us.

7.6.7 Problems and Needs

During the survey, the researcher revealed a number of problems and needs through individual and/or FGDs with the fishing communities and the local government leaders, NGOs and CBOs operating in the various fishing communities. The following anecdotes from the village inventories, checklists and FGDs characterise the problems and needs of the various communities which in a way should be seen as the communities' own or perception of the factors contributing to their poverty status: Some, in fact most of these problems and needs were also mentioned by the interviewees as some of the major problems they were facing and which needed rectification (See Tables 5,7 and 8).

1. **Very low prices for their produce/fish catches:** the complaints here were that the prices were either too low e.g. Tshs. 200/- - 400/- for a Kg. of Nile Perch or that they were unstable and dependent upon the whims and wishes of the fish trading agents or their representatives.

2. **Markets:** either that they were unreliable or almost absent especially during times of high catches. The present market structures were also said to be poorly built and dilapidated or have not been properly roofed with secure corrugated iron sheets or something that is leakage proof.
3. **Fishing gears:** The interviewed fishermen were almost unanimous on this. They pointed out that most fishing gears especially out boat engines, fishing nets and line hooks were either inaccessible and/or unaffordable especially on the part of artisanal fishermen or fishing labourers. Those who secured them from big fish traders and/or owners of the fish processing industries on credit, especially around Lake Victoria, have to repay for the same on very high interest rates and as a general rule by catches of fish through which the credit was being repaid and in most cases they offered very low prices sometimes as low as Tshs. 70/- per Kg. Of Nile Perch as was learnt from Kinagi in Muleba district, Kagera region.
4. **Cheating and/or unscrupulous behaviour and practices on the part of big fish traders or owners of fish processing industries and traders.** The general complaint here was that they manipulated weighing scales and that in some areas the traders or the agents never used weighing scales thereby cheating and/or exploiting the fishermen.
5. **Security Situation:** Most artisanal fishermen especially on the Lakes Victoria and Tanganyika side complained of piracy, acts of banditry and especially the destruction and/or confiscation of their fishing gears by “*big fishermen*” who declare certain fishing areas their exclusive zones – no entry areas for other fishermen or even vessels transporting cargo and people from one area to another. In Biharamulo, Muleba and Bukoba areas for instance the research team also learnt of very nasty incidents where certain individuals were shot at and/or sank into the lake. There were also reports of high rates of theft of nets and line hooks.
6. **Investment/Working Capital/Credit Facilities:** Most artisanal fishermen were also of the opinion that they were using very low technology and outdated fishing technology and hence very low catches because of lack of sufficient seed money or starting capital. On top of their general poverty levels, they also said there were no credit facilities to which they could apply for reasonable amounts of working capital. To that effect some stakeholders especially Women Groups e.g. Tweyambe have initiated their own credit schemes based on the Grameen Bank and SCCOS principles. Even here however contributions by members is very low/little.
7. **Lack of basic social services and infrastructure:** With the notable exceptions of Kunduchi (Dar-Es-Salaam) and Nyamukazi (Bukoba/Kagera region) there was general and unanimous outcry from all those stakeholders interviewed about the lack of basic social services and facilities at almost every fishing village/community visited. These include basic health/Medicare services, education facilities, reliable and/or all season roads, clean and safe water, sanitary facilities such as toilet facilities, power (electricity), reliable transport facilities, permanent market stalls, shops worship places, police stations, maize mills, drug stores, basic MHC facilities and Family Planning Services.
8. Lack of clean and reliable landing sites, which are well equipped with reliable weighing scales and fish processing facilities.
9. High rates of morbidity and mortality resulting from water borne and water related as well as human communicable diseases such as, diarrhoea, dysentery, typhoid, malaria, tuberculosis, bilharzia, schistosomiasis, STDs and HIV/AIDS.
10. **Very low level of KAP with regards to STDs, unwanted/early pregnancies and HIV/AIDS transmission.** To date HIV/AIDS is decimating the fishing population at a very high and precarious speed.

11. **Fisheries Extension Services:** Substantial number of artisanal fishermen and traders also complained of the lack of fisheries and extension and other related services. The complaints ranged from lack of extension officers to claims that those available did not provide the services regularly or at all. Credit given to fisheries extension officers is that they were exceptionally good in confiscating fishing gears, tax/levy collection as well as harassing the small/artisanal fishermen while favouring and/or their agents who usually paid their way through.
12. Rampant illegal fishing methods and practices including trawlers, small size nets, beach seines and poison.
13. Payment of so many “voluntary” contributions, e.g. school desks, “Uhuru” Torch, entertainment for visiting high ranking government officials including Ministers, Prime Minister, Vice President and the President of the United Republic of Tanzania.
14. Lack of clearly demarcated and protected breeding grounds which makes it possible for the destruction of fishing nets by the unscrupulous fishermen especially those using trawlers , beach seines, poison/dynamite fishing practices
15. **Very high levels of illiteracy and lack of information:** because most fishermen are illiterate they are unable to read or unearth a lot of information pertaining to better economic opportunities, markets and prices of their produce. This also makes them more vulnerable to price manipulations and high risks to several diseases including STDs and HIV/AIDS.
16. **Rampant poverty levels:** As a result of all or some of the problems mentioned above most artisanal fishermen and labourers as well as other fisheries sector stakeholders find that they work in and are surrounded by very rich and marine resources.

7.6.7.1 The Specific Potentials for Poverty Alleviation

The specific potentials/assets that can facilitate the process of poverty reduction amongst members of the fishing communities that have so far been identified by the research team include the following anecdotes, which characterise their assets and strengths.

8.0 Emerging Issues

Some of the emerging issues that need special attention and/or timely interventions include the following:

1. **Fishing laws and regulations:**
These should be made clearer and made public. Specific mechanisms of making all stakeholders in the fisheries sector aware of knowledgeable to these laws and regulations should be put in place.
2. **The role of the fisheries/extension officers.** Presently the role of fisheries/extension officers is very ambiguous. They put on two hats, which are basically contradictory and antagonistic. On the benign note they are supposed to educate the fishermen and other stakeholders on proper methods of handling and marketing their catches at very lucrative prices. On the other hand they are the various law enforcers of the various laws and regulations which more often than not entails the imposition of fines and/or confiscation of fishing gear. And as a general rule most fisheries extension officers seem to be more enthusiastic in implementing the latter which makes the fisher folk distance themselves and in fact hostile and run away from these officers. These roles need to be separated.
3. **Change of laws and regulations so as to meet changing circumstances:** Certain provisions of the existing laws and regulations should be changed so as to accommodate certain emerging practices and institutions. For instance, certain provisions should be

made to accommodate the Beach management Units and the emerging NGOs and CBOs all doing work in the sustainable/development of the various marine resources and ecosystem around them.

4. **Resolution of conflict between artisanal fisher folk and big fishermen/traders and owners of fish processing plants:** The conflict between two parties especially in Lake Victoria is reaching very disproportionate stages while the silence of government on this is eroding the confidence of the smaller “fishes” in their government institutions. The silence of the various regional and district fisheries and government officials as well as that of their accredited representatives including District Councillors and Members of Parliament on the issue is the case in point. Some smaller fisher folk in fact told the research team that they were surprised by their member of parliament, for being very vocal in Parliament and other fora about issues of corruption and good governance somewhere else without trying to look at the looming crisis in his own constituency.
5. **Issues of exclusive fishing zones for certain fishing individuals:** The government should make its position clear as to whether to declare certain areas of the water/marine bodies their exclusive fishing areas to which no other person is allowed into (Example of the Greek in Bumbile Island). What does the law say about this and what specific measures are taken against anybody who contravenes the laws of the country causing damages in terms of property and even lives of other people.
6. **Enforcement of existing laws and regulations:** Information and data gathered by the research team suggest that various laws and regulations pertaining to the marine ecosystems and resources are not properly and judiciously enforced either for reasons of personal aggrandisement on the part of those responsible or due to lack of resources and/or capacity to do so. This should also be looked into.
7. **Preservation and protection of marine resources:** Another issue needing special attention is that special efforts should be made to conserve and protect the marine resources and ecosystems around the country. All the stakeholders should be mobilised so as to increase their awareness of the importance of these resources in terms of sustainable utilisation and conservation of the water bodies for the various marine resources or fish species.
8. **Illegal fishing methods and practices:** With notable exceptions of fishing communities on Lakes Nyasa and Rukwa the rest pointed out the existence of illegal fishing methods and practices including dynamite fishing, use of prohibited gears such as small nets, beach seines, etc.
9. **Promiscuity and low level of KAP on STDs, unwanted pregnancies and HIV/AIDS transmission:** Data from the fishing community household questionnaires as well as personal observations and informants reveal high levels of promiscuity and low level of KAP on the part of the fisher folk either out of ignorance/illiteracy or because of the need to gratify one’s ego and economic gains (women).
10. Provision of basic social services and infrastructure especially health and Medicare, basic education, safe water, reliable transport and communication, MCH facilities, sanitation/water sewerage, etc.
11. **Fish landing sites:** There was also general outcry for the provision of modern, well equipped landing sites with reliable weighing scales, sanitary facilities (toilets) shops, etc.
12. **Fish development levy:** a General complaint here were that what was ploughed back to the communities was very little. They want at least 50 percent of the levy ploughed back. They also want humane ways of collecting the levy. They are however positive on the idea.

13. The need for reliable fish markets and price structures - issue of knowledge/information on the available fish markets and prevailing prices at last destination so that they can also bargain through their co-operatives or nay other bodies formed for such purposes.
14. Common facility for fisher folk: (Information from fishing household questionnaire). All were very positive on the formation of such an institution.
15. Credit Facilities: The fisher folk were all positive on the formation of such institutions. In fact some fishing communities have formed multipurpose co-operative societies or credit organisations (Mkendo Wavuvi Samaki in Musoma, MUSIWO, USAMAU Savings and Credit Co-operative Society LTD in Ukerewe.
16. Co-operative Societies: There was also consensus on the need of the formation of such societies by all stakeholders involved. Some groups of stakeholders have in fact formed the same e.g. USUMAU in Ukerewe, Tweyambe in Muleba, etc.
17. KAP - especially as regards STDs, unwanted pregnancies and against the spread of HIV/AIDS infection.
18. Community Participation. There is felt need of involving communities in decision making through to implementation of the various decisions and interventions pertaining to their well being and the sustainable management of the marine resources and ecosystems around them. Some communities have in fact formed their own CBOs and the like. Some need to encourage and/or tap from these.
19. Mainstreaming Gender. There is indeed the need to mainstream gender in all the activities and processes carried out. Women's rights have to be given special attention. The women have to be specially empowered in order to liberate themselves from patriarchy - based discrimination, exploitation and other forms of abuse including rape, etc. Men will have to be targeted for special education on the rights of women and the need to build sexually equal communities.

9.0 Summary And Recommendations

9.1 Summary

In the preceding sections attempts have been made to present a picture of the socio-economic status including levels of income, standards of living, livelihoods and well-being of members of the fishing and riparian communities in Tanzania.

In the first section of this presentation we started by presenting an introduction on what constitutes poverty, the various dimensions it takes as well as the best vantage points from which to study poverty. We concluded by pointing out how poverty is a multi-dimensional problem needing an inter-disciplinary multidimensional approach in its analysis.

In section 4.2.0 we presented the poverty status of fishing communities in Tanzania. It was pointed out that despite living and working in environments that were/are characterised by very rich marine/fisheries resources and potentials for economic development and very high standards of living, improved livelihoods and well-being most members of the fishing communities especially fishing labourers or artisanal fishers continue to live in conditions of abject poverty, squalor destitution and, above all, human misery and marginalization.

In the process attempts were also made to point out the characteristics of poverty amongst the subjects of our study. these we said included, amongst many other things, low levels of income, very poor housing conditions, poor health and sanitary conditions, inaccessibility to

basic social services including safe water, education, health and energy facilities, poor and/or unreliable transport and communication facilities, low levels of formal education (illiteracy), information and awareness of the economic potentials around them and their own capacities to transform their lives livelihoods and well-being.

Contributing factors mentioned included inaccessibility to markets; unstable prices for their produce; price manipulation and cheating practices by big fishermen and traders; high levels of piracy in the waters; ambiguous and unclear policies, fishing laws and regulations. Others include corruption and inaction on the part of fisheries officials, other government functionaries and local and national political leaders; as well as a growing dependency syndrome. Others include inaccessibility and/or in affordable prices for fishing gears, low investment capital etc.

Several emerging issues that need to be tackled by the authorities were also revealed. These include acts of piracy and banditry conflicts between artisanal fishermen and bigger fishermen and/or agents of owners of fish processing plants and traders. Others included increased use of illegal fishing methods and gears, involvement of members of the defence and security forces in illegal fishing, claims that the Lake Victoria is soon to be privatised/sold, marginalisation and super exploitation and oppression of women.

9.2 By Way of Recommendations

1. That concerted effort be made by the government and other stakeholders to sensitise the riparian communities of the marine resources around them as potential source of income, employment and in the improvement of their livelihoods and standard of living.
2. That the riparian communities and especially the fisherfolk be educated on the importance of judicious utilisation and sustainable management of the marine ecosystems in their respective areas.
3. That specifically the fisherfolk and other stakeholders be made aware of the proper fishing methods, fishing gears as well as regulations governing the fisheries sector.
4. That the government and other concerned stakeholders put in place mechanisms through which the various stakeholders can assess saving and credit facilities from which those needing credit to initiate various income generating activities can do at reasonable conditionalities.
5. That common facility from which the fisherfolk can readily purchase various fishing gears, sometimes at credit be put in place either through co-operation amongst the respective fisherfolk or by any other interested institution.
6. That conflicts between the so-called fisheries operators/fishermen be immediately resolved by the relevant authorities.
7. That landing and marketing sites with modern facilities including reliable weighing scales be established and where possible through the involvement of the fishermen and other stakeholders.
8. That periodic inspection visits by the relevant authorities to such fish landing and marketing sites to check on the weighing scales and prices given to the fishermen by the fish traders/buyers be made.
9. That heavy penalties be meted to any body found manipulating the weighing scales and price fixing or manipulation contrary to the laid down procedures for personal aggrandisement.

10. That a system of co-management of the marine ecosystem and environmental sanitation involving all stakeholders be made.
11. That special training/education programme on environmental sanitation and such other related issues be put in place at all fishing communities.
12. That specific outlays to improve the sanitary conditions and especially building toilets, bathrooms and such other related facilities be built and that the respective communities should manage and take care of the same.
13. That special/concerted efforts be made to provide and/or improve/rehabilitate basic social services to the fishing communities. Specific basic social services and infrastructure that should be put in place include:
 - a. Education facilities - e.g. pre-school and Primary School
 - b. Day Care Centres
 - c. Health Facilities
 - d. Police Post
 - e. Post Office
 - f. Banking/Saving and Credit facilities
 - g. MCH Services
 - h. Markets
 - i. Reliable transport and communication facilities
14. That gender consideration be mainstreamed in all processes and interactions taken.
15. That all-cultural practice that entails the suppression, exploitation, marginalization and abuse of women should be done away with.
16. That the initiation and implementation of any interventions should involve the targeted social group. The top - bottom approach to development should indeed give way to the bottom - upward approach.
17. That in the analysis and discussion of poverty alleviation strategies attempts and, indeed, concerted efforts be made to adopt and use the various PRA methods and specifically the Participatory Poverty Assessment (PPA) methods. It is true that they do involve more extra resources in time and money but they usually ensure community ownership is crucial for long term sustainability.
18. That in all the above attempts be made to utilise the resources and experiences of other institutions and structures including NGOs and CBOs that are already operating in various fishing/riparian communities (e.g. LVEMP, LANESO, KAEMP, Tweyembe Women Group, Kunduchi Environmental and Development, Mradi wa Mazingira wa Hifadhi wa Mwambao Tanga, Federation Association of Women Entrepreneurs Tanzania, Kitanga Development Foundation, Mkendo Wavuvi Samaki Multi purpose Co-operative Society Musoma, MAJIMAMA, Bukasiga Fishing Company Society Ltd., Usamau Savings and Credit Co-operative Society Ltd., etc.
19. That the fisheries department adopts a much more conciliatory approach when dealing with the artisanal fisherfolk whose level of awareness and understanding on several issues is extremely low. They need to be nurtured.

10.0 Conclusion

It is now quite apparent that action and/or specific interventions by all stakeholder including the government, the donor community, NGOs and CBOs in order to alleviate or reduce the conditions of poverty amongst the fishing communities in Tanzania.

To that effect, the best approach is an “integrated approach” in which all sectors, government departments, the donor community and members of the fishing communities themselves pull their resources and harness their talents together to help the poor fisher communities improve their income levels and conditions of living. In the process it is important to empower the target groups so that they are able to participate fully in all processes and activities aimed at improve and even bettering their lives and well being.

All this calls for political good will, honesty diligence and a high level of personal and collective commitment and integrity and perseverance. It also calls for a high level of co-ordination and adherence to the principles of good governance.

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APPENDICES

APPENDIX 1

SURVEY DATA SAMPLE CHARACTERISTICS SOCIO-ECONOMIC PROFILE OF FISHING COMMUNITIES

APPENDIX TABLES

FISH MARKETING SURVEY DATA

1. Occupation

Type	% of respondents
Processing	6
Processing and trading	26
Trading	55
Fisher/Trader	8
Other	5

2. Trading Product

Product	% of respondents
Fresh fish	53
Dried fish	21
Smoked fish	8
Mix of above	18

3. Type of fish mostly traded

Type	% of respondents
1. Nile perch	17
2. Tilapia	16
3. Sardines	13
4. Changu	9
5. Migebuka	6
6. Mbasu	5
7. Vibua	4

4. Processing Methods

Method	% of respondents
Frying	30
Sun-drying	20
Salting	13
Smoking	16
Mix of above	21

5. Processing Facility Ownership

Facility	% of respondents
Own facility	70
Borrowed/rented	23
Shared	7

6. Motive for processing and fish trade

Motive	% of respondents
1. To earn a living	69
2. Inheritance	10
3. Profit	7
4. Other	14

7. Reasons for buying arrangement

Reason	% of respondents
1. Not getting guarantee from some seller	26
2. Depends on price offered in the Market	20
3. Buy from auction market	10
4. Same sellers offer discounts	9
5. Have small capital to buy from market	6
6. Others	30

8. Business transactions a month

Days	% of respondents
Up to 20 days	12
Over 20 days	57

9. Amount of fish traded/day

Amount	% of respondents
Up to 10 kg	13
Up to 20 kg	19
Up to 50 kg	27
Up to 100 kg	11
Up to 500 kg	14
Up to 1 ton	6
Over 1 ton	10

10. Who do fish traders sale to?

Customers	% of respondents
Direct to Consumers	46
Non-local traders	15
Local traders	10
Fishing Company	1
Mix of above	28

11. Good and Bad season Income

Amount	Good season % respondents	Bad Season % respondents
1. Up to Tshs.10,000	6	21
2. Up to Tshs. 50,000	33	50
3. Up to Tshs.100,000	30	13
4. Up to Tshs. 500,000	26	15
5. Up to Tshs. 1 million	4	0.5

12. Market information is obtained from peers 75% of respondents attested to that.

13. Problems faced

Problem	% respondents
1. Small capital	25
2. Market	17
3. Transportation	10
4. Poor storage	12
5. Decrease in amount of fish	4
6. Poor security	4
7. Health hazards	3
8. High export taxes	2
9. Unstable prices	2
10. Poor work facilities	2

FISHER HOUSEHOLDS SURVEY DATA

1. Relationship between big fishers/industries and small –scale fishers

Relationship type	% of Respondents
1. None	29.4 + 2.5+39
2. Bad	9
3. Good	10
4. Market	3.5
5. Assistance	2.0
6. Other	The rest % age

2. Cheating practice by buyers

Status	% respondents
1. A problem (a lot of cheating)	28%
2. Not a problem (i.e. no cheating)	72%

3. Working Gears high prices

Opinion	% respondents
1. A problem (high prices)	44
2. Not a problem (prices are OK)	56

4. Gear Detractions & Confiscation by big fishers

Status	% respondents
1. A problem	20
2. Not a problem	80

5. Working Gear Theft Problem

Status	% respondents
1. Rampant	47
2. Not a problem	53

6. Confiscation of fishing Gear by Government

Status	% respondents
1. A big problem	13
2. Not at all	87

7. Produce taxes a problem

Opinion	% respondents
1. No	69
2. Yes	31

8. Fish landing sanitation

Situation	% respondents
1. Bad situation	19
2. Good state	81

9. Road Reliability

Status	% respondents
1. Not reliable	50
2. Reliable	50

10. Transport situation

Status	% respondents
1. A problem	48
2. Not a problem	52

11. Product marketing reliability

Status	% respondents
1. Reliable	46
2. Not reliable	54

12. Fresh Fish Expenditure per week (last week)

	Category	Fresh Fish expenditure % respondents	Exp. Sardines %	Exp. Chicken %	Exp. On Beef %	Exp. On Goat meat %	Exp on pork %
1	Did not but	7	51	78	68	95	97
2	Up to	7	25	-	2	-	-
3	Tshs.500.-	10	11	5	7	2	1
4	Up to	55	12	16	21	3	2
5	Tshs1000.-	14	1	1	2	-	-
6	Up to Tshs5000.-	6	-	-	-	-	-
	Up to Tshs.10000						
	Over Tshs 10,000.-						
		100	100	100	100	100	100

13. Number of Meals per Day

Number	% respondents
1. One Meal	2
2. 2 meals	48
3. Three meals	50

14. Earnings per month

Amount	Good months (6 months)	Poor month (6 months)	Cumulative %	
			Good months	Poor months
1. Up to Tshs.10,000/-	5	20	5	20
2. Up to Tshs. 20,000/-	6	15	11	35
3. Up to Tshs. 50,000/-	18	26	29	61
4. Up to Tshs.100,000/-	24	18	53	79
5. Up to Tshs.200,000/-	19	10	72	89
6. Up to Tshs.300,000/-	10	5	82	94
7. Up to Tshs.500,000/-	9	4	90	98
8. Over Tshs.500,000/-	9	2	100	100

15. Other Income Generating Activities

Activity	% respondents
1. None	32
2. Farming for food	33
3. Farming for food and cash	20
4. Business	8
5. Other	7

16. Occupation Fishers + Processor

Activity	% respondents
Fish Processing	21
Fish Only	79

17. Fish Sales Customers

Customer	% respondents
1. Beach Traders	60
2. Fishing Co.	13
3. Auctioning	9
4. Direct to Consumers	8
5. Local Market	5
6. Others	5

18. Sell to same trader?

	% respondents
Yes	14%
No	86%

19. Major household Economic Activities

Activity	% respondents
1. Fishing (family)	35.0
2. Fishing (employee)	16.0
3. Fishing (employer)	15.0
4. Fishing + Agriculture	22.5
5. Service provider	3.0
6. Others	8.5
Total	100.0

20. Other sources of Income

Source	% respondents
1. None	62
2. Agriculture related activity	14
3. Business/trade	14
4. Craftsman	3
5. Transport	2
6. Other	5

21. Monthly household Income from fishing only

Income category	% respondents
1. Between Tshs.13,000 – 60,000/-	28
2. Between Tshs. 21,000 – 30,000/-	17
3. Between Tshs. 60,000 – 100,000/-	16
4. Between Tshs.11,000 – 20,000/-	13
5. Less than Tshs.10,000/-	11
6. Other	15

22. Income from other sources

Income category	% respondents
1. Less than Tshs.10,000/=	30
2. Between Tshs. 11,000 – 20,000/=	20
3. Between Tshs. 21,000 – 30,000/=	18
4. Between Tshs. 31,000 – 60,000/=	20
5. Between Tshs.61,000 – 100,000/=	8
6. Other	4

23. Duration in Fishing

Years	% respondents
1. <10 years	58
2. Up to 15 years	16
3. Up to 20 years	13
4. Up to 30 years	7
5. > 30 years	6

24. What is your role as a fisher?

Role	% respondents
1. Boat owner + fisher	44
2. Fishing employee	32
3. Renter of Gear (goats, nets etc)	22
4. Other	2

25. Major catch Species

Specie	% respondents
1. Nile Perch	22
2. Sardine	19
3. Tilapia	1
4. Changu	5
5. Migebuka	4
6. Tasi	4
7. Kolekole	3
8. Mbasia	3
9. Other	

26. Type of Boat used

Boat	% respondents
1. Canoe without engine	85
2. Boat with engine	14
3. Don't use boat	1

27. Fishing Gear used

Gear	% respondents
1. Gill nets	34
2. Handline /hook	19
3. None	19
4. Beach	3
5. Shark nets	4
6. Ring net	4
7. Scoop net	4
8. Fish	4
9. Other	9

28. Ownership of Gear Used

Status	% respondents
Own	57
Don't own	23
Hired	10
Shared	11

FISH CONSUMPTION SURVEY DATA

Appendix Table1: Interviewed Consumer Households by Place of Residence

S/N	Region and distribution			District	Division
	Region	Number	%		
1	Mwanza	101	14.7	Mwanza	Nyamagana, Ilemela
2	Mara	99	14.3	Musoma (U)	Musoma
3	Kigoma	100	14.5	Kigoma (U)	Kigoma N., Kigoma S.
4	Mbeya	101	14.7	Mbeya (U)	Iyunga, Sisimba
5	Dar-Es-Salaam	99	14.3	Kinondoni, Temeke and Ilala	Oysterbay
6	Tanga	87	12.6	Tanga	Pongowe
7	Mtwara	103	14.9	Mtwara (U)	
	Total	690	100		

Source: Field Survey

Appendix Table2 : The Distribution of Fish Consumers by Age

S/N	Age Group (Years)	Number	%
1	Up to 18	13	1.9
2	19 to 25	78	11.4
3	26 to 35	213	31.1
4	36 to 45	176	25.7
5	46 to 55	120	17.5
6	56 to 65	62	9.1
7	Above 65	23	3.3
	Total	685	100.0

Source: Field Survey

Appendix Table 3 : Fish Consumers according to Education Levels

S/N	Education Levels	Number	%
1	None	43	6.2
2	Primary School (1-IV)	98	14.2
3	Primary School (VII-VIII)	291	42.2
4	Secondary School (1-IV)	174	25.2
5	Secondary School (V-VI)	35	5.1
6	Post Secondary/Certificate	13	1.9
7	Diploma	9	1.3
8	Degree	15	2.2
9	Functional Literacy	12	1.7
	Total	690	100.0

Source: Field Survey

Appendix Table 4: Frequency of Eating Fish in Households Per Week

Fish Eating	Fresh Fish		Salted Fish		Fried Fish		Sardines	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Once	116	19.8	187	56.8	131	42.8	184	36.8
Twice	144	24.5	93	28.3	68	22.3	144	28.8
Three	148	25.2	33	10.0	51	16.7	65	13.0
Four	83	14.1	8	2.4	31	10.2	41	8.2
Five	35	6.0	2	0.6	10	3.3	15	3.0
Six	12	2.0	1	0.3	2	0.7	7	1.4
Daily	48	8.2	0.0	0.0	10	3.3	39	7.8
Never	1	0.2	5	1.5	2	0.7	5	1.0
Total	587	100.0	329	100	305	100.0	500	100.0

Source: Field Survey

Appendix Table 5: Fish Value per Shopping

S/N	Range of Value/Amount (Tshs)	Fresh Fish		Salted/Dried Fish		Fried Fish		Sardines	
		Frequency	%	Frequency	%	Frequency	%	Frequency	%
1	Up to 500	173	27.5	171	48.9	115	37.6	393	70.6
2	500 to 1000	202	32.1	131	37.4	115	37.6	114	20.5
3	1000 to 2000	153	24.3	41	11.7	62	20.3	30	5.4
4	2000 to 5000	80	12.7	7	2.0	11	3.6	18	3.2
5	5000 to 10000	17	2.7	0	0.0	3	1.0	1	0.2
6	10000 to 20000	5	0.8	0	0.0	0	0.0	1	0.2
7	Over 20000	0	0.0	0	0.0	0	0.0	0	0.0
	Total	630	100.0	350	100.0	306	100.0	557	100.0

Source: Field Survey

Appendix Table 6: Household Monthly Income

S/N	Range of Income (Tshs)	Frequency	%
1	Below 10000	19	2.8
2	11000 to 20000	22	3.3
3	21000 to 30000	58	8.6
4	31000 to 60000	151	22.4
5	61000 to 100000	170	25.2
6	101000 to 150000	98	14.5
7	151000 to 200000	34	5.0
8	201000 to 300000	37	5.5
9	301000 to 500000	13	1.9
10	Above 500000	12	1.8
11	Reluctant to divulge	29	4.3
12	It Varies	31	4.6
	Total	674	100.0

Source: Field Survey

Appendix Table 7: A Summary of Descriptive Information of Fish consumers.

Item	Consumers Lake Tanganyika				Consumers Lake Victoria				Consumers Lake Nyasa				Consumers Coastal Areas			
	N	Min	Max	Mean	N	Min	Max	Mean	N	Min	Max	Mean	N	Min	Max	Mean
Household Size	100	1	18	6.91	200	1	20	5.63	101	1	16	5.77	285	1	12	4.91
Members below Primary education	100	0	7	2.41	200	0	14	1.82	101	0	7	1.6	272	0	9	1.56
Members with Primary education	100	0	7	2.27	200	0	8	1.74	101	0	7	1.78	285	0	10	1.48
Members above Primary education	100	0	9	0.85	200	0	9	1.45	101	0	8	1.66	285	0	9	1.63
Fresh Fish value per shopping	96	200	2000	759.90	186	150	7000	1186.29	71	300	4000	1331.83	275	200	15000	1993.82
Dagaa value per shopping	99	200	5000	776.77	167	100	5000	414.37	81	100	6000	520.99	206	100	25000	804.61
Salted Fish value per shopping	77	200	3000	623.38	104	100	3000	842.31	89	200	2500	708.54	76	100	400	726.97
Fried Fish value per shopping	10	100	2000	860	130	150	8000	1015.77	25	200	3000	1022.80	138	100	6200	782.97
Last month expenditure on food	100	10000	165000	54.408	174	3000	700000	51984.48	100	4410	120000	44750	287	3500	600000	75545.05
Minimum monthly Income	98	10000	200000	64714.29	185	2500	1100000	58073.51	94	2000	201000	52542.55	257	2000	700000	85123.35
Maximum Monthly Income	98	12000	300000	111321.43	187	4000	120000	107331.02	94	18000	360000	106755.32	258	4000	1500000	131259.69

Source: Field Survey

APPENDIX II
SAMPLE VILLAGES PROFILES

7.7 Village Inventory

Institution/ Community	Nature of Group	Potentialities	Characterisation of problems and needs	Opportunities/Achievements	Emerging Issues
1. Kigombe - Tanga	Fishing Community	<ul style="list-style-type: none"> • Have plenty of sea resources • NGOs operating • Willingness of the people to participate at community issues • Have wide and basic knowledge of many developmental issues 	<ul style="list-style-type: none"> • Price fluctuation of their catches • Unreliability of the markets for their produce • lack of fishing gear supply • Lack of out board engine mechanic • Lack of safe and clean water • Lack of secondary schools, post secondary schools & literacy classes • Lack of credit facilities 	<ul style="list-style-type: none"> • Have conserved the environment 	<ul style="list-style-type: none"> • Unstable prices • Unreliable markets • lack of sewage system and sanitation • 5 %of levy collected is brought back which is peanut • Fishing gears are unavailable
2. Kunduchi - Dar- Es-Salaam	Fishing Community	<ul style="list-style-type: none"> • Have formed economic groups/activities 	<ul style="list-style-type: none"> • No Bus/large trucks/lorry (overland) • lack of fishing gear supply • lack of outboard engine mechanic • Lack of carpenter/boat building & repair • lack of weighing scales • lack of fish processing facilities 	<ul style="list-style-type: none"> • Built modern houses • High awareness on the importance of education & education facilities • 	<ul style="list-style-type: none"> • Some TPDF members still use illegal fishing methods/practices • Fish prices are not guaranteed • Cheating practices are rampant due to the presence of the middlemen (Madalali) - No weighing scales used in this case • 60 % of the HH don't have toilets • Water born and water related diseases are common • The fine imposed to illegal fishers of Tshs. 10,000/- is too small to deter one from practising the same • The village government is not involved in controlling

					<p>illegal fishing</p> <ul style="list-style-type: none"> • No levy collected is ploughed back to the community • People should be involved on decisions and plans related to the sea. •
3. Mlingotini - Pwani	Fishing Community	<ul style="list-style-type: none"> • Willingness for development ventures after being sensitised • 20 % levy is brought back to the community's development issues. 	<ul style="list-style-type: none"> • Unreliable roads during rainy season • Lack of permanent roofed market • Lack of retail drug/shop • Lack of maize mill • Lack of hardware shops • No fuel supply stations • lack of fishing gear supply • Lack of out board engine mechanic • No school institutions, except one primary school • No credit facilities • No preserved breeding grounds • Soldiers participate in illegal fishing methods • No weighing scales • No processing facilities • Lack of good health and sanitary conditions • Unavailability of fishing gears 	<ul style="list-style-type: none"> • Built modern residential houses • Installed electricity in some of their houses • Construction of toilets among various households 	<ul style="list-style-type: none"> • Unaware of existing rules and regulations governing the fishing sector • Need for a permanent patrol on the sea shore • Modern fishing facilities can reduce illegal fishing • Fishing gears should be loaned to the fisher folks and be repaid through community work
4. Mulusenyi - Rugezi Mwanza (Ukerewe)	Fishing Community	<ul style="list-style-type: none"> • 20 % is brought back and used in development matters, e.g. village P/S 	<ul style="list-style-type: none"> • Lack of permanent market stalls • Lack of fishing processing facilities • Lack of general retail shops • Lack of retail drug/medicine • Lack of maize mill 	<ul style="list-style-type: none"> • Assistance for clean and safe water • Expansion of P/S facilities • Health centre required • Maize mills required • Need for good quality legal 	

			<ul style="list-style-type: none"> • lack of hardware shops • Lack of fuel supply stations • Lack of fishing gear lack of out board engine /mechanic • lack of electricity • lack of secondary schools, tertiary education • lack of houses for P/S teachers and classrooms • No extension fisheries officers • Low prices for their catches • Poor health & sanitation, e.g. most HH don't have toilets • Poor relationship between big fishermen and traders • No credit facilities • Fishing gears are available but too expensive • Diarrhoea & bilharzia are common diseases during rainy season • lack of safe and clean water • Piracy is rampant in the lake • 	<p>fishing gears</p> <ul style="list-style-type: none"> • Credit facilities for affordable securities • Security in the lake to avoid piracy 	
5. Bwai - Kumsoma - Musoma Rural MARA	Fishing Community	<ul style="list-style-type: none"> • Existence of Women Savings & Credit Association • Existence of BMUs • 20 % levy is ploughed back for developmental purposes • People are largely involved in most decisions with regard to their lives 	<ul style="list-style-type: none"> • Lack of roofed permanent market stalls • Lack of fuel supply lack of fishing gear supply • Lack of out board engine mechanic • lack of safe and clean water • Lack of electricity • Majority of people suffer from Bilharzia, malaria and typhoid • Lack of secondary & technical schools • Shortage of P/S teachers , 	<ul style="list-style-type: none"> • Are building a Police Station • Have their own TISHARI • Have a road passable throughout the year • Have plenty of fish 	<ul style="list-style-type: none"> • Prices for their catches - too low • Bad relationship between big fishermen and traders • lack of credit facilities despite the high demand • Cheating practices are common in the weighing scales • Prices for fishing gear are too high and their availability not

			<p>classes and text books</p> <ul style="list-style-type: none"> • Lack of a Police station • Lack of a court facility • Lack of a mosque 		<p>guaranteed</p> <ul style="list-style-type: none"> • The present health centre is too small to cater for an increasing population • HIV/AIDS is taking a heavy toll of the fishing community population • Cholera is also a problem; e.g. 9 people died last time due to the disease. • Quality of education is too low due to the shortage of teaching staff
6. Sota - Tarime MARA	Fishing community	<ul style="list-style-type: none"> • Existence of BMUs for preserving the lake ecosystem • 20 % of the levy is brought back and used in building classrooms • Community participation is high on health related issues 	<ul style="list-style-type: none"> • Roads are seasonal • The only means of transport is by Taxi - Mini Bus • No access to water transport • Lack of a permanent roofed market stall • Lack of fuel supply • lack of fishing gear supply • lack of out board engine mechanic • Lack of safe and clean public water supply • lack of medical facilities • Lack of Secondary and technical schools • problems of parents paying fees for their children due to HH hardships • Shortage of classrooms and housing for teachers • Lack of a Primary Court • lack of Credit facilities 	<ul style="list-style-type: none"> • Have built 2 Primary Schools 	<ul style="list-style-type: none"> • Most of crimes are committed in the lake at night • Cheating practices in weighing scales is an order of the day and no body cares to rectify the situation • Poor quality education due to poor facilities and lack of teachers • There are still illegal fishermen

			<ul style="list-style-type: none"> • lack of modern fish processing facilities • Low prices for fish catches, e.g. 400/- for a Kg of Nile perch • lack of permanent toilet facilities by many villagers • lack of credit facilities • None availability of fishing gears, hence the use of local gear • Poor social services , e.g. health, education and water • lack of education with regard to the spread of HIV/AIDs • Most of the people are generally poor • 		
7. Nyabuzera - Biharamulo KAGERA	Fishing Community	<ul style="list-style-type: none"> • Accessible by land and water transport • Have a preserved fishing breeding ground • Existence of BMUs 	<ul style="list-style-type: none"> • Lack of permanent roofed market stalls • Lack of maize mill • Lack of fuel supply • lack of fishing gear supply • lack of out board engine mechanic • lack of carpenter/boat building repair • lack of safe and clean water • lack of electricity • lack of medical facilities • lack of school facilities • lack of credit facilities • Prices for fish catches is too low e.g. a kilo of Tilapia costs 200/- while that of Nile perch costs 300/- - 400/- • Big fishermen force other small fishermen out of fish areas • Cheating practices are high and 	<ul style="list-style-type: none"> • Fishing and fish 	<ul style="list-style-type: none"> • Need for seminars on fishing activities and how to enrich their operations • Need improved services in building boats, fish processing, smoking and packaging as well as affordable prices for the equipment • Fisheries officers should t more in terms of technical training and social mobilisation for community participation

			<p>endemic</p> <ul style="list-style-type: none"> • Fishing gears are e.g. fishing nets are extremely high • Lack almost all basic social services • Existence of water born and water related diseases e.g. cholera, Bilharzia • lack of marketing outlets especially during high catches 		
8. Nyamkazi - Bukoba Urban KAGERA	Fishing Community	<ul style="list-style-type: none"> • Near Bukoba Town • Existence of a BMU for conserving and preserving the lake environment • Availability of both water and road transport throughout the year • Majority of fishermen use boats with powered engines 	<ul style="list-style-type: none"> • Lack of a permanent roofed market stall • lack of a maize mill • lack of fuel supply • lack of fishing gear supply • lack of outboard engine mechanic • Lack of carpenter/boat building and repair • Lack of a medical facility • lack of a police and primary Court • Lack of credit facilities • Lack of fish processing facilities • Unfair price given by businessmen to fishermen • bad relationship between big fishermen and small artisanal fishermen • Credit facilities are lacking • Fishing gears are available at a higher price • Cheating practices are rampant • Illegal fishing is still practised • Though many people are aware of HIV/AIDs but still they do practice unsafe sex and many 	<ul style="list-style-type: none"> • Succeeded in getting rid of illegal fishing • have succeeded in conserving the lake ecosystem 	<ul style="list-style-type: none"> • Laws need to be amended to empower BMUs to persecute illegal fishermen • The present rules and regulations are good the only problem is for the official entrusted to enforce them they normally bend them on their own favour. • The fishing communities should be involved by the government to act as watch dogs for dishonest officials • They would like to have their own equipment and raw materials for building boats, fish processing, smoking and packaging.

			<p>people are dying in big number</p> <ul style="list-style-type: none"> • malaria, diarrhoea and typhoid fever are common diseases facing the community 		
9. Kinagi - Bumbile Biharamulo KAGERA	Fishing Community	<ul style="list-style-type: none"> • Plenty of lake resources, e.g. fish and Sardines • Presence of a BMU • Level of awareness on community participation is very high among the villagers 	<ul style="list-style-type: none"> • Lack of reliable water and road transport • Price fluctuation of their catches • Unreliability of the markets for their produce • Lack of fuel supply • lack of fishing gear supply • Lack of out board engine mechanic • Lack of safe and clean water • Lack of educational facilities • Lack of credit facilities • No any medical facility • lack of landing sites • lack of weighing scales • lack of fish processing/trading facilities • The prices are too low compared to labour charges • health and sanitation is generally poor • Bad relationship with govt. officials whom they accuse of collecting levy at the time they don't have the money • Their relationship with big fishermen is extremely bad, e.g. they drawn some fishing gears of small fishers or confiscate their fishing gears, leave alone others being beaten • Cheating practices are common and people have gone to an extent of reporting the matter to the 	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • Big fishermen claim to own part of the lake and go to an extent of refusing small fishermen from fishing in their self declared empires • They would like to see 50 % of the levy accrued from their locality is brought back to their developmental activities

			<p>Police</p> <ul style="list-style-type: none"> • The prices for fishing gears are too high for small fishers to afford • There is literally no any social service in the islands • HIV/AIDS is claiming a heavy toll of the fishing population • Typhoid fever, malaria and Diarrhoea are the leading killer diseases 		
10. Nyakalilo - Sengerema MWANZA	Fishing Community	<ul style="list-style-type: none"> • Have plenty of sea resources • NGOs & BMU operating • Willingness of the people to participate at community issues • Accessible to water transport • Have a fish preserved breeding ground • Presence of 18 boats powered with engines • Presence of 48 fishermen with 62 non powered engines • Presence of 174 fishing labourers without fishing gears • Have a big unused electrical generator for producing electricity • Willingness of the community members to participate in community works • 	<ul style="list-style-type: none"> • Land transport is a problems & roads are impassable during rainy season • Lack of a modern roofed permanent market stall • Lack of a carpenter/boat building/repair workshop • Lack of clean and safe water • Presence of water born and water related diseases, e.g. Bilharzia, malaria and hookworms • Lack of credit facilities • Existence of illegal fishing methods and practices, e.g. small nets with less than 5", water splashing, poisonous fishing & the use of MAKOKOLO • Lack of fish processing facilities • Prices for their fish catches are unreasonable, e.g. Tshs. 350/- per kilo of a Nile perch • Poor health and sanitary conditions • Govt. officials need to cement their relation with members of BMUs • Bad relationship between fishermen and traders 	<ul style="list-style-type: none"> • Have built 1 P/S • Have contributed Tshs 3 million for rehabilitating their Health Centre • Rehabilitated a road of 4 Kms • 	<ul style="list-style-type: none"> • Cheating practices with regard to prices of fish catches are high and there is currently a case of that nature under the Police • Land laws are at the advantage of Illegal fishermen despite votes caste by the people implicating them • Seminars should be conducted to enlighten BMUs and other members of the Community

			<ul style="list-style-type: none"> • Lack of credit facilities • Presence of many preventable diseases, e.g. Bilharzia, Malaria, Hookworms, HIV/AIDs • 20 % levy is not brought back to the village development activities 		
11. Lugata - Sengerema MWANZA	Fishing Community	<ul style="list-style-type: none"> • Access by land and water transport • Have a landing beach • Have a common market • Have a Village Committee for Environment and Sanitation which encourage people to keep their surroundings clean • There is currently good relation between big fishermen and traders 	<ul style="list-style-type: none"> • Lack of a permanent roofed market stall, • Lack of a hardware shop, • Lack of fuel supply station • Lack of fishing gears supply • Lack of out boat engine mechanic • Lack of carpenter/boat building and repair workshop • Lack of safe and clean water • presence of communicable diseases, e.g. malaria, Diarrhoea and Bilharzia • lack of electricity from the National Grid • Still some fishermen are using illegal fishing methods and practices • Lack of fish processing modern facilities • Low prices for their produce/catches • Lack of credit facilities • Many weighing scales used for weighing fish catches are tempered to exploit fishermen • The prices of fish gears are too high apart from their availability • Adequate basic social services still lacking 	<ul style="list-style-type: none"> • Have a lading beach & a common market • Reliable water transport 	<ul style="list-style-type: none"> • Lack of reliable fishing market • Lack of credit and loan facilities for the fishing communities
12. Katonga-Kigoma	Fishing Community	<ul style="list-style-type: none"> • Near Kigoma town 	<ul style="list-style-type: none"> • Malaria, typhoid and cholera fever are common diseases 	<ul style="list-style-type: none"> • Have fish landing sites 	<ul style="list-style-type: none"> • Presence of armed robbery in Lake

		<ul style="list-style-type: none"> • Accessible to health and education facilities • Availability of Community Based Organization • Willingness of the community to participate in development issues. • Readiness of community on cost sharing of social services • Have accessible road throughout the year • Existence of good relationship between fisheries and government officials 	<p>fever are common diseases facing the community</p> <ul style="list-style-type: none"> • Shortages of education facilities (classrooms, teachers, desks) • Sexuality and HIV/AIDS issues becoming a problem • Lack of credit facilities • Lack of fish breeding grounds • Lack of weighing scales • Lack of extension services/fisheries officers • Lack of fishing gear supply • Lack of out board engine mechanic • High prices of fishing gears 	<ul style="list-style-type: none"> • participated in the construction of secondary school • Participated in the construction of water supply systems • Market cleanliness including construction of public toilet 	<p>robbery in Lake Tanganyika cause frequent loss of fishing gears (Since 1999 community lost 130 million Tshs.)</p> <ul style="list-style-type: none"> • Unaware of existing rules and regulations governing the fishing sector • No by-laws for serving fishing sector • Community need to own and manage boat for patrol purposes • People are very eager and ready for community participation works. • The aim it to form Katonga Fisheries Unity in the near future
13. Kipili – RUKWA	<ul style="list-style-type: none"> ▪ Fishing Community 	<ul style="list-style-type: none"> • Plenty of lake resources • 80 % of its residents are involved in fish and fish related activities • Accessibility to water transport • Lack of cheating practices • Willingness of the community to participate in community works • Good relationship with 	<ul style="list-style-type: none"> • Unreliable road transport • Permanent roofed market lacking • No retail drug/medicine • Lack hardware shops • Outboard engine mechanic missing • No electricity • Lack of weighing scales • Lack of safe and clean water supplies 	<ul style="list-style-type: none"> • Constructed one Primary School and one Secondary School • Involved in the construction of wells and solar energy for safe of water • Increased food production 	<ul style="list-style-type: none"> • Lack of modern fish processing facilities • Lack of weighing scales • Unreliability of market outlets for their fish produce

		fisheries officers	<ul style="list-style-type: none"> • Deforestation as a result of wood fuel • Lack of medical facilities • Presence of communicable diseases • Shortage of Primary school and Secondary School Staff • Lack of teaching and other school facilities • No student passed to Secondary school since 1980 - 2000 • Poverty is rampant • Low prices and unreliability of market for their fish • Lack of credit facilities • Lack of fishing gear shops • Inefficient management of the lake ecosystem • High illiteracy rate • Need for enforcement of the existing laws and regulations with regard to illegal fishing methods and practices • Village leaders are also involved in illegal fishing practices and methods • 20 % levy is not ploughed back to the community • Lack of fishing equipment • Lack of agricultural extension services • 		
14. Kajunjumele Kyela – MBEYA	<ul style="list-style-type: none"> ▪ Fishing Community 	<ul style="list-style-type: none"> • Availability of a number of fish species • Presence of preserved fish breeding grounds 	<ul style="list-style-type: none"> • Unreliable land transport • Only 5 % are involved in fishing and fish related activities • Unavailability of permanent roofed market 	<ul style="list-style-type: none"> • Sensitisation of the community against bad customary practices • Increased food production • Construction of a dispensary at a ward level 	<ul style="list-style-type: none"> • Village government leaders are involved in illegal fishing practices and methods • High rate of illiteracy and ignorance among

			<ul style="list-style-type: none"> • Lack of general retail shops, hardware shops, tea rooms/restaurants, bars, fuel supply, fishing gear supply, out board engines mechanic, carpenter/boat building and repair • Lack of clean and safe water • Lack of medical facilities • Presence of communicable diseases • General level of poverty and ignorance on the part of the parents with regard to education • Parents discouraged by child labour and lack of concentration in school activities • Low incentives to teachers 	dispensary at a ward level	<p>the members of the community</p> <ul style="list-style-type: none"> • Presence of child labour
15. MCHINGA II – LINDI VIJINI – LINDI	<ul style="list-style-type: none"> ▪ Fishing Community 	<ul style="list-style-type: none"> • Reliable transport • Availability of a number of sea resources • Willing to participate in self-reliance activities 	<ul style="list-style-type: none"> • High dependency ratio • Lack of permanent roofed market stalls • Lack of retail drug/medicine shops, food kiosks, hardware shops, fishing gear supply, out board engine mechanic • Low fish prices • Lack of credit facilities • Lack of electricity • Lack of clean and safe water supply • Medical facilities lacking • Lack of Primary School teachers • Inadequate classrooms • Dropouts increases as some pupils join fisheries activities • Lack of preserved fish breeding grounds • Use of illegal fishing methods 	<ul style="list-style-type: none"> • Built a Secondary School • Have formed fishing groups • Involved in salt mining activities 	<ul style="list-style-type: none"> • HIV/AIDS is becoming a major threat for the survival of the fishing communities • Village officials have prepared bills which will assist stopping theft and abuses in the village • Would wish to be assisted in modern fish processing facilities

			<ul style="list-style-type: none"> • Lack of weighing scales • Lack of health officers Lack of boats, out boat engines and fishing lamps • Presence of local fish processing facilities and methods 		
16. MSIMBATI – MTWARA RURAL - MTWARA		<ul style="list-style-type: none"> • No credit facilities • Unavailability of water transport • Lack of permanent roofed markets, general retail shops, medicine shops, maize mills, fuel supply • Lack of out board engine mechanic • Lack of weighing scales • Lack of modern fish processing facilities • Lack of safe and clean water supply • Presence of communicable diseases • Shortage of Primary school teachers, only 4 instead of 12 in a school • High rate of truancy among pupils • Need for more primary school teachers to increase the quality of education • Youth unemployment is high 	<ul style="list-style-type: none"> • Have succeeded to stop illegal fishing practices • Have also prohibited the haphazard harvest of mangrove trees 	<ul style="list-style-type: none"> • Presence of a committee dealing with the management of ocean's ecosystem is an added advantage 	<ul style="list-style-type: none"> • Youth unemployment is very high

7.8 Institutional and Focus Groups

Institution/ Community	Nature of Group	Potentialities	Characterisation of problems and needs	Opportunities/Achievements	Emerging Issues
1. Kunduchi Fisheries training Institute - Dar-Es-Salaam	Training Institution	<ul style="list-style-type: none"> • Have capacity to train modern fishing methods and practices 	<ul style="list-style-type: none"> • Upgrading training to more advanced levels • Updating its education scheme 	<ul style="list-style-type: none"> • Have trained most of the fisheries officers in this country as well as extension officers 	<ul style="list-style-type: none"> • Application of illegal fishing methods by some of the fishermen
2. Kunduchi Environmental and Development (KUED) - Dar-Es-Salaam	Environmentally oriented	<ul style="list-style-type: none"> • Have the potential to create environmental awareness to the community, prevent environmental hazards caused by air pollution, mining, combat dynamite fishing and industrial waste 	<ul style="list-style-type: none"> • Problems facing marine conservation is poverty, ignorance, illiteracy and marine degradation • Conducting specialised courses related to environmental conservation • Attending short and long term training on environmental conservation issues • Procurement of modern teaching aids • Organise Video show programmes • Establishing awareness to various stakeholders 	<ul style="list-style-type: none"> • Have succeeded in stopping pollution in Salasala Quarrying site • Have been able to counsel the impact of fishermen using dynamite for fishing 	<ul style="list-style-type: none"> • Training needs for various stakeholders with regard to environmental issues
3. Mradi wa Mazingira wa Hifadhi ya Mazingira wa Mwambao - TANGA	<ul style="list-style-type: none"> • Environmentally oriented 	<ul style="list-style-type: none"> • The community where the group works is aware of the importance of the ecosystem because they depend on the sea for their livelihood • Villagers co-operate very closely with the group in preserving and protecting the sea ecosystem, e.g. identifying and reporting illegal fishermen 	<ul style="list-style-type: none"> • Shortage of financial resources to perform the group's duties effectively • Most fishermen have obsolete fishing gears and cannot increase their income to eradicate their poverty situation • Would like to get fishing training on modern fishing facilities • Training for the way of managing groups as well as finances accrued thereafter • The price for MWAMI 	<ul style="list-style-type: none"> • Have succeeded in planting Mwami, Mikoko and other types of trees along the sea shore to preserve the ecosystem • Managed in controlling fish ecosystem and illegal fishing style 	<ul style="list-style-type: none"> • Many people would like to see formation of co-operative society (saving & credit) for the fishing communities • There is also a consensus on establishing community fisheries facilities for common use

			<p>products is too low and the market is non-existent</p> <ul style="list-style-type: none"> • Fish feed on the MWAMI planted by the group 		
4. Federation Association of Women Entrepreneurs Tanzania - FAWETA TANGA	<ul style="list-style-type: none"> • Women Entrepreneur Group 	<ul style="list-style-type: none"> • Have potential to alleviate poverty through petty business, e.g. selling Buns, fish, etc. • Have the knowledge of doing business and the intention of succeeding 	<ul style="list-style-type: none"> • Have no facilities to upgrade women who have formed developmental groups • Have no initial capital to establish their own business • PRIDE & POVERTY AFRICA don't reach them because of their level of poverty • Lack of a marketing place for their products • Lack of general cleanliness • Training need for fund mobilisation, doing business and hygiene 	<ul style="list-style-type: none"> • Have succeeded in organising the groups 	<ul style="list-style-type: none"> • The society should be sensitised on the role of women in the society
5. Kitanga Development Foundation - TANGA	<ul style="list-style-type: none"> • Developmental oriented NGO 	<ul style="list-style-type: none"> • The community is positive and see the importance of the NGO in alleviating their poverty • Have the potential to sensitise the community on conserving the environment 	<ul style="list-style-type: none"> • Lack of modern working technology in their daily activities • Poor inputs (nets, vessels, etc.) • Shortage of financial resources 	<ul style="list-style-type: none"> • They are finalising the registration of their group to a legally recognised institution to facilitate the development of Kigombe Village 	<ul style="list-style-type: none"> • The group's major goal is to alleviate and/or eradicate poverty to its members
6. Tanga Coastal Zone Conservation Development Programme TANGA	<ul style="list-style-type: none"> • Environmentally oriented group 	<ul style="list-style-type: none"> • Have the capacity to train various stakeholders to manage coastal resources • Have the potential to develop, implement and monitor collaborative coastal and marine management plans • The community is highly aware of the importance of the coastal and marine ecosystem 	<ul style="list-style-type: none"> • Destructive fishing practices are still rampant 	<ul style="list-style-type: none"> • The programme has been very successful because of application of sound technical basis and effective participation of stakeholders • The programme is one of the most successful one in the West Indian Ocean and Internationally • Specialisation in marine science especially coral reefs and reef fish management 	<ul style="list-style-type: none"> • Need for establishing co-operative societies and common fishing facilities for the fishing communities

<p>7. Fisheries management Component of LVEMP - Nyamagana MWANZA</p>	<ul style="list-style-type: none"> • Environmentally oriented group 	<ul style="list-style-type: none"> • Have the potential to protect, conserve, develop and rationally exploit the lake/marine fishery resources and environment fully • The group uses a bottom up approach in implementing its duties 	<ul style="list-style-type: none"> • Usage of illegal fishing gears by some of the fishermen • Increased free access to fishing • Encroachment to breeding and nursery grounds 	<ul style="list-style-type: none"> • Fish catches have increased as a sign of success in preserving the lake ecosystem • The number of fishermen using legal gears has also increased • The community has been increasingly been involved in the management of the resources through BMUs • Need for training on fisheries laws and regulations to fishermen • Need for fisheries extension officers with mass communication skills • Need for establishment of fishing co-operative societies 	<ul style="list-style-type: none"> • The importance of improved fish quality and safety assurance • Need for the enforcement of the rules and regulations governing the fishing sector • Existing conflict between big fishermen and small ones
<p>8. MISIWO - Musoma Urban MARA</p>	<ul style="list-style-type: none"> • Savings & Credit 	<ul style="list-style-type: none"> • There is already organised savings and credit facility for poverty eradication 	<ul style="list-style-type: none"> • Members don't return the loans on time • Co-operative officials don't know the meaning of co-operatives and hence they normally give false advises on running them • Negative government outlook towards NGO's • The co-operative is good but is encountered by individualistic problems • Big fishing companies continue to make small fishermen even more poorer • There is a negative connotation that fisheries officers are enemies of the fishermen because they always confiscate their working 	<ul style="list-style-type: none"> • Fishing levy is too high the government should reduce it • The problem of fishing by poison seem not to have been given a solution yet • the government should import facilities which could be used to detect between a poisoned and a non poisoned fish 	

<p>9. Mkendo Wavuvi Samaki - Multi Purpose Co-operative Society Musoma Urban MARA</p>	<ul style="list-style-type: none"> Marketing Trading Group 	<ul style="list-style-type: none"> Have an experience in fishing and selling (fresh fish) and buying dried fish from the community Have the capacity and experience of training business education related to fishing activities to its members and the community at large 	<p>facilities</p> <ul style="list-style-type: none"> Currently the group doesn't involve itself in fishing due to lack of fishing gears Theft on fishing gears Illegal fishing is still practised though to a lesser extent The lack environment and sanitation is not encouraging Need of having Savings and Credit facilities for assisting the poor and disadvantaged groups to sustain in their daily life Ned for a common facility for the small fishermen that will assist them in counteracting the purse power of fisheries companies in the fishing sector. 	<ul style="list-style-type: none"> People have been able to report and even apprehend people using illegal fishing gears 	<ul style="list-style-type: none"> There are big problems between fishing companies and small artisan fishermen, e.g. the former use their purse power to make them as foreigners in their own lake/land There is a need for the government to continue employing fisheries extension officers for sustainable fishing development There is an emergence of time and again killings among the fishing communities, e.g. there a belief that there is no government existence in the islands and hence the state of lawlessness prevails.
<p>10. LANESO - MARA</p>	<ul style="list-style-type: none"> Environmentally oriented 	<ul style="list-style-type: none"> It has committed members in the fight to protect and preserve the lake's ecosystem through education and by way of examples The community perceives LANESO as a potential force in the war against water hyacinth, illegal fishing and soil conservation as well as checking if industries no longer pollute the lake 	<ul style="list-style-type: none"> Due to poverty people still uses illegal fishing methods and practices. This is despite the fact of knowing the impact of using such methods and practices for the sustainable future of the lake resources There is a difficult of establishing fishing co-operatives because many people have the experience of the dying co-operative societies, e.g. NYANZA, SHIRECU, KNCU, etc. 	<ul style="list-style-type: none"> Industries have improved their sewage systems hence controlled high rate of water pollution to the lake Illegal fishing methods and practices have to a certain extent been able to be controlled The community has been motivated to plant trees in order to conserve the lake's environment 	<ul style="list-style-type: none"> There is bad relation between fisheries officers and the fishermen. The later sees the former as a policeman looking for bribe There is an allegation that fisheries officers are used to taking bribes from the fishermen The fish sold by fishermen to the

		through their activities	<ul style="list-style-type: none"> • Many fishermen are permanent migrants they don't stay in one place for ever • There is a need to continue giving education among the community in the lake's conservation efforts and the fight against HIV/AIDS • Need to have books, video tapes geared towards the improvement of the lake's ecosystem • Need to have stable financial resources for smooth operation of its activities 		<p>companies is by loan and not cash</p> <ul style="list-style-type: none"> • And the cheating practices among the fishing companies on the fishermen produce are too high.
11. Maendeleo ya Ardhi, Jamii na Hifadhi ya Mazingira Mara (MAJIMAMA) - Musoma Urban MARA	<ul style="list-style-type: none"> • Environment and Community Development Group 	<ul style="list-style-type: none"> • The group has been received and being perceived positively by the community because of the good things they are doing • The group normally networks with other environmentally and developmental oriented groups in its operation • The group has a legal status • The number of people joining the NGO as members is increasing drastically which is a good sign that the NGO is acceptable to the people 	<ul style="list-style-type: none"> • The community has been motivated to work with the group in performing its duties. However the group faces problems related to transport which is unreliable as well as communication system in general • Some community members have been demoralised by lip service NGOs which promised but failed to deliver • The NGO fails to implement all its plans because of lack of capital • Saving and credits societies are existing but many have died a natural death due to bad leadership, failure of the members to return the loan on time, etc. • The fishing co-operative is good but the problem is that many fishermen don't stay permanently in one place something, which 	<ul style="list-style-type: none"> • The NGO has succeeded in planting 4,000 trees to conserve the lake environment 	<ul style="list-style-type: none"> • Fishing companies buy fish catches from the smaller fishermen on credit and not cash • And the cash that is later on given after long follow is too low, i.e. the price of fish is too low, e.g. 300/- Tshs per Kilo of Nile perch • The relationship between a fisherman and the fisheries extension office is that f a cat and rat

			<p>makes it difficult to trace them in case they vanish away with group properties.</p> <ul style="list-style-type: none"> • Need for fisheries extension officers to live among the fishing communities in order to be near with them in case of problems that need their attention • Need for fishing gears to be obtained at a cheaper price to avoid people using illegal fishing gears 		
12. Bukasiga Fishing Company Society Ltd. - Ukerewe MWANZA	<ul style="list-style-type: none"> • Fishing Co-operative Society 	<ul style="list-style-type: none"> • Has a legal status • Highly respected and positively perceived by the community • Has the potential to eradicate poverty within the members of the community through increasing their income, creating employment and looking for reliable markets for the produce of the members 	<ul style="list-style-type: none"> • there is poor interaction between the fisheries officers and the fisher folks • Need to educate members, staff and committee members on the co-operative movements • Training of modern fishing methods to the members is also of paramount importance • Need to conduct business training among the co-operative members 	<ul style="list-style-type: none"> • Have succeeded to build an executive Guest House for the Visitors to the island • managed to plant trees and educating the members of the co-operative on the importance of the lake ecosystem 	<ul style="list-style-type: none"> • None
13. USAMAU SAVINGS & CREDIT COOPERATIVE SOCIETY LTD - Ukerewe MWANZA	<ul style="list-style-type: none"> • Savings & Credit Society 	<ul style="list-style-type: none"> • Legal recognition • Well accepted by the community and many more members are expected to join • Its members are involved in environmental conservation efforts of the lake, e.g. through planting trees, cleaning the beach, etc. • Good relationship with fisheries officers 	<ul style="list-style-type: none"> • Most fishers are not aware of the rules governing fishing in their areas. • The co-operative wish to introduce some training sessions for their members on various aspects of their activities 	<ul style="list-style-type: none"> • The group has successfully been contracted by the district council to collect levies/taxes and is doing the job very well. 	<ul style="list-style-type: none"> • There is a need of motivating members of the community and the general public on the importance of keeping the lake ecosystem clean.
14. TWEYEMBE WOMEN'S	<ul style="list-style-type: none"> • Women Fishing Group 	<ul style="list-style-type: none"> • Has legal status • Have the potential to 	<ul style="list-style-type: none"> • Unlawful fishing methods and practices 	<ul style="list-style-type: none"> • Satisfactorily - due to the theft of their nets 	<ul style="list-style-type: none"> • Big fishermen seem to be a menace to the

FISHING ENTERPRISE - Muleba KAGERA		<p>improve the status and role of women</p> <ul style="list-style-type: none"> The community has a positive perception of their business 	<ul style="list-style-type: none"> Use of prohibited fishing gears Presence of water hyacinth Theft of their fishing gears (nets) Some of their nets were destroyed by big fishing agents (Greek - Shera Camp - Iramba Island) Training need to enable members to financially manage their enterprises Training need on Project Write up Seminars on gender awareness/education Need of new fishing nets so that they can resume their fishing activities 		<p>women enterprise. For whenever they start fishing their fishing gears are either confiscated and/or destroyed by their agents</p>
15. LANESO - KAGERA	<ul style="list-style-type: none"> Youth, Women, Environmentally Oriented 	<ul style="list-style-type: none"> Legally registered group Has committed members Have relatively good facilities for performing their duties High involvement of the community in its duties 	<ul style="list-style-type: none"> Lack of training for fishermen No enough fishing gears, e.g. nets, engines, modern vessels No sufficient latrine No sufficient working tools, e.g. for water hyacinth manual removal Illegal fishing practices in the lake Pollution due to non availability of sanitation projects 	<ul style="list-style-type: none"> Achieved in implementing community participation in manual removal of water hyacinth in the lake To a large extent have succeeded to curb illegal fishing by some fishermen 	<ul style="list-style-type: none"> Capacity building training to various stakeholders and some official staff on how to conserve and protect the environment of lake Victoria Need for Environmental Impact Assessment
16. LVEMP – Biharamulo KAGERA	<ul style="list-style-type: none"> Environmentally oriented group 	<ul style="list-style-type: none"> Have a backing of LVEMP finances and assistance Incorporated with the Central and local govt structures 	<ul style="list-style-type: none"> Use of chemicals in fishing is still existing Occurrence of water hyacinth Application of under meshed fishing nets by some fishermen Lack of environmental awareness among the people Need to train some of the stakeholders on environmental In order to have an impact on 	<ul style="list-style-type: none"> Not quite successful since some fishermen are still operating with illegal fishing gears 	<ul style="list-style-type: none"> Protection and preservation of lake resources

			the management of lake resources, fisheries staff should be of higher level of education than it is now		
17. BMU KATOBOFU – Muleba - KAGERA	◆ Environmentally oriented group	◆ Have a backing of LVEMP organisation	<ul style="list-style-type: none"> ◆ Superimposed from above ◆ Have been unable to control the Big fishing companies (Geek, Solole Beach, Kitana) who use illegal fishing gears and the govt has remained silent despite their repeated reports ◆ They don't have modern fishing and processing gears for Sardines and Nile perch ◆ Don't have a reliable market for their products ◆ Need for training in modern fishing gears and their maintenance ◆ Training on sanitary and good quality fish ◆ There is bad relation with big fishers who harass small fishers by destroying their fishing gears and confiscating them; sometimes they drown them in water, threaten them with guns, beat them severely, etc ◆ There is too much piracy in the lake today 	◆ So far many fishermen are no longer using KATULI, nets with small eyes and fish poisoning	◆ Conflicts between big and small fishermen
18. Kagera and Agricultural Environment Management Project (KAEMP_ - Muleba - KAGERA	◆ Partially environmentally oriented project	<ul style="list-style-type: none"> ◆ Donor financed project ◆ Grassroots project ◆ Legally recognised ◆ Incorporated with local government structures ◆ Positively perceived by the people 	◆ None	<ul style="list-style-type: none"> ◆ Successes are evidenced by the increase number of villagers practising modern agricultural techniques ◆ Number of feeder roads constructed have increased ◆ Number of beneficiaries of safe and clean water has also 	◆ None

				increased drastically ◆ Water born and water related diseases have dropped drastically	
19. Fisheries Office (DRDP and LVEMP) – Muleba KAGERA	◆ Fisheries Management	<ul style="list-style-type: none"> ◆ Have well established structures of operation ◆ Have qualified manpower to perform their assigned duties and objectives 	<ul style="list-style-type: none"> ◆ Increased of fishing efforts ◆ Depletion of fish stock ◆ Deterioration of the ecological health of the lake as a result of rapidly growing population, clearance of natural vegetation along the shores, disappearance of several fish species native to the lake, prolific increase of algae and dumping of untreated effluent by several industries and use of prohibited fishing gears ◆ Inadequate of research information about lake ecosystem ◆ Inadequate/lack of fund to implement resource management activities ◆ Lack of capital for fishers to purchase modern fishing gears ◆ Need for training fishers on management of co-operatives objectives and regulations ◆ Integration of gender component amongst the fishing communities 	<ul style="list-style-type: none"> ◆ Illegal fishing gear and practices reduced/surveillance improved ◆ Participation of communities in fisheries resources management increased ◆ Abuse of lake environment reduced ◆ Awareness creation on environmental creation increased 	◆ Need for further research with regard to the lake ecosystem
20. LVEMP – TASK LEADER KAGERA	◆ Environmentally oriented	<ul style="list-style-type: none"> ◆ Have a backing of LVEMP finances and assistance ◆ Incorporated with the Central and local govt structures 	<ul style="list-style-type: none"> ◆ Inadequate funding for its activities ◆ BMUs not yet recognised by the laws of the land ◆ Lack of working facilities, hence illegal fishing with illegal gears is still rampant ◆ Immature Nile perch collected will cause the depletion of the 	<ul style="list-style-type: none"> ◆ Formation of savings and credit as well as co-operatives for fishers is vital ◆ Only wrong doers who don't want to co-operate with fisheries officers, but now most of the people in the community have good relationship with the officials 	

			<p>species</p> <ul style="list-style-type: none"> ◆ Trans boarder business increases illegal fishing in the islands ◆ Trans boarder fish export and fishing ◆ Immature fish still being caught by illegal gears ◆ Communities don't change immediately ◆ Harmonisation of laws is taking a long time hence people move from one place in country to another place ◆ Staff and communities especially BMUs should be trained on environmental issues e.g. through study tours, seminars, meetings, etc. 	<ul style="list-style-type: none"> ◆ The community and fisheries staff with the assistance of the governments for funding together with the neighbours could effectively manage the lake ecosystem and resources 	
21. Mwaloni Market Traders Development Society MWADESO MWANZA	<ul style="list-style-type: none"> ◆ Traders 	<ul style="list-style-type: none"> ◆ Have a legally recognised society ◆ It is an umbrella organisation of many smaller groups of traders ◆ Highly committed and motivated members 	<ul style="list-style-type: none"> ◆ Water weeds are still a problem ◆ Lack of modern working facilities ◆ Need for basic training on environmental management ◆ Need for sensitisation seminars for all lake stakeholders ◆ Need for basic and continuous education on leadership skills and other related subjects ◆ The relationship with big fishing firms is not good 	<ul style="list-style-type: none"> ◆ Have succeeded in creating unity among various stakeholders or nine groups operating at Mwaloni ◆ Have gone to an extent of empowering the artisan fishermen by giving them seed capital ◆ Have mobilised the groups to form savings and credit groups ◆ Have succeeded to create a common market facility for all traders/members 	<ul style="list-style-type: none"> ◆ Positive on the formation of a co-operative for the fishermen
22. Lake Nyanza Environmental and Sanitation LANESO - MWANZA	<ul style="list-style-type: none"> ◆ Environmentally oriented 	<ul style="list-style-type: none"> ◆ Legally registered group ◆ Has committed members ◆ Have relatively good facilities for performing their duties 	<ul style="list-style-type: none"> ◆ High level of lake pollution ◆ Bad fishing methods and practices ◆ Destruction of fishing spawning grounds 	<ul style="list-style-type: none"> ◆ The success has been relative because of inadequate working facilities as well as financial resources 	<ul style="list-style-type: none"> ◆ Training on environmental management of the lake ecosystem

		<ul style="list-style-type: none"> ◆ High involvement of the community in its duties 	<ul style="list-style-type: none"> ◆ Over-fishing ◆ Need for training in fish culture to reduce Over-fishing ◆ Training on sustainable fishing practices ◆ Training on pollution mitigating measures ◆ Training on the conservation of wetlands ◆ Continuous public awareness creation on fisheries management 		
23. BMU NTAMA – LUGATA Sengerema	<ul style="list-style-type: none"> ◆ Environmentally oriented 	<ul style="list-style-type: none"> ◆ Have a backing of LVEMP organisation ◆ Willingness to conserve and protect the lake ecosystem 	<ul style="list-style-type: none"> ◆ Theft of fishing gears ◆ Armed robbery in the lake ◆ Bad relationship between big and small fishers ◆ Diminishing number of fish catches which makes fishermen to be nomads ◆ Lack of modern fishing gears ◆ Training on running co-operatives Training on modern fishing methods and seasons 	<ul style="list-style-type: none"> ◆ The idea of co-operative society for the fishermen is good provided it is not hijacked by the well to do and elite ◆ The government should provide loans to small fishers to buy nets instead of running an operation to confiscate 300 nets while the operation could have cost the govt 20 million shillings ◆ Awareness campaigns should be run to educate the mass on the impact of illegal fishing gears for themselves and their future generation 	
24. BMU NYAKALILO Sengerema	Environmentally oriented	<ul style="list-style-type: none"> • Have a backing of LVEMP organisation • Willingness to conserve and protect the lake ecosystem 	<ul style="list-style-type: none"> • Lack of working facilities; e.g. Patrol boats, sport lights life jackets, etc. • Doesn't have legal power to persecute the culprits outside their areas of jurisdiction • Need for co-operative training and advanced fishing methods 	<ul style="list-style-type: none"> • Many fishers have ceased using illegal fishing gears 	<ul style="list-style-type: none"> • People have no confidence with the way the govt manages the lake resources, e.g. the govt doesn't take any action to protect small fishers bullied by big fishers, the prices for their catches are too low compared to

					<p>what big companies get</p> <ul style="list-style-type: none"> • The levy collected from them is not brought back to their areas of domicile for developmental purposes
25. JUHUDI GROUP – NYAMKAZI BUKOBA URBAN KAGERA	<ul style="list-style-type: none"> • Men and Women Fishing Group 	<ul style="list-style-type: none"> • Willingness to co-operate • Committed to their group objectives 	<ul style="list-style-type: none"> • Theft of their fishing gears • Lack of substantial capital to expand their activities • Most grants and loans have been targeting the rich than the poor • Lack of training on how to run organisations/groups • The price for their produce/catches is very low 	<ul style="list-style-type: none"> • Their organisation is still infant and therefore cannot make impact evaluation 	<ul style="list-style-type: none"> • The govt. should make follow up to big fishermen who own part of the lake and prohibit other fishermen from using the same area, e.g. in Bumbile a Greek owns his own water body which he patrols it with armed soldiers • Big fishers are using freights of boats and too long nets contrary to the fishing regulations
26. UPENDO GROUP - KIGOMA	<ul style="list-style-type: none"> • WOMEN TRADERS 	<ul style="list-style-type: none"> • Organised group • Willingness to expand their activities to advanced business in processing and distributing Sardines • Are aware of the importance of the lake ecosystem for their livelihood 	<ul style="list-style-type: none"> • Environmental degradation of Lake Tanganyika • Need training on book keeping • Training need on advertising their products • Training need on lake environmental conservation • Need for packaging and transporting education training for Sardines/fish products 	<ul style="list-style-type: none"> • Group's income has increased 	<ul style="list-style-type: none"> • Training related to their group's orientation
27. DAYA GROUP - KIGOMA	<ul style="list-style-type: none"> • TRADERS 	<ul style="list-style-type: none"> • Have a goal to expand their trade nationally and internationally • Registered and organized 	<ul style="list-style-type: none"> • High insecurity in the lake, e.g. plundering • Poor fishing methods • Poor tools and facilities 	<ul style="list-style-type: none"> • Already acquired market as far as Congo, Zambia, Burundi and Rwanda • They obtained a loan/credit 	<ul style="list-style-type: none"> • Need for fishing cooperative society • Collective ownership of basic facilities for

		<p>group</p> <ul style="list-style-type: none"> • Have ten years experience in the trade • The community and group members regard the lake and its ecosystem as very important economic base to the local community and the whole nation because is the source of food/protein and finance 	<ul style="list-style-type: none"> • Lack of credit facilities to the members of community who could borrow to employ themselves in the sector • Obsolete ways and tools of processing and storing Sardines/fish • Need training for capacity building in their group 	from CBI	the fisher folk
28. WOMEN STONE II GROUP - KIGOMA	<ul style="list-style-type: none"> • WOMEN TRADERS 	<ul style="list-style-type: none"> • The don't buy small prohibited fish by law • Have good relationship with fisheries officers 	<ul style="list-style-type: none"> • Low working capital • Unavailability of reliable markets for their produce • Lack of fish processing facilities • Government is uncooperative despite its lip service on eradicating poverty • Need for new fish training methods • Need for training on looking for markets for their produce • Training on book keeping 	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • Formation of Cooperative Societies (Credit and Savings) once assisted to do so • Collective ownership of basic facilities for the fisher folk
29. MANDUNDO GROUP - KIGOMA	<ul style="list-style-type: none"> • TRADERS 	<ul style="list-style-type: none"> • Have potential of trading and fishing • The community has positive perception with the group • Organised group 	<ul style="list-style-type: none"> • Low working capital • Unreliable market • Processing and packaging of their process is unreliable • Need for a loan from a Bank and other donors • Need of training for expanding their business and markets • Need for book keeping training 	<ul style="list-style-type: none"> • Have a qualified accountant • Against mismanagement of group's resources 	<ul style="list-style-type: none"> • Formation of Cooperative Societies (Credit and Savings) once assisted to do so
30. TANGANYIKA GROUP ENTERPRISES - KIGOMA	<ul style="list-style-type: none"> • TRADERS of dried fish and Sardines 	<ul style="list-style-type: none"> • Willing to have collective capital • Positive perception from the people because they sell their commodities to the neighbours on credit 	<ul style="list-style-type: none"> • Poor fishing equipment • High insecurity - routing and plundering done to the fishermen • Poor facilities for processing fish and Sardines • Unreliable markets for their 	<ul style="list-style-type: none"> • Have a constitution that guide their activities • Good relationship with fisheries officers 	<ul style="list-style-type: none"> • Wish to have the formation of credit and savings societies as well as common facilities for the fisher folk

		<ul style="list-style-type: none"> • The group and the community regard the lake as the main source of people's income and living (source of protein/food, base of many traders' commodities/economy) • Have already acquired a trading license 	<p>produce</p> <ul style="list-style-type: none"> • Foreign traders from neighbouring countries such as DRC do disturb their current source of commodity by not following the market procedures as a result the prices at the source rise drastically • Lack of developed market centre • training need on modern fishing and trading tactics among the community members 		
31. Lake Tanganyika Catchment Reforestation and Education (TACARE) - KIGOMA	<ul style="list-style-type: none"> • Environmentally oriented 	<ul style="list-style-type: none"> • Registered NGO • Diversified activities, e.g. environmental education for youth, savings and credit schemes, health and education, etc. • Positively perceived by the community members 	<ul style="list-style-type: none"> • Rapid degradation of the natural resources, e.g. deforestation for domestic as well as for fish processing activities • Soil erosion and causing sedimentation which has affected the lake ecosystem, e.g. some fish species are diminishing such as KUHE • Lack of constant and viable co-ordination between relationship between fisheries officers and the community and other fisheries stakeholders • Training on modern fishing methods • Sensitisation on formation of groups and co-operative societies • Training on lake environmental education and impact of illegal fishing methods 	<ul style="list-style-type: none"> • Community development projects and savings and credit schemes established in 20 • Tree nursery services in 30 villages in Kigoma region • raising environmental awareness in 20 villages and schools outside of the project villages, etc. 	<ul style="list-style-type: none"> • Formation of Savings and Credit Co-operative Society is the only effective approach that has a positive impact on community development • Ownership of a common fishing facility for the fisher folk creates a sense of ownership and eases management
32. WOMEN GROUP - RUKWA	<ul style="list-style-type: none"> • WOMEN GROUP 	<ul style="list-style-type: none"> • Experience in trading fish and Sardines • Positively perceived by the community 	<ul style="list-style-type: none"> • Lack of capital • Lack of modern fishing gears • Lack of reliable market • Use of illegal fishing gears • Plundering on the lake by people 	<ul style="list-style-type: none"> • None so far due to lack of capital 	<ul style="list-style-type: none"> • Second the ideas of formation of savings and credit facilities for the fisher folk as well as the common facility

			<p>from Zaire</p> <ul style="list-style-type: none"> • Unfriendly relationship between fisheries officers and the community and other fisheries stakeholders • Lack of fishing industries • Training need on modern knowledge of fishing and related activities 		for the same
33. MSIMBATI WOMEN GROUP - MTWARA	<ul style="list-style-type: none"> • WOMEN GROUP 	<ul style="list-style-type: none"> • Positively perceived by the community • Have won confidence from shop owners who provide them with nets on credit 	<ul style="list-style-type: none"> • Lack of modern fishing facilities • Use of illegal fishing gears, e.g. Makokoro • Training on modern fishing techniques and marketing • Financial management training 	<ul style="list-style-type: none"> • Have been able to pay school fees for their children and buy other household essentials 	<ul style="list-style-type: none"> • Support savings and credit facilities formation as well as common fishing facility for the fisher folk but need serious management
34. MAENDELEO - MTWARA	<ul style="list-style-type: none"> • Fishermen GROUP 	<ul style="list-style-type: none"> • Long servicing group and recognised by the village government 	<ul style="list-style-type: none"> • Inadequate fishing gears • Modern training techniques and practices on fishing gears • Business management training • Ned for integrating fisheries aspects in our Primary School Curriculum 	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • None

D. 全国ワークショップ報告書

2001年10月30日 - 11月1日

JAPAN INTERNATIONAL COOPERATION AGENCY

**MINISTRY OF NATURAL RESOURCES AND TOURISM
FISHERIES DIVISION
UNITED REPUBLIC OF TANZANIA**

**Report of
A National Stakeholders Workshop
For
The Master Plan Study on Fisheries Development
In
The United Republic of Tanzania**

Venue: TANESCO Training Centre – Morogoro

Date 30th October 2001 to 1st November 2001

**SYSTEM SCIENCE CONSULTANTS INC.
OVERSEAS AGRO-FISHERIES CONSULTANTS CO. LTD.**

1.0 Background:

The background study on fisheries Development in The United Republic of Tanzania started in January 2001 for an 18-month period. (Jan.2001-May 2002). It is executed by two Japanese consultant Companies (SSC and OAFIC) with Fisheries division of the Ministry of Natural Resources and Tourism as a National Counterpart. It is funded by JICA. The project aims to prepare a Fisheries Master Plan that will provide guidance on priority areas for fisheries sector development.

The study team has just completed its interim report that provides ideas for the Master Plan.

This National workshop is held so that the ideas in the interim report will be discussed and agreed by stakeholders. The interim report suggests a number of proposals as priority projects and it aims to discuss these together with the basic concepts and agree on them in a participatory manner. To achieve this various stakeholders have been invited to the workshop among them fishermen, processors traders, some donors and fisher associations.

2.0 Over all Aims.

The workshop had three overall aims as follows;

1. To accord an opportunity for various stakeholders involved in Fisheries in Tanzania to get together.
2. To recognise the roles and responsibilities of each stakeholder.
3. To exchange opinions and ideas to seek ways for developing Tanzanian Fisheries for sustainable future

2.1 Specific objectives

1. To share ideas and come to a mutual agreement on Fisheries Development Master Plan (Interim stage) among all stakeholders
2. To affirm as well as analyze concepts and select priority strategies and projects for further study.

3.0 Methodology

The workshop used participatory processes to achieve the above objectives these included group work and plenary presentations, plenary discussions, panel discussions and question and answer method. In the groups, all were encouraged to talk to ensure they participated. Discussion groups were formed based on water bodies to ensure discussion on localities that people understood well.

4.0 Workshop Process

Participant introductions

The workshop began with participant introductions facilitated by the Fisheries Department counterpart Coordinator. Seventy people were in attendance including the master plan team of Consultants and Counterparts. Represented too were fishermen, processors, marketers and some donor organizations (See list of participants in annex V). In attendance was Mr. Nishizaki from JICA Tokyo as well as Mr. Thomas Maembe, Director of Fisheries.

Opening of the workshop

The Director of Fisheries Department- Mr.T.Maembe opened the workshop, on behalf of The Permanent secretary in the Ministry of Natural resources and Tourism Mr.P Luhanjo. He reiterated that this workshop was a national event, which will go to the annals of history as very important for the Master plan has come when it is highly needed. He encouraged the participants to give their full attention and prioritize their projects according to water bodies and take care of the different sectors (Production, Processing, marketing). He thanked JICA for supporting the whole exercise and wished everyone well (see full speech in annex VI).

Speech by Mr. Nishizaki-JICA TOKYO representative.

Mr. Nishizaki gave a speech and gave a background of the project (full speech in the annex VI).

Nomination of workshop Chairman.

Mr. R.Mapunda, Assistant Director Fisheries in charge of Planning was then nominated as the chairman for the workshop. He took up the duty of the smooth running of the proceeding for the remaining time of the workshop.

JICA team interim report presentations

This was led by Mr. S.Yamamoto who gave an overview of the Master Plan – that it is an 18-month exercise. He also shared the basic concepts and strategies, which were based on the field findings of phase 2 work and were seen by the team as key to the development of the masterplan. These served as the basis for the group work discussions.

Three team members Mr Fujiki, Sato and Iida then presented in detail some findings of phase 2 as well as suggested priority projects (see full presentations in annex I - III). A question and answer session ensued to clarify points from the participants

- . In response to the views presented by the participants, Mr. Iida observed that it is fishery officers in Tanga who suggested a project for processing dagaa. Because dagaa is cheap, they felt that people could afford it. Yet the eventual price of dagaa should include the cost of processing. Dagaa is generally cheap and the price from different sources is generally the same. But if processing is adopted by one area, it will increase the difference in price from one area to another.
- . Responding to views from participants, Mr. Sato observed that the production of "clarias" species should be encouraged. It is true that there is a lot of "clarias" at river Mara. But "clarias" is liked not just for bait but also as food.
 - Weights are usually interrupted with after they have been checked. Therefore the inspection of weighing scales is not enough.
 - The collection of statistics is important and will be emphasized.
 - Taxation is an issue to be pursued by the Ministry, Fishery department.

Panel Discussion.

A panel discussion was held to raise key issue for the different water bodies and sectors. Members included- fisherman from marine, fisherman from Inland, Processors Association, District fisheries officer and one Fisheries division representative.

Points raised by participants in the panel discussion are enlisted below.

- . There is a need to promote the change the type of canoes from the traditional dugout canoes to planked ones.
 - On propagation of fish species in L. Nyasa, he is skeptical about the success since the fish is found at the Lake has been the reason for environmental degradation
 - General improvement of landing sites is necessary for fisheries around L. Nyasa.
 - There is also a need to provide credit to fishing groups. This should be provided in form of a revolving fund.
 - At L. Nyasa, there is also a need for the new technologies proposed for sardine preservation in areas around other water bodies.
- . Lift net is associated with light fishing at night. The timing of this activity with fishing in the evening is different. In addition "clarias" are currently being obtained from Uganda. Has this source of "clarias" been studied?
 - Due to the decline in fish catch, fishermen are known to join nets vertically in order to catch more fish. At the bottom of the joined nets, they may place nets of small mesh sizes, which is illegal.
 - In order to get the commitment of processors to sustainable fishing, a law should be enacted to bind fish processors to invest in fish farming.

- Exploring for a wider market for tilapia is not agreeable. It will deny the people an affordable source of nutrition. Similarly, an illegal fishing method for tilapia, which is being practiced, may be promoted as a result of an expanded market.
- The distribution of projects should be fair so as to include areas such as Mara, Kagera, etc., rather than concentrating most projects in one area. This is because in the past, a larger than fair proportion of projects have gone to Mwanza.
- Fish wars between fishermen and between processors have led to the depletion of fishing fingerlings. Another way in which fish wars have contributed to the depletion of fish stocks is through the pricing mechanism, where attractive prices have reduced the concern for sustainability, with fishers catching fish without discrimination.
- BMU security groups have been doing great job in the Lake region. However, they need education / enlightenment about the law and other regulations so that they can be more effective. Projects should introduce youth fishers group like the ones in Kigoma.
- A common fish market can promote the control and supervision of weighing scales. Pricing will also be fair.
- Fish from Tanzania is often smuggled to Uganda where the buyers offer prices as high as Tsh1, 200 against prices of Tshs600 to 700 in Tanzania.
- Credit provision is a good idea.
- Through community participation, fishing communities could assist in the collection of fish statistics. Community members in their communities should discuss the projects being proposed in the master plan. This would enable people to develop a sense of ownership and commitment. Similarly, community participation would be helpful on issues regarding statistics.

Currently, the limit of the amount of fish that should be fished is not known. Yet a lot of time and money has been used to know how much fish we have. These expenses are born by the processors and fishers. Meanwhile, a lot of discussions about plans concerning the distribution of fishing have been held.

- Regarding sustainable fishing, the participant, who is also the chairman for a processors association, reiterated his commitment to lead a campaign against line fishing because this type of fishing catches the parent fish.
- A need to enforce the use of hooks larger than size 7 and 8, and not beyond that, is useful in ensuring sustainable fishing.
- Conflict in fishing is fueled by small-scale fishers. But the important question is what can be done? Options available range from stopping the use of small mesh nets and jailing processors who support such fishers. It is fishers who gain most from fishing compared to the processors. They have lower costs unlike the processors.
- Differences in prices of fish in Uganda and Tanzania arise from the fact that prices in Uganda are less than the 15% tax imposed in Tanzania. In addition, Uganda's freight charges are 25% less than in Tanzania, which charges a host of other type of taxes to fish processors and transporters. Over all, the price differential adds to about 60US cents.

Knowledge of fishermen is vital in a loan programme. Sometimes, those who are not knowledgeable also repay their loans. The individual nature of the fisherfolk could be a reason for their difficult loan repayment behaviour.

- Dar es Salaam fishers have increased their production but when this happens, there is a problem of marketing. Processing by applying a different technology is needed. More effort in increasing production through a different technology is needed. Because the traditional fishing practice is dominant, there is a need to change to more modern practices.
- Co-operatives have to change from the past. They need their own efforts by savings so as to be assisted.
- An increase of sardine production should go hand in hand with processing of the sardines i.e. smoking (mackerel) and sun drying (sardines).
- The building of a landing site at Dar es Salaam should correspond with the development of subsidiary jetties all over the Coastal landing sites. Improved access roads are equally important in the transportation of fish to Dar es Salaam.

- Experience suggests that people at the Coast are more reluctant to repay loans compared to fishermen at the lake region.
- Increase of production should go hand in hand with emphasis on processing e.g. canning
- Loans should be given to people with education/awareness or provision of loans should be accompanied with awareness raising. Between education and ignorance, what comes first? Addressing awareness/education addresses ignorance at the same time. The two have to go together.

Making his final contribution, the Director of Fisheries Department emphasized the fact that issues concerning small scale fishers are regarded as important all over the country. Equally important, is the establishment of co-operatives and savings and credit societies. If the current plan is implemented well, we will succeed in our objectives. Participation of fishers in managing fishery resources is a good point to be followed up and implemented. This view is guided by the belief that it is the fishing communities themselves can solve most of their problems. Right now, the department is working on revising the fisheries act in order to facilitate the participation of fishing communities. Fish farming is important in increasing the supply and availability of fish. Therefore, it should be given due emphasis.

- Aquaculture is being recommended and is a highly commendable idea. It can contribute to higher incomes and also nutrition for the people.
- For fish quality and clean landing sites is important. The quality of fish products and improvement of landing sites go together, People should also change our attitudes towards the quality of fish.
- While international standards have to be met, local standards also have to be maintained i.e. in dagaa processing through drying or the adoption of new technology.
- The policy on fish export promotes the sell of fish only where there is an excessive supply. Nile perch for example, has been in surplus supply, and can therefore be exported. Meanwhile, there are no proposals for exporting other fish species.
- The department is also preparing a book on fish cuisines/recipes, with the view of promoting the consumption of fish among the Tanzanian population.
- The fish price issue has been well discussed. However, the policy of the Tanzanian government is that of market liberalisation such that the market will set prices through supply and demand. When people join co-operatives they can sell together and can determine better prices than individuals.
- An emphasis of training and skills building to understand the laws and regulations for the youth and others that are older is vital. It is equally important to educate people and enlighten them about sustainable fishing. Although fish stock statistics are not available at present, through experience, fishers may be able to notice the deteriorating situation and act accordingly. However it is not good to wait for stocktaking where we have witnessed degradation (and less fish). Precaution should be taken early.
- Lastly, fishers should disseminate what they learnt here and start working soon.

5.0 Outcome from Group Discussions.

The groups were formed based on water bodies and sent out to discuss the proposed concepts, strategies and projects. A detailed task sheet is shown below

1. Group formation based on water bodies.

Step 1

1. Read (and discuss) the whole concept paper.
2. What can you say about the over all concept? Affirm if it is conclusive and can stand on its own.
3. If not, What needs to be included in the basic concept?
(Give suggestions)

Step 2

- Look at the strategies
4. Do the strategies feed into and serve the basic concepts adequately? Affirm
 5. If not, what Strategy needs to change? Write down the change or the way the strategy should be?

6. Suggest any other strategies that need to be included to build/ feed into the concept.

Step 3

- Look at the projects and scrutinize them
 1. Are they appropriate for your area?
 2. Do they feed into the Strategy? Affirm. If not, What has been left out and you think should be included?
 3. Prioritise the Projects for your water body. Give reasons for your priority. *(Keep in mind there will still be feasibility studies to evaluate your priorities and so they may change based on the fillings. The reports of the feasibility studies will be shared in a national workshop in April 2002).*

Time budget:

3 hours

Suggested time use guideline:

Basic concept 1, with strategies and projects- 45 mins

2, 35 mins

3, 30 mins

4&5, 30 mins

GROUP NO 1 COASTAL

General Remarks:-

- M.P. does not refer to Biodiversity conservation.
- M.P. is focused on the lakes.
- M.P. is focused, in the marine sector, on Dar Es Salaam.
- Use participatory techniques for formulation of projects.
- Use existing Institutions d.

Basic Concept 1

- Add: - Constraint
Poor fish distribution network
- Add: Strategy
* Conservation of breeding grounds for the sustainability of the resource.
- Add: Project 1.2
* Project should cover whole coastal area from Mtwara to Tanga.
- Project 1.4
* Include Marine
* Include destructive fishing practices.
- Add: Sub Sector 3 (2) Processing & Mark
* Provision of ice in the districts.
- Add: Sub - Sector 4 (3) Aquaculture/Mari culture
* Seaweed farming/prawns etc.
- Add: Project 1 - 16 - 2
Should cover total coastal area
Project 1 - 8 Establishment of a fiberglass construction workshop at Mbegani FDC.

Basic Concept 2

- Add: Constraints
* Limited number of seaweed buyers
* Export market focused on Nile perch. Diversity products (including marine products).
- Add: Strategy
* Increase number of seaweed buyers.

Basic Concept 3

Add: Constraint:-

- * High price of fishing gear
- * Difficulties in obtaining loans
- * Lack of knowledge on saving
- * Poor information dissemination

Add: Strategy:

- * Formation of cooperatives
- * Capacity Building among fishers on Credit/Saving/Bookkeeping skills
- * Improve dissemination of information
- * Use NGOs to facilitate the development of Credit schemes

Add: Project 3.1

- In the following areas: Muheza, Mafia & Lindi.

Basic Concept 4

- Modify:
- *(3) ...data collection, including ecosystem data, processing
 - (4) Remove 1st sentence
 - (5) ... Water bodies, by closing of small specific areas for stock replenishment for the whole area by involving the resource users.

Add: Strategy:

- * Stock assessment is necessary for implementing quota system.

Add: Project 4.2

- * Include Marine system

Basic concept 5

Project 5 - 1

Extend from National Level to District level.

Original Project Priority

1.1	Dar Es salaam Harbour Project	(10)
1.2	Coastal Fish Development Project	(3)
1.4	Fish Patrolling Project	(1)
1.8	Expansion Dar Es Salaam Market Project	-
1.12	Aqua/Mari culture Project	(7)
1.11.2	Pilot Project for Women in Processing and Marketing Project	(7)
1.16	On -Job Training Project	(2)
1.16.2	Purse seine Dar Es salaam Project	(9)
2.1	Quality Control Dar Es salaam Project	(6)
3.1	Capacity building Fish Comm. Project	(1)
4.1	Improve Flat. Info system Project	(5)
5.1	Just. Study, est. Fish Development Community Project	(8)
5.2	Revive Fish Institutes Project	(4)

GROUP NO. 2COASTAL REGION

CONCEPT NO.1: IT IS SELF - SATIFYING: -

STRATEGIES - I - Increasing the production sector which still lacks information on the amount of fish stock. In order to implement this, it is necessary first to gather such information.

PROJECT NO. 2

Recommendations:

Co-operative education is essential for fishermen.

PROJECT NO. 4

Recommendations:

There should also be patrols for marine waters to save fishermen when they get trouble/problems.

PROJECT NO. 5

Recommendations:

Improvement of light fishing method should also be implemented for fishermen in marine water.

CONCEPT NO. 2 (IT IS SELF-SATISFYING)

Strategy No. 1

PROJECT NO. 1: Should read as:

Project for building fish quality control laboratory; in order to include marketing of fish at all levels.

PROJECT NO. 2

Recommendation: should read as:

Project on market research for fish exports (instead of Sangara alone).

Strategy No. 2:

Problem: No projects were classified.

Concept No. 4

Strategy No. 2:

Project No. 4:2

Add: Research on other fish should include also marine fish instead of Lake Victoria alone).

General recommendations:

Because training is the key factor to all issues, we recommend that it should be an independent concept.

Concept No. 1

	Priority
(1)Construction of Dar Es salaam fishing Harbour	(1)
(2)Coastal fisheries development	(3)
(3)Strengthening of fishing Patrol	(7)
(4)Financial support for young Fishermen	(4)
(5) Expansion of Dar Es Salaam fishing market	(11)
(6)Pilot Project for Women in Processing and Marketing	(6)
(7)Aquaculture development	(12)
(8)Short course /Job training programme for traditional Fishermen	(2)
(9)Reinforcement of purse Seine fishing in DarEs Salaam.	(8)

Concept No.2

(10)Construction of quality inspection laboratory for fish products	(13)
(11)External Market research for Fisheries	(9)

Concept no.3

(12)Capacity building of fishing communities	(5)
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Concept no. 4

(13)Improving Statistical information	(10)
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Concept No. 5

(14) In Statistical study on establishing of fisheries development committee and fisheries development fund	(14)
(15) Revival plan for fisheries training Institutes	(15)

COASTAL Final Priorities(Combined for the two groups)
MARINE

PRODUCTION	PROCESSING	MARKETING	CAPACITY BUILDING
1.2 (2)			Capacity building Fishing commodities
1.5 (3)			3.1 (1)
1.12 (7)	2.1 (5)		4.1 (4)
1.16.2 (8)	1.11.2 (6)		1.1 (10)
		2.2 (9)	
		1.8 (11)	1.16 (12)
			1.3 (13)
			5.2 (14)

GROUP NO. 3 LAKE VICTORIA

MODIFICATION

BASIC CONCEPT 1

FISH PRODUCTION - SUB SECTOR

1. PROJECT 1:3

Establish Fisheries Cooperatives For Nile Perch Fishery

Fisheries cooperative will be established in Lake Victoria (Sengerema??) in every region there should be one pilot zone (3 region of Mwanza, Mara, Kagera).

1. Project 1.4

Project for strengthen of fishing patrol.

To solve the problems of robbery of fishing gears, vessels, Engines, illegal fishing and fish trade.

1. Project 1.5

Fisheries Financial Support for young fishermen. Include Lake Victoria also.

2. Sub Sector Aquaculture

* two: Adaptable research should be encouraged.

PROJECTS

Project 3.1

2. Target area: Mwanza, Kagera, Mara (Three area)

3. Target Group:

- Nile perch long line fishermen and consumers.

Project 3.3

2. Target area: ... and Musoma district in Mara region.

PROJECT 3.6

9. Input:

- * VH F.radio ...x 14 district x 3 centers
- * Fishermen education - Fisheries Division
- * System support - Fisheries Division.

New Projects:

1. Establishment of fiberglass boat building on the Lake Victoria.
2. Reduction of Post harvest losses of dagaa (sardine) by improving preservation.
3. Clarias culturing for food and bait purposes.

PILOT AREA: Nyegezi Fresh Water Fisheries Training Institute.

4. Improvement of Landing beaches and feeder roads.
Possibilities of installing facilities like solar or and wind energy ice plant at the beaches.
5. Establishment of fresh water Eel culturing for export purposes.
6. Nile perch culturing/ for Lake restocking purposes so as to sustain Nile perch Export Market.
7. Fund for small sale fishermen loan fund.
* This fund should be a revolving fund to enable other fishermen to get loans.
8. Enlargement and improvement of surveillance groups (BMU's) in Lake Victoria.

PROJECT PRIORITIES

CONCEPT I

Priority	Origin	Description
16	1.3	Establishing Fisheries Cooperative for Nile Perch Fishery.
18	1.4	Strengthening of fishing patrol.
20	1.5	Fisheries Support Project for young Fishermen.
21	1.8	Introduction of Fibre glass Fishing boat Production.
25	1.9	Project for Promotion of Fresh Tilapia Marketing.
8	1.10	Improvement of local fish processing facilities for Nile Perch left over from the processing plants.
12	1.11.2	Pilot Project for women in processing and marketing.
24	1.12	Improved utilization of Dagaa in Lake Victoria.
22	1.13	Improvements of bait fish supply for Nile Perch long line fishing.
23	1.14	Fishing Technique modernization
1	1.16	Short course on the job training

Concept 2

Priority	Origin	Description
4	2.1	Construction of quality inspection laboratory.
13	2.2	Market research for exported product.
10	2.3	Development of major landing sites and its feeder roads.
19	2.4	Establishing Freshwater Eel farming.
17	2.5	Establishing Nile Perch fingerling production for restocking in the Lake.

Concept 3

Priority	Origin	Description
3	3.1	Project for Capacity Building of fishing communities.
9	3.2	Introduction of Revolving Fund Project.

Concept 4

Priority	Origin	Description
11	4.1	Improving statistical information.
6	4.2	Nile Perch resource management
	4.3	Promotion of Existing Co-management of Fisheries Resources

Concept 5

Priority	Origin	Description
8	5.1	Institutional study on establishing of Fisheries Development Committee and Fisheries Fund.
2	5.2	Revival Plan of Fisheries Training Institute.

NATIONAL LEVEL PROJECTS

Priority	Origin	Description
6	1.1 B	Revival Plan of Fisheries Training Institutes.
5	1.2 B	National Fish Marketing Improvement Project.
9	1.5 B	Aquaculture Development Project.

LAKE VICTORIA Final Priorities

1. Concept 1 Projects and concept 5 projects.
2. Concept 3 projects.
3. Concept 2 projects and National level projects.
4. Concept 4 projects.

PRODUCTION	PROCESSING	MARKETING	CAPACITY BUILDING
4.2 (6)	1.10 (7)	1.2 B (5)	1.16 (1)
2.5 * (14)	1.11.2 (10)		5.2 (2)
1.13 (18)	1.12* (20)	2.2 (12)	3.1 (3)
	1.17 * (22)	1.9 (21)	2.1 (4)
			3.2 * (8)
			2.3 * (9)
			4.1 (10)
			1.3 (13)
			1.4 (10)
			1.5 (16)
			1.8 * (17)
			1.14 (19)

* New Projects.

GROUP No: 4 LAKE TANGANYIKA

Basic concept number 1:

Add/Modify to read:

- Food self sufficient for Fish demand by increasing Production.

PROBLEMS

Add: Traditional customs and food taboos for some People, which prohibit them from eating different types of Fish.

STRATEGIES

- Assistance to all Fishing types in terms of Technology and Financial means.
- Promotion of awareness and educate them in formulation of Credit facilities e.g. SACCOS.

Projects

- 1-5.1 To be for both young Men and Women. The project to be implemented to both regions of Kigoma and Rukwa.
- 1-5.2 Construction of mooring jets facilities to be done at Kirando /Tongwa, Kabwe, Kipili, Wampembe.
- 1-4 Add: Project for Lake Tanganyika Surveillance and patrol in Tanganyika.
- 1-11 To be involved with the rest of other species apart from Dagaa and to be carried on both regions of Kigoma and Kigoma.
- 1-11-2 To be implemented under project 1-5
- 1-15 To be implemented in both regions (Kigoma and Rukwa)

Basic concept no.2: Accepted

Strategies

- Should also include Dagaa

Project

2-2: Should also involve market Research of Dagaa

PROBLEMS

Market research is lacking for dagaa

Basic concept No. 3:

This is based on the overall objective of the master plan

Basic concept no.4: Accepted

Strategies

Control of issuing fishing Licences and export (Quota system) should also be applied to other fish species, which are also for export.

Projects.

4-1 It is important national wide but not accorded /given priority

4-2 Research on stock assessment should also aim in other water bodies besides Lake Victoria

Basic concept no. 5: Recast to read

Fisheries administration and management.

Strategies: Accepted

Projects: Both accepted

Lake Tanganyika Project By Priorities

Production	Processing	Marketing	Capacity Building
7.(4-2) Lake Tanganyika Stock Assessment project.	(1-11) Processing Technology Project for Kigoma and Rukwa regions.	5. (2-2) Project for Dagaa Export Market Research.	1. (1-4) Project for establishment of Lake Tanganyika Patrols
8. (1-15) Project for sustaining Light fishing method on Lake Tanganyika.			2. (1-11) Processing Technology Project for Kigoma and Rukwa regions.
			3. (1-5) Financial Assistance Project for the youth (Men and Women)
			4. (1-6) Project for construction of Ship mooring facilities
			6. (4-1) Project for the Improvement of Statistics.
			6. (4-2) Lake Tanganyika Stock Assessment project.
			9.(5-2) Revival plan for training institutes

GROUP No 5: LAKE NYASA

Priorities

1. To improve Liuli fisheries development centre and TAFIRI- Kyela so as to facilitate Training
2. Fisherfolk communities formation
3. Research on Mbasa Mbebele and Ngumbo fish species
4. To culture fingerlings for ranching on the Lake
5. To plant trees

Concept no.1: It is good, feasible and sustainable. Additional of few comments

- Project**
- 1-2: Should be included on Lake Nyasa
 - 1-4: Should be for all major water
 - 1-5: Micro-Initial public offering (see below)

Concept of Capitals (MIPO)

- There are many people along Lake Nyasa Shore line who are either fishers -but interested to invest in fisheries.
- Better to initiate the selling and buying of shares for the interested individuals along the shore line.

- 1 Families buying shares
 - 2 Individuals buying shares
 - 3 Lake shore/Outsiders buying shares
- E.g. (1) Families 30,000@contribute10,000/=
- (2) Outsiders 1000 @contribute 100,000/= will give Tshs. 100,000,000/= (3) Well wishers /Donors giving 10,000,000/=

TOTAL: 3,410,000,000/=

Activities aimed at from the contributed money

- (1) Boat building for each fisher community as a loan.
- (2) Installation of wind mill parks for electricity supply for cold rooms facilities.
- (3) To buy materials which will enhance fish transportation up to the markets.
- (4) To initiate tourists records
- (5) Finance activities should be properly managed with committed Leadership.

1-7: Should include Iringa and Mbeya regions

1-4: Lift nets should be incorporated on Lake Nyasa for Sardine fishing with light attraction

1-15: Include Lake Nyasa into the project.

1-16: Improve Liuli fisheries development centre for the purpose of Plank boat building and training fisheries and fish processors

Concept No.2: Agreeable

Put addition of Ornamental fish from Lake Nyasa

Concept no. 3: Sustained

Should incorporate tourism and tree planting activities. Planted trees will help on in environmental conservation as it will replace trees harvested for boat building.

Concept no.4: Agreed

- -Research activities should incorporate all neighbouring countries (Malawi, Mozambique and Tanzania)
 - -Research should focus on fish behaviour and ecology
- 4-3: Fisheries regulation on closed seasons and closed areas should be reinforced.
- Include fish like

- (1) Ngumbo-Barbus species
- (2) Mbebele -Opsaridium species

Concept 5: Sustained.

Projects

- 1-6 Include Iringa & Mbeya regions
- 3-1 Fisher folk training for achieving the stipulated goals.
- 5-2 Incorporate MIPO/SACCOS**
- 5-2 (6) Page 33:Research on the behaviour and Ecology of Fish should be done before fish culturing breeding. This is to check where ranches fish can migrate to neighbouring Countries without returning if those countries have favourable whether and ecological niches
- 5-2 (7) To incorporate Tanzania, Malawi, Mozambique and Japan
- 5-3 To improve Liuli fisheries development centre in order to provide training for fishers and fish processing knowledge to fish traders.
TAFIRI-Kyela: Should be incorporated for training provision for small-scale fisher folks.

PROJECTS PRIORITIES

1. Improvement of Liuli Fisheries development Center/TAFIRI - Kyela so as to facilitate fisher folks training and planked boat building. [5-2]
2. Fisher folks communities formulation [1-7]
3. Research on Mbasia, Mbebele & Ngumbo [3-1]
4. Finger lings production for Lake – ranching [4-1]
5. Tree planting and bio-diversity conservation. *
6. Dagua processing improvement - installation of dry-air blowing system or coal * 1-17 utilization. * (awareness and equipment's needed)
7. Light attraction fishing improvements in Lake Nyasa for dagaa. [1 - 15].
8. Marketing of Ornamental fish (2 - 1*)

Priority Project & Ranking:-

1. 1 - 4
2. 1 - 11
3. 1 - 5
4. 1 - 6
5. 2 - 2
6. 4 - 1
7. 4 - 2
8. 1 - 15

LAKE NYASA Final Priorities

PRODUCTION	PROCESSING	MARKETING	CAPACITY BUILDING
4 - 3 (5) 1 - 5 (7)	1 - 17* (6)	2 - 1* (8)	1 - 7 (1) 5 - 2 (2) 3 - 1 (3) 4 - 3 * (4)

SUGGESTIONS

- 1 Master plan has not given equal consideration in all major Lakes and had ignored small LAKES completely.
- 2 There is no inter-Sectoral incorporation even for the sector, which seems to have some potentiality for the implementation of the projects e.g. Forest and agricultural departments.

7.0 Workshop Closure.

The workshop was closed by Mr. Kimaro ,Assistant Director Fisheries department in charge of Surveillance. He thanked the participants for their good work and promised them that the priorities will be checked. He wished them safe journey home and closed the workshop(see full speech in the annex)

At the end of the workshop, Mr. Yamamoto thanked all the participants for the work done during the last 3 days, which will be useful in accomplishing this Master Plan. Next, the Study Team will undertake a feasibility study of these projects to assess their viability according to the priorities proposed in the workshop. This will then be collected together and included in the final report to be completed next year. First, the report will be given to the fisheries department, which will distribute it to all the districts. He reported that he will come back around March/April to attend a final report presentation meeting. This time during the workshop, the experts on the JICA Study Team were quiet so that they could listen to you.

An Assistant Director in charge of Planning and Development in the Fisheries Department, Mr. Mapunda thanked the sponsors of the workshop and the facilitators for giving directions on how to conduct the workshop. He also thanked all the participants for their valuable discussions and contributions. The contributions will definitely be useful in helping the plan to move forward. Lastly, he thanked the secretariat and all those who provided useful logistical service at the workshop.

An Assistant Director in charge of Surveillance in the Fisheries Department Mr. Kimaro expressed his gratitude on behalf of the Ministry of Natural Resources and Tourism and all the participants. He thanked the facilitators for leading the process to this extent, and the different groups for their assessments of the interim Master Plan. Lastly, he thanked JICA for making the workshop a reality, and the secretariat for taking care of the logistics.

8.0 Observations and recommendations

The team of facilitators made the following observations regarding the workshop:

- That the workshop was fully successful as the objectives were fully met.
- That proposed concepts, strategies and projects were improved added and prioritized.
- That though the participants were representative, there was need to bring in more artisanal fishermen vis a vis grassroots stakeholders .If this is not possible, then it would be advisable to hold Zonal workshops before the National forum.

And recommendations

- Those in the next National workshop as much as possible, invite the same participants for continuity.
- Need to follow the priorities given for feasibility analysis to ensure legitimacy and sustainability.
- Rename Concept 3 as Capacity Building and Human Resource Development and Utilization for high quality livelihoods in fisher communities. Analyze this at 3 levels –National, District and Community.

Conclusions.

The workshop was well attended and participants were very happy with it as well as the organizers. It has definitely set the stage for the next stage of feasibility studies and has there fore given direction to The Master Plan.

ANNEX I

Marine Fisheries

In all the coastal area, the marine coastal fishery has difficulties in procuring fishing material/ equipment and in marketing the catches. These difficulties have restricted effective production and marketing.

Along with the basic concept of the master plan, the marine coastal fishery is to be required to increase the production and raise fishers income through promoting and stimulating fishing and marketing by coping with the aforementioned difficulties and constraints.

With these purposes, I would like to suggest some development policies for promotion of the marine coastal fishery.

(1) Improvement of Fishing Ability and Extension of Fishing Grounds

The fishing grounds have been limited to mainly shallow reef areas near fishing villages and bases, mainly due to limited capacity of the fishing boats, many of which are small canoe and non-motorized boats, though there are some fishermen seasonally moving from one fishing area to other areas.

There would be a limit in increase of catch if only depending on the traditionally exploited fishing grounds, even though they intensify their fishing efforts with the same boats and gears as before. In contrary, it would cause over-fishing in particular in shallow reef areas. It is therefore necessary to expand the fishing grounds out of traditionally exploited areas to increase production by improvement of fishing gears/methods and motorization of fishing boats.

This does not mean that offshore areas always promise a larger catch. Sea areas with the most dense fishery resources are still reef waters. In this master plan, I would like to suggest that the sea areas to be exploited as new fishing grounds are therefore to be outer areas of the reefs currently exploited and new reef areas, where the density of fish is to be relatively high.

1) Support for fishermen in procurement of fishing equipment

Many fishermen are working with worn-out and insufficient fishing gears, due to difficulty for fishermen to procure fishing material/equipment and boats. Having fishing equipment is the minimum requirement for fishermen. It is essential to fulfil this minimum requirement for production.

Some financial support such as credit scheme shall be provided for the fishers to support procurement of fishing material/ equipment. Although many credit schemes have been implemented, majority of the fishers has not been benefited yet because of very high interest rate, requirement of collateral as well as difficult procedures.

More easily accessible financial system shall be necessary for fishers through their fishery cooperatives. For preparation the system and its management, the fishers should have practiced saving and contributions to the cooperatives. The cooperatives should improve its management capacity through educating the management staff, establishing follow up systems for the credit as well as enlightening the member fishers on cooperative and credit systems. It is also necessary for the cooperatives to strengthen its finance through its own income generating operations such as fishing operation.

2) Increase of capacity of fishing boats

About three-quarters of all the fishing boats in the marine coastal fishery are dugout canoes and outrigger canoes. Due to their small working space on board, these canoes are limited to expand their fishing capacity. Although the sailing performance of the outrigger canoes must be positively evaluated and this sailing canoes should be continuously utilized as means of low cost fishing, the number of *mashua* and *boat*-type fishing boats should be increased because they have a room to enhance fishing capacity.

- Regarding fishing boats for fishers, it is essential that fishing boats should be built locally, maintained and repaired locally. And the boat building cost should be within a reach of local fishermen if some financial assistance is available. Even though some new sophisticated boats were introduced, it would be meaningless, if the boats can not be widely used by fishermen because of their very high price and inability of repairing and reproduction of the boats.

Since there are boat carpenters, their boat building skill should be used, improving them with new techniques. It is proposed that any expansion of the fishing fleet should be achieved by the local building.

- Motorization of fishing boats: Motorization of fishing boat is an effective measures to increase capacity of fishing boats. Purse seine net, surrounding net and other active fishing are practicable or effective when they are operated by motorized boats. The *mashua* and *boat*-type fishing boats are structurally easy to equip outboard engines. The motorization shall be promoted with outboard engines.

- Improvement of fishing gears/methods: As mentioned before, due to the difficulty in procurement of fishing material, many fishermen are working with worn-out and insufficient fishing gears. If they can purchase enough quantity of materials and equipment, they can renew the fishing gears and work with larger quantity of the gears. For example, they can make longer and deeper gill net, surrounding net and purse seine net. They will be more effective than the currently used ones to catch fish. Fish-aggregating devices may be useful to improve the efficiency of finding fish as well as fishing. For the canoes, mainly engaging in hand-lining, introduction of long-lining or vertical long-lining methods together will prove effective to increase the catch.

In order to materialize these measures, some financial assistance for fishermen are necessary to enable them to procure production means such as fishing boats, engines and fishing materials. For this, as mentioned above, a financial assistance system shall be established through strengthening of cooperatives and educating/ enlightening the members.

Based on these concepts, the Project 2-1, Coastal Fisheries Development Project, is prepared as one of the model projects. This project is to aim to improve the fishing capacity, establish a revolving fund and build up capacity of the cooperatives, with initial input of fishing equipment.

I also suggest a project idea, that is, Project for reinforcement of purse seine fishing. This project is based on the same concept and concentrated on pelagic fishery development.

Sardines and mackerel contribute substantially to providing cheap fish for the population. In order to increase supply of cheap fish to the people, it is effective to reinforce the purse seine fishing fleet.

The project is to intend to reinforce the fishing fleet with measures such as introduction of prototype purse seining boats and fishing gears, their operation by a fishing cooperative and provision of credit through the cooperative for the members fishermen to go into the purse seine fishing.

(2) Support for and Promotion of Marketing

Promotion of marketing of flesh fish

As people prefer fresh fish, the marketing fish has been changing from processed fish to fresh fish

From Dar es Salaam, private fish buyers go down to main fishing areas, Mafia, Bagamoyo, Zanzibar and Kilwa by boats or tracks with ice boxes to purchase flesh fish for Dar es Salaam Market.

In Tanga Region, served by main roads linking with Dar es Salaam and inland cities by regular bus services, some fish-traders and fishmongers are distributing fish to inland cities such as Arusha and Morogoro. This is an important movement to be encouraged for expansion of marketing of fish. They utilize small freezers to keep their fish and public buses for their transportation. However, they are unable to expand their transactions, failing to meet the actual demand, because of insufficient funds to purchase more fish and invest for additional freezers. Financial measures should be introduced to support and encourage these private merchants. In Lindi and Mtwara, local people also prefer fresh fish. There have been some efforts to transport and sell fresh fish using ice made with small freezers, while fish are usually broiled or dried for transportation and sale in the inland areas. Since small freezers can be handled and managed by private fishmongers, benders or fishermen groups, it is a practical way to promote marketing of fresh fish in these southern areas, by utilizing these small freezers. In addition to

construction of roads, **what required to the public sector for promoting marketing is to extend supports including financial assistance and follow-up to fishmongers, traders and fishermen.**

(3) Development of Fishery Infrastructure

In many local landing sites, natural sand beaches are used for landing the catches and preparation for fishing.

It will be necessary to improve facilities and functions of the landing sites for motorization of fishing boats and their effective operations to increase the catches as well as to facilitate marketing of fish landed.

The fishing fleet of DSM is the largest one in all the coastal areas, as almost 60% of the large fishing boats are operated in DSM. About 50% of the marine fisheries catches are landed in Dar es Salaam, and the new fish-landing market is now under construction in Dar es Salaam to promote marketing of fish. Supporting facilities for the fishing boats and fishermen have however been left undeveloped. For supporting and activating the operation of the DSM fishing fleet, leading promotion of the coastal fisheries in Tanzania, it is essential to improve harbor facilities in Dar es Salaam for the fishing fleet. With this concept, the plan will be studied to construct a fishery harbor in DSM.

ANNEX II

Well, since our study team leader, Mr. Yamamoto fully explained the logical frame and overall goal of this Master Plan, I would like to start from the problem analysis and its counter measure for them. I explain about 3 fisheries targeting different species such as Nile perch, Dagaa and Tilapia. Because these 3 are most important fishing species in the Lake.

First of all, for Nile perch fishery, 6 problems are suggested. These are,

(Read out all of six) And recommended counter measure for each problems are mentioned on the right column.

For the problem of fish price, I recommend to organize a joint shipment of fish by fishermen themselves. Because in a current situation, marketing is controlled by agents not by fishermen. The idea is to gain control by fishermen. This marketing system is actually carried out in Kenya.

Long line bait is short. Because beach seine to fish haplochromis, which is major bait fish for long line is banned since 1994. So fishermen need alternative to fish bait in a large quantity in a short period of time.

Robbery of gears such as engine and gill net is a serious problem. Organizing and sending a patrol mission can be a solution to protect their valuable asset.

Unfair weighing scale is confessed in many landing sites. Now Mwanza regional fisheries office is planning to organize and send the scale inspection mission in collaboration with weight and measure bureau of Ministry of industry and trade and Marine police.

Lack of capital is, in some sense, a common problem among fishermen, processors and traders. A micro-scale soft loan is needed.

Processing place of factory remains is left unhygienic for the moment. This situation is not preferable for products as well as workers.

And for Nile perch fishery as a whole, it's time to talk about effective resource management to gain benefit from the Lake in a sustainable basis.

For Dagaa fishery, 3 problems are pointed out.

(Read out all of three)

Lack of capital is a problem of not only Nile perch but also Dagaa fishery.

Now, most of Dagaa fishermen use Mombassa-made, poor quality mosquito net that need replacement every 3 to 4 months. Since your local net manufacturing factory produces real Dagaa net, fishermen should use this although its price may be more than that.

I don't have a good idea to dry Dagaa effectively even in rainy season. However Kigoma case could be a good example for the solution.

And finally for tilapia fishery, the key to promote this fishery is marketing. Unfortunately tilapia fishing is poorly appreciated due to limited market range and extensive market system, in spite of high consumer preference to tilapia. So improvement of tilapia marketing system is recommended.

Based on these ideas, several projects to give shape of these ideas are proposed. Project number is referred to annex of this summary. From now I explain briefly the idea of the projects.

Project 3-1

As I explained before, long line bait for Nile perch is short every where since beach seine is banned. Here I would like to propose two alternatives to fish or produce bait fish. One is alternative fishing method for haplochromis, for example small scale lift net with fish attraction lump or fish trap. The other one is production of Clarias fingerlings by hormone injection. The technique of Clarias reproduction is established in Western part of Africa with technical manual prepared by FAO and other organizations.

These technical development or local adoption of said techniques should be done by Nyegezi Fisheries Institute and extended to fishermen. Detail is attached at the end of this summary.

Project 3-2

This is also technology development type of project. The techniques recommended are, for example purse seine net as an advanced gear of hurry-up net to prevent dagaa from escaping from the bottom of net. Another example is a fish finder for both Nile perch and Dagaa fishing. It is quite effective to locate fish school in a wide range of water column and lake surface. With this modern apparatus, effort can result in the effective fishing. This activity should also be carried out at Nyegezi Fisheries Institute. And verified technique will be extended to fishermen like aforementioned project.

Project 3-3

As I said, tilapia is the most familiar fish for human consumption whereas Nile perch is disliked by people in Lake zone. But due to poor access to tilapia landing sites, tilapia is marketed only in a limited villages and neighboring towns. So I would like to propose tilapia marketing promotion project, which is consisted of following 4 steps.

Disposition of insulated fish box at selected fish collection sites.

Construction of ice factory in Mwanza.

Establishment of cold chain with Lake-surface transportation.

Establishment of cold chain with on-land transportation.

Project 3-4

Now the remains of Nile perch produced at the factories are fully utilised for human consumption as well as animal food. But the problem is the working condition of those processors. There are typical processing place in and around the town of Mwanza. Left side photo shows Mkolani processing site located south of town. Unfortunately they have been forced to relocate 2 times till now by authority due to bad smell and fries. Right side photo shows dry-salted chips processing place next to Kirumba market which drains salt and fish oil directly into the Lake. It may have a negative impact on the Lake environment. So to improve such a circumstance, these facilities should be needed.

Project 3-5

This conceptual figure shows the system of joint shipment of fish by fishermen's cooperative. Here I put a carrier boat to carry and sell the products to the factories. And the money will be paid to the bank account and distributed to each member fishermen afterwards. With this system, fishermen can save money to some extent for future investment instead of drinking beers at the bar. In this concept, the important point is to organize the cooperative, which is truly functional for member fishermen. For this purpose, we may need long period of time for fishermen education in a grass-root basis.

Project 3-6

This is rather simple compared to previous one. With the surveillance system equipped with mobile radio for the boat and fixed radio powered by solar system at the base, fishermen will be able to protect their fishing gears to some extent. Deep involvement of authorities concerned such as marine police and district fisheries office is needed and key to succeed this system.

Project 3-7

Well final one is a resource management type of Nile perch fishing. This is not a easy work. The contents of this project is closely related to the result of LVFRP (Lake Victoria Fisheries Research Project) financed by EU that will be presented soon in a final workshop. And it will be influenced by the possibility of LVFRP phase 3 that will be the resource management. So for the time being, I would like to watch carefully the movement of EU.

But a part from that, I show you here my concept of resource management. TAC system (Total Allowable Catch) is introduced and implemented in Japan and EU countries to manage the resource of commercially important species in the common fishing ground. In case of Lake Victoria as well, all of

riparian countries should collaborate with the leadership of LVFO (Lake Victoria Fisheries Organization) to find the biologically allowable maximum catch and finally determine the TAC of each countries in consultation with administrators or politicians. TAC is not a purely biological figure. Then the point is a way of enforcement and management. I show you some possible way of management in the next slide.

This table shows three different ways of management with comparison among them, advantages and disadvantages. Simply saying, the left one is the management by number of fishing boat, middle one is the control of production at the factories and the left one is the management at the landing site. Easier ones are the left one and middle one. Because we need less control points. But these are not a direct management way of catch. On the other hand, the right one is an ideal measure to directly manage the catch. But the implementation is very difficult because there are around 600 landing sites in Tanzania water only. So in this manner, there are still many things to discuss with parties concerned.

Well that is all about my presentation. Thank you very much for your attention.

ANNEX III

A. About the Lake Tanganyika fisheries,

It is based on the national policy of "Arrangement of the production enhancement system corresponding to domestic demands (Fishery production)".

Improvement of income will be pursued through the implementation of efficient fishing methods and cost reduction, so that the existing fishery becomes more efficient one and further, enhancement of economic supports to fishermen will be promoted through the establishment of various financial systems.

Furthermore, for "Resource management: achievement of the fishery of resource management type,"

Arrangement of fishery statistics such as the survey of fishery resources and information of fishery production, which are used as the basis for setting the possible fishing resources (for example TAC; which Mr. Sato mentioned), will be performed so that measures to achieve sustaining utilization of limited fishery resources can be taken.

B. Achievement of efficient fishing and cost reduction

The current Daga fishing uses basically a completed fishing method and there is no large point to require large technical improvement. It enables to save fuel consumption by stopping the outboard engine on the fishing ground and drifting according to the wind and water current, so some fishermen say that they can obtain a larger catch by increasing the output of the outboard engine and reaching a more distant fishing ground.

Though a fishing ground may be formed at the center of the lake depending on the meteorological and wave conditions, easy going increasing of the output of the outboard engine may cause the increase in cost and may not always result in the increase in income.

Therefore, rather than the measures to enhance the fishing ability such as increasing the size of fishing boats or increasing the output of outboard engines, attention should be paid to such measures that will contribute to sustaining fishery such as brushing up the existing fishing method, study for efficient fishing, and examinations of methods for cost reduction.

C. Establishment of loan schemes for purchasing fishing implements

It is very significant to enhance the supports to those younger generations who will take a role fishery in the future. In the current fishing villages, a few boat owners (Tajiri: rich persons) possess fishing boats and fishing nets and they do not attend the fishing ground at all or only seldom.

Particularly for those young crew who are independent from boat owners and have the will to operate fishery by themselves, economic supports should be provided through the establishment of a loan scheme for purchasing fishing implements or capital increases of existing funds. And distribution ratios of the income from the catch shall be rearranged.

D. Improvement of fishing techniques

For the promotion of fishery in the Rukwa Region, (where development is behind that in the Kigoma Region), upgrading of fishing implements is required by such means as the replacement of dugout canoes with planked boats and diffusion of outboard engine.

Therefore, establishment of a loan scheme for purchasing fishing implements or capital increases of existing funds will be implemented for small-sized fishermen's households.

Further, to have them effectively utilize these economic supports, education and enlightenment for fishing people are also important, so it is necessary to promote the understanding of the concept and contents of loans as well as the method for accessing them.

E. Periodical implementation of basic statistical surveys of fishery production

It is desirable that the collection, arrangement, and analysis of fishery production data, which form the basis for setting the TAC, are implemented in the near future. Further, for the arrangement of the statistical information system, arrangement of the load infrastructure and telecommunications system is also essential.

F. In the fields of processing and physical distribution.

An increased supply of edible Dagaa will be pursued through the improvement and development of techniques for processing Dagaa according to the National Policy statement in "Fishery processing/physical distribution: reduction of physical distribution cost and nation-wide deployment of physical distribution facilities for fishery products," to perform a part of the role of supplying protein to the nation.

Existing processing methods involve a problem in quality, particularly during rainy seasons. While pursuing the improvement of product quality by placing importance on the improvement of this point, demands from consumers will be evoked through the development of more attractive products. Furthermore, by enhancing the interests in the quality of fish products not only among processors but also among consumers, we will contribute to the safe and stable supply of fish products.

G. Diffusion and enlightenment for the quality of fish products.

With regard to the currently implemented method of processing Dagaa, it is the first step that processors themselves become aware of problems in quality, sanitation, and so on. In the beginning, it is necessary to promote diffusion of dry racks made of local materials, which will require only a small amount of initial investments.

For the improvement of quality of processed products, on the other hand, it is important that not only processors but also consumers have interests in not only the price but also the quality of fish products. For enlightenment of consumers, utilization of radio broadcast will be effective.

H & I Improvement of processing methods and development of processing technology

With regard to the drying method applicable to rainy seasons, which is the most serious problem in the present stage, it is necessary to study for

- Reduction of the drying period by means of the boil & dry method or soaking in salt water,

- Introducing hot air drying, and

- Applying a simple cover system to dry racks.

On the other hand, it is necessary to develop new products for increasing consumers and expanding markets, where smoked fish, canned fish, frozen fish can be cited as candidates.

Though smoking can be implemented with simple technology and small investments, it uses firewood and charcoal as smoking fuels, so attention must be paid to the problem of deforestation. Collaboration with afforestation projects should be promoted.

With regard to canned fish, Dagaa has a form that makes people recall oil sardine, if "Dagaa mafta" is produced, it is expected that it will contribute to the acquisition of foreign currencies as export-oriented products while being consumed domestically. However, besides that cans as materials must be imported, feasibility study must be conducted carefully on the manufacturing and quality controlling abilities for products, plant management ability, and so on.

With regard to frozen Dagaa, shipping them mainly to Dar es Salaam using household chest freezers and adiabatic transport boxes is expected to evoke new domestic demand. From the development and sales of new processed products, creation of chances of employment and provision of chances for obtaining cash incomes, particularly for women, can be expected.

J. Improvement of physical distribution infrastructure

Smoked Migebuka is mainly exported to Burundi. Smoked Migebuka products collected from each landing beach using small boats are reloaded on M/V "Liemba," which makes a round trip between Kigoma and Mprung once a week, transported to an area near Kigoma, and then transported to Burundi after being reloaded on a further larger boat. Reloading on the water not only takes a long time but also is dangerous work due to shaking of boats. Further, "Liemba" also carries passengers and they get on and off the ship on the lake using a small boat as is the case loading and unloading of cargoes. At principal cargo collecting points, arrangement of jetties for "Liemba" and other fish product transport ships as well as warehouse facilities for storage of products is desirable.

K. Lake Nyasa Fisheries

When considering the development of fishery on the Nyasa Lake, the first thing to be kept in mind is harmony with environments and conservation of the biological diversity. When planning the development of fishery, a wide range of relationships and cooperation with its peripheral related areas must be taken in consideration.

On the other hand, we consider that the endeavor to convert the fishery of hunting type into the culture type, i.e. a trial based on the concept of aquaculture, will contribute to the implementation of responsible fishery as a means for "implementing resource management type fishery of."

In promoting fishery on the Nyasa Lake, well balanced development particularly paying attention to the harmony with environments and compromising with conservation of the biological diversity will be pursued, use, development, and management of fishery resources will be promoted in cooperation with Malawi and Mozambique, which commonly possess the lake, such a development plan that covers not only the fishery of hunting type but also the possibility of the fishery of culture type is necessary and, for the development of fishery and its peripheral related industries, arrangement of infrastructure, the basic condition for development, is also important.

L. Diffusion of planked boats

All fishermen on the Lake Nyasa are performing using dugout canoes and the number of such canoes is reported as 2,324 in the frame survey of 1998. Wood as materials of these canoes is taken from trees of 40 to 80 years in age and it is calculated 1,080 large trees are cut every year for constructing canoes. Therefore, also from the viewpoint of preservation of forest resources, it is necessary to promote the replacement of dugout canoes with planked boats.

M. Trial of the aquaculture

It is also important to pursue such fishery development that minimizes the impacts resources and environments. Particularly, introduction of tests and researches on the development of propagation and release technology, which contributes to proper utilization of fishery resources while paying attention to their preservation, will be considered.

Since the Lake Nyasa is an international lake possessed by three countries as is the case of the Tanganyika Lake, also on these plans, it is a matter of course that cooperation and consensus among the three countries are essential.

N. Importance of the arrangement of basic infrastructure

With regard to processing and physical distribution, the arrangement of infrastructure for transport is a prerequisite and through the activation of physical distribution and expansion of markets based on such infrastructure, stable supply of fish products to citizens and increase in income of fisherman's households can be promoted.

For the advancement into off-shore fishing as implemented in Malawi, a neighboring country, while it is a matter of course that the grasp of the existing volume of resources and the volume of resources that can be developed is essential, cost for industrial development including the problem of human resources necessary for arrangement and maintenance management of infrastructure must also be studied deliberately.

It requires a large amount of investments for the construction of fishing boats and purchase of outboard engines. At the same time, arrangement of a modern fishery port equipped with ice making facilities, refrigerators, fishing boat repairing facilities, and replenishment facilities is required for each landing beach together with the management ability to operate such facilities.

Further, the arrangement basic living infrastructure including electric power and water supply to operate them and infrastructure including the roads for carrying fishery products to the place of consumption is also required.

ANNEX IV

NATIONAL WORKSHOP FOR FISHERIES MASTER PLAN

Host Organization : Fisheries Division, Ministry of Natural Resources and Tourism

Sponsored by Japan International Cooperation Agency (JICA)

1. Date : 30, 31 October and 01 November 2001 (3 days)

2. Place : TANESCO INSTITUTE, Morogoro

3. Agenda

[Day 0]

Travel to the place for the workshop

[Day 1] 30 October 2001 (Tuesday)

Time	Subject	Person in charge
08:00-08:30	Courtesy call to RNRO + RAS	Mr. T.W. Maembe
08:30-09:00	Registration	Secretariats
09:00-09:15	Introduction/selection of chairperson	Mr. N.J. Jihulya
09:15-09:30	Speech	Mr. R. Mapunda
09:30-09:45	Speech	Mr. Nishizaki – JICA
10:00-10:15	Speech	Mr. T.W. Maembe
10:15-10:25	Break/preparation of presentation	All
10:25-11:25	Presentation 1 Explanation of Fisheries Master Plan	Mr. S. Yamamoto
11:25-11:55	Coffee break	All
11:55-12:25	Presentation 2 Development of Marine coastal fishery (including Question & Answer for 10 minutes)	Mr. Iida
12:25-13:00	Presentation 3 Development of L. Victoria fishery (including Question & Answer for 10 minutes)	Mr. M. Sato
13:00-14:00	Lunch	All
14:00-14:30	Presentation 4 Development of L. Tanganyika & L. Nyasa fishery (including Question & Answer for 10 minutes)	Mr. T. Fujiki
14:30-15:30	Panel Discussion	1. Mr. Mapunda (chairperson) 2. Fishermen (Marine) 3. Fishermen (Inland) 4. Fisheries Division 5. District fisheries officer
15:30-16:00	Coffee break	All
16:00-17:20	Grouping of the participant for Day 2 group session	Ms. Kyanya Dr. Kulindwa
17:20	Closing of day 1	Mr. R. Mapunda

[Day 2] 31 October 2001 (Wednesday)

Time	Subject	Person in charge
08:00-08:30	Announcement/recapitulation	Ms. B. Kyanya
08:30-09:30	Explanation of group session/Grouping/Selection of group leader.	Ms. B. Kyanya
09:30-11:00	Group session	Group leader
11:00-11:30	Coffee break	All
11:30-13:00	Group session (compiling)	Group leader
13:00-14:00	Lunch	All
14:00-15:30	Presentation by each group	Group leader
15:30-16:00	Coffee break	All
16:00-17:30	Presentation by each group	Group leader
17:30	Closing of day 2	Chairperson
19:00-21:00	Reception	Japanese Study Team

[Day 3] 01 November 2001 (Thursday)

Time	Subject	Person in charge
08:00-08:30	Announcement/recapitulation	Ms. B. Kyanya
08:30-10:00	Discussion	Ms. B. Kyanya, Mr. G. Namwonja Dr. Kulindwa Dr. Natu
10:00-10:30	Coffee Break	All
10:30-12:00	Discussion	Ms. B. Kyanya, Mr. G. Namwonja Dr. Kulindwa Dr. Natu
12:00-12:45	Conclusion	All
12:45-13:00	Closing of workshop	
13:00-14:00	Lunch Payment of transport fee	All Japanese Study Team

ANNEX V. List of Participants

	Area	Title/Organization	Name
1	Dar es Salaam	Fisheries Division, Director, FD, MNRT	Mr. T. Maembe
2		ADFs, FD, Research, training & statistics	Mr. Haule
3		ADFs, FD, Surveillance	Mr. S.P.N. Kimaro
4		ADFs, FD, Master plan C/P	Mr. R. Mapunda
5		Fisheries Officer, FD	Ms. F. Sobo
6		-Ditto- (Mwanza)	Mr. D. Pande
7		-Ditto-	Mr. R. Makenya
8		-Ditto-	Ms. R. Kullaya
9		-Ditto-	Ms. V. Mushi
10		-Ditto-	Mr. I. Matemba
11		-Ditto-	Ms. R. Mally
12		-Ditto-	Mr. N. Jihulya
13		-Ditto-	Mr. K.M. Sindika
14		-Ditto- (Mwanza)	Mr. R. Mhekela
15		Forestry & B. Division, MNRT	Mr. E.F. Haule
16		Senior Economist, Police & Planning, MNRT	B.V. Nyange
17		SBBJ (Boat Building) in Mwanza	Ernest J. Nkaka
18		Conservator or Antiquities	Eliwasa E. Maro
19		Principal Game Officer, MNRT	Peter A. Ottaru
20		Researcher, TAFIRI	Dr. A. Chande
21		Kunduch Fisheries Training Center, Civil servant	Gershon B. Myaka
22		Dar es Salaam city, Fisheries officer	Mr. F. Ntima
23	(Private)	UWAWADA	Mr. Addy Haider
24	-ditto-	Sewerage Manager, DAWASA	Mr. Jasper M. Kirango
25	-ditto-	WASWI	Mr. A.S. Kibwana
26	-ditto-	BUSHA	Saidi S. Bofu
27	-ditto-	Fish processors Association (Industrial fisheries)	Mr. H. Bhagat
28	-ditto-	Poverty of Africa	Joe Mpangala
29	(Donor)	SADC MCS Specialist	Mr. J. Shea
30	Marine Coastal	Mheza, Tanga region, District Fisheries Officer	Mr. Kessy Mvugaro
31		Coastal Management Fisheries, CMF, Tanga	Mr. Solomon Makolola
32		Lindi Region, Senior Assistant Fisheries Officer II	Mr. O. Mchlaganya
33		Mafia Island, DFO	Mr. Mtani I
34		Mbegani Fisheries Development Center Principal	Mr. Mndewe YES
35		District Fisheries Officer, Bagamoyo	Mr. J.A. Lilungulu
36	(Private)	Fishermen or fish trader from Mheza, Tanga	Masudi Yunusi
37	-ditto-	Fisherman from Bagamoyo	S. Pazi
38	-ditto-	Fishermen or fish trader from Lindi	Mr. Twende
39	-ditto-	Fishermen from Mafia	Salum
40	(Donor)	Tanga Coastal Zone Conservation Develop. Project	Eric Verhey
41	L. Victoria	Musoma, DFO	Mr. A.J.M. Makaja
42		Sengerema, Mwanza, DFO	C.M. Mahande
43		Bukoba, DFO	J.M. Kayungi
44		Neyegezi Fisheries Development Center, Principal	Mr. John Makene
45	(Private)	Fishermen from Msoma	Kabate N. Nyamakanga
47	-ditto-	Fishermen from Sengerema, Mwanza	Juwenary Buzinza

46		MWADESO (Mwanza Development Society)	Novath Manoko
48		Business person in Mwaza	Ms. Beletha Emanuel
49	(Donor)	Executive secretary LVFPA, Mwanza	L.B. Nhwani
50	L. Tanganyika	Sumbawanga, Rukuwa, Assistant Fisheries Officer	Mr. M. Kilala
51		Sumbawanga, Rukuwa, Business	Mr. J. Kipele
52	L. Nyasa	Kyela, DFO	Arom M. Mwasota
53		Ritohi, Mbinga, Fisheries Officer	A.F.H. Kapinga
54	(private)	Fish trader from Ritohi, Mbinga	S. Nchimbi
55	-ditto-	Fish trader from Kyela	Seif A. Waziri
57	Morogoro	National Aquaculture development Centre, SfsO II	Japhet Mvvanpulo
58		SFO II	Kajitanus Osewe
59	Japanese team	JICA, Tokyo	Mr. Nishizaki
60		JICA Study team	Mr. S. Yamamoto
61		JICA Study team	Mr. K. Iida
62		JICA Study team	Mr. M. Sato
63		JICA Study team	Mr. T. Fujiki
64		JICA Study team	Ms. B. Kyanya
65		JICA Study team	Mr. G. Namwonja
66		JICA Study team	Mr. K. Tani
67		JICA Study team	Ms. Y. Niimura
68		Assistant 1	Mr. Mapunda
69		Assistant 2	Mr. Stanley Lameck
70		Assistant 3	Ms. Christina
71	Facilitator	DSM Univ.	Dr. K. Kulindwa
72		DSM Univ.	Dr. Natu Mwamba

ANNEX VI Proceedings:

30th October 2001

09:00-09:05 Introduction/selection of chairperson Mr. N.J. Jihulya
Participants Self-introduction

09:05-09:15 Speech Mr. R. Mapunda

It is my great pleasure for me and a great honour for the Ministry of Natural Resources and Tourism to have this opportunity to make an opening statement to this Workshop.

To start with, I would like to extend a warm welcome to all participants and invited guests. As you might be aware this workshop has the scope of becoming a national event setting the guidelines for the sustainable development of the fisheries sector in the country.

Tanzania commends the Japan International Cooperation Agency (JICA) for their financial support which has made this workshop possible.

As you might be aware Tanzania is well endowed with water resources both marine and freshwater. She shares the three major African lakes of Victoria, Nyasa and Tanganyika and a coastline of 800 kilometres long. The country has other minor water bodies which include lakes Rukwa, Eyasi, Manyara and dams namely Mtera, Nyumba ya Mungu, Mindu and others. Other water resources include a diversified river system. Fisheries potential from all territorial waters is estimated at 730,000 metric tones. Today, only an average of 350,000 metric tones are landed annually. This indicates that there is still room for more production.

With all this diversified water resource, one cannot draw up sound management strategies without having in place sufficient and reliable baselines information.

It is only by having proper management strategies that our mission on sustainable development of the fisheries resources become a reality.

Our vision boldly phrased "Sustainable fisheries utilisation" requires careful planning. The fisheries industry of Tanzania has been expanding in the past eleven years due to the demand for increased supply of protein food, growing population and the advancements in technology. All these increase the pressure on the living aquatic resource both marine and freshwater.

The execution of a fisheries Master Plan study has come in at the time of great need. Sufficient and reliable baseline information over the fisheries resources nationwide is a pre-request in planning. Such information is a tool for a successful and implementable strategies towards a sustainable management of the resource in question.

This workshop is an opportunity to share the findings of the fisheries Master Plan Study among the Study Team and the stakeholders. It is our wish that the outcome of this workshop will be

- Consolidation of the Master Plan Study findings from various fields,
- A common understanding of the present status of the fisheries sector,
- A common understanding of what are the main constraints and opportunities in the development of the fisheries sector nationwide,
- A common understanding of which steps should be taken at national, regional, district and village levels to promote sustainable management of the resources,
- A common understanding of what should be the role of each level to develop the institutional framework for applying sustainable management strategies, and
- A common understanding of the need of donor community to assist in capacity building in the field of fisheries.

It will be a challenge to this workshop to use the fieldwork findings and to discuss and set a stage for the future development of the fisheries sector.

I look forward to the days ahead of us.

Thank you for your attention.

ANNEX VI SPEECHES

09:15-09:25

Speech

Mr. Nishizaki – JICA

Good morning. On behalf of the Japan International Cooperation Agency, I would like to express my sincere thanks to the participants for attending this Workshop and to the Tanzania government for arranging a fruitful Workshop on the Master Plan Study on Fishery Development.

All of us understand that the Tanzanian government has made a lot of efforts to reduce poverty in Tanzania. In this context, the government of Japan through JICA, has a closed cooperation with the Tanzanian government.

One of the good examples is to support the PRSP (Poverty Reduction Strategy Paper) procedure such as monitoring. Also JICA has been deeply involved in the formulation of ASDS (Agricultural Sector Development Strategy) and RDS (Rural Development Strategy) with other development partners.

Fighting against the AIDS/HIV is also our target area,

In this Morogoro Region, JICA has collaboration with Sokoine University of Agriculture for the development of participatory and sustainable agriculture. Recently Morogoro Health Project which is aiming at strengthen the capacity building in health sector has initiated with the local authorities

In the field of fishery development, apart from the conducting this master plan, as you may know, by the grant aid of the government of Japan, Tanzanian government has been constructing the fish market at the Banda Beach. These all activities are aiming at reducing the poverty in Tanzania.

The Japanese people who paid tax in Japan support our JICA activities in Tanzania.

This Study was launched in January 2001. Half of the period of this Study has passed. During this time, in coastal area, Lake Victoria, Lake Tanganyika and Lake Nyasa, the field survey was conducted and Master Plan on Fishery Development of interim version was prepared by collaboration with Tanzania and Japan.

This Master Plan plays an important part in fisheries development in Tanzania, therefore it is necessary to accept many opinions of all people of fisheries.

So, today, we think that it is very significant that Workshop was implemented, with many participants of fisheries.

We hope that we have the many discussion on Master Plan for three days and revise more appropriate.

In conclusion, I would like to express the hope that this Study will help further cement the mutual goodwill and friendly relations existing between Tanzania and Japan. Thank you.

09:25-09:40

Speech

Mr. T.W. Maembe

It is my great pleasure for me and a great honour for my Ministry in collaboration with the Japan International Cooperation Agency (JICA) to organise this important National Workshop to share the information collected and contained in the Interim Report of the Fisheries Master Plan.

I wish to express my sincere appreciation that you valued this invitation and that is why you have decided to use your valuable time to attend this workshop. This indicates your strong commitment to contribute towards the development of the Fisheries Sector.

May I also take this opportunity on behalf of the Government and people of Japan through the Japan International Cooperation Agency (JICA) which has financially enabled us to assemble here today to review the work done so far in developing the Fisheries Master Plan.

Mr. Chairman,

Tanzania, realised the need, to have a comprehensive Fisheries Master Plan a long time ago but it was not possible to develop it due to lack of capacity in terms of financial and human resources. In 1998, the Government of Tanzania submitted a request to the government of Japan for assistance to carry out a Fisheries Master Plan Study. It was with pleasure that early January, 2001 the request bore fruits and the execution of the Fisheries Master Plan Study started.

Mr. Chairman,

Past or on going Fisheries Projects and activities have been implemented based on the urgent demand but were not coordinated or integrated. It was necessary to have a fisheries Master Plan in order to determine what projects would be implemented to meet the objectives of the fisheries national policy and development strategy. The Fisheries Master Plan is expected to propose management strategies and a development plan with priority projects to meet the needs of each water body because each water body has different ecological and social conditions.

The Master Plan will set the stage for sustainable fisheries development taking into account integration of different sectors, the decentralisation policy and community participation scheme which embraces the fishing, processing, trading and other related activities. Priority projects will be identified in each water body as per the study findings. The output should encourage investment of the private sector, technology expansion, women participation and sustainable use application.

Mr. Chairman,

The overall objective of the Fisheries Master Plan is to develop a feasible integrated fisheries development strategy that will stimulate sustainable economic growth of the sector. The expected short terms objectives are:

- To establish the exact needs priorities of the country by major water bodies;
- To strengthen the capacity of Fisheries Division for project formulation, planning, monitoring and evaluation;
- To establish a clear understanding of the Fisheries Resources Base;
- To promote alternative income generating activities among fisher communities;
- To devolve of the government performed activities to fisher communities and private sector by building elements of their strong participation;
- To ensure fish plays its role in contributing to protein food supply, nutrition, food security, employment and increase in foreign exchange earnings;

Mr. Chairman,

The deliberations of the workshop will contribute to the preparation of an interim report for presentation to the advisory committee in Japan. I invite you to guide the preparation of this report by agreeing on the priority areas and projects that will form the basis for further discussion with JICA and completion of phase II of the Fisheries Master Plan.

Mr. Chairman,

I am counting on the workshop to act as catalyst toward ensuring that the fisheries sector plays a greater role in providing protein food, food security, employment and foreign exchange through sustainable fisheries exploitation and aquaculture development having in mind that we have limited financial resources. I trust your deliberations will meet the expectations of the many stakeholders depending on the fishing industry.

Once again I would like to thank JICA and all the organisations which in one way or another have enabled each of you to participate in this workshop.

Mr. Chairman,

I wish you successful deliberations and look forward to you deliberations and guidance on how best together we can develop the fisheries sector in this country.

Mr. Chairman,

With these few remarks I declare this workshop officially opened.

09:40-09:50

Photographs

09:50-10:00 Ms. Kyanya

She insisted that the Master Plan Project is not for JICA but for the Tanzanians. Urged participants to contribute their ideas freely and actively. Project will be proposed in line with the existing conditions of the water bodies and the real situation of the people. She explained the objectives and purposes of the workshop.

10:00-11:00 **Presentation 1 Explanation of Fisheries Master Plan** Mr. S. Yamamoto

Explanation of the Master Plan (see Summary of Interim Report for the National Workshop).

11:55-13:00 **Presentation 2 Development of Marine coastal fishery (including Question & Answer for 10 minutes)**

Mr. Iida

Explanation on marine coastal fisheries (see annex I).

Dr. Chande

The best method of processing should be sought in order to ease marketing. As for sardines (*dagaa*) insect infection could be reduced by using salt and drying the products on racks in the sun (brining). Emphases should not be on increasing production only but also on processing and marketing of *dagaa* and *vibua*. Smoking method could also be applied in order for maintaining the products in good condition.

Mr. Baghat

He commented on the outward sea.

The landing sites along the coast must be improved to reduce the transportation cost. Some places are cut off for 4 months in a year like Rufiji, Kisiju and Nyamisati that stops transaction in these areas. Some areas are not easily reached by trawlers (vessels). Coastal people have the behaviour of disappearing after receiving credits or setting loans. Training programme for coastal fishermen to visit fishermen at Lake Victoria to see how the loan effectively operates in Lake Victoria might be an idea.

Ms. Kullaya

She commented that in addition to brining of *dagaa*, we should also consider canning and using hot ovens.

Mr. Jumbe Mzinza – Sengerema (Fisherman)

We have to be aware of ignorance and the necessity of education to fishermen. Fishermen that those who runaway from loans are ignorant. Hence, the Master Plan should emphasize first on education of fishers before the loans are issued. Sharing knowledge on credit system is priority to the implementation of the credit system.

Mr. Iida

About processing of *dagaa*, cost of processing should be thought. Because it is cheap, people are able to buy. Processing cost should remain minimum. Prices for dry *dagaa* from Tanga and Mwanza are the same. If *dagaa* from Tanga increases in price, it will be difficult for consumers from Tanga to buy locally produced *dagaa*. There seems to be no use for canning *dagaa*.

14:00-15:00 Presentation 3 Development of Lake Victoria fishery (including Question & Answer for 10 minutes)

Mr. M. Sato

Explanation on Lake Victoria fisheries (see annex II).

Mrs. Mallya

That *clarias* is not a good species for bait. Other species should be sought.

Mr. Abbas Nyanakama

That it is difficult to tell all fishermen to use *clarias* as bait. Some other species should be sought.

Mrs. Sobo

That there is a project on Lake Victoria Stock Assessment under the Lake Victoria Environmental Management Project. There is a need to design a project for statistical collection for all the water bodies in order to help us in management of the resources.

Mr. Buzinza

He has agreed with recommendation of Mr. Sato, the problem of big fishers is that they fish both in open and shallow waters. This should be supervised by the Government. Also any factory owner should assist in culturing fish through investment. The big fishers destroy juveniles by fishing in shallow waters that fishers should be guided by the Government through their assistance on controlling the prices. Factory owners should also invest in fish propagation.

Mr. Sato

That production of its fingerings in rural areas could also meet food supply and provide bait for Nile perch longlines. He has also agreed that the information system for the whole nation is very important and that the Master Plan will examine it.

The Government should not control the price, but the market mechanism should set the price.

**15:00-16:00 Presentation 3 Development of Lake Tanganyika and Lake Nyasa fisheries
(including Question & Answer for 10 minutes)**

Mr. T. Fujiki

Explanation on Lake Tanganyika and Lake Nyasa fisheries (see annex III).

Mr. Nkwani

Consumers do not see the difference between *dagaa* dried on sand and on racks. Businessmen see no point why they should cost expenses for racks.

Mr. Haider (UWAWADA)

Fishers can benefit from the Master Plan if the fishers are guided into cooperatives. And he believes that one of the incentives for joining the cooperative could be a new fishing method offered from the cooperatives.

16:00-16:40 Panel Discussion

Mr. Anakaleti Kapinga (Mbinga)

- The biodiversity of Lake Nyasa has been destabilised due to heavy deforestation. That the trees for dug-out canoes are diminishing year after year.
- We should not only concentrate on fish quality as it is very much emphasised in the Mater Plan. Rather, improving the incomes of the small scale fishermen by issuing them loans should also be sought.
- Preservation of *dagaa* should be improved through provision of drying equipments especially for the rainy season.

Mr. Kayungi

- Doubted the use of *clarias* for bait, that in Kagera region, thousands of fingerings are being imported from neighbouring country, Uganda. It is different to keep such bait for long hours.
- That expanding the international market of *Tilapia* like *Nile perch* will create malnutrition within the country as the population depends on them. Also, if the *Tilapia* is exported, it may lead to another European ban due to quality because of the way of catching.
- All the pilot projects are concentrated on Mwanza. They should be spread throughout the country.
- In Mwanza, small *Nile perch* gives higher prices than big individuals. This shows that the investors' plan is to destroy the *Nile perch* species.
- There is fish smuggling in Kagera by Ugandan traders because of the difference in price.
- There should be a youth fish project in Lake Victoria like in Kigoma.
- Especially for security reasons including patrol such as for smuggling, strengthening of the BMUs is emphasised.

Mr. Kelala

- Liftnets are used in Lake Tanganyika and are expensive. Any new method introduced by the Master Plan should be less costly.
- Fishermen should be educated the importance of repaying loans.
- Surveillance on boats carrying *dagaa* to Zambia should be strengthened and the payment of revenues to the Government should be increased. Currently it is the Zambians who benefit because of the smuggled *dagaa*.
- Data collection is a problem. In Nkagi district of Rukwa region, there is only one fisheries officer for all sites.
- Improvement of loading and unloading sites is necessary.

Mr. Masud Yunusi

- Proposal to give loans to fishermen in the coastal area should be promoted.
- Regarding data, statistics are being collected by the fishermen themselves and are presented to fisheries officials in Tanga.
- In Tanga, fishers use mango trees to build boats (plank boats). Using mango trees is environmentally good since they do not have much other use compared to other timbers.

Mr. Nhwani

- Master Plan must start at the village level rather than national level.
- Involvement of villagers will make them understand better their local conditions.
- The Master Plan Projects should be directed with full participation of stakeholders.

Mr. Baghat

- The stock of fish is unknown, more than \$50 million has been collected and spent on royalties per year and yet no system of knowing the stock has not been enforced on Lake Victoria and the coast.
- Longlining on the lake should be banned. Longlining removes the parent stock of the lake. 1.2 million pieces of *haprocromis* per year is used as bait for longlining. Hence we should reinforce the size of hook from 4 to 7 - 8.
- There are conflicts between fishers and processors who both seek for their own profits and do not consider their environment.
- Any net with less than 5 inch mesh size should be banned. We want to preserve the stock for our factories.
- The quotas cannot be applied if the stock are not known.
- The pressure on Nile perch is due to the fact that fishers make money.
- Ugandans pay more on Nile perch because of their economies of scale in terms of reduced costs. Ugandans do not pay service levies and other high taxes Transport costs of Ugandans are lower than in those of Tanzania.

Mr. Maembe

- The solution to the small-scale fishermen is to form cooperatives (SACCOS). Through contributions to the cooperatives will improve small fishers' lives.
- Fishers should participate through abiding by law and ensuring that culprits are arrested.
- The law is underway to empower fisher groups to control culprits. By doing so, thefts cases will be minimised.
- Aquaculture can contribute to increase fish protein and poverty alleviation.
- In the long run, we should create the culture of loving good standards, i.e. dagaa with good quality.
- We sell Nile perch outside the country because internal consumers' preference for Nile perch was low. Hence it had to be exported. On price stability, it is emphasised that fishers to get organised in cooperatives to have strong bargaining power for prices.
- Education is important at all levels not only youths but also all fishers.
- Lakes with huge quantity of fish, its stock assessment is difficult. It is wise to note that when catch declines, fishers should take measures immediately.
- What we all agree here during the workshop should be started its implementation by all participants and information shared should be passed onto other fishers.

Mr. Yamamoto

Thanked participants for their active discussions. Their opinions were good and coming from various types of people. It helped us all to share and exchange ideas. This was the purpose of the workshop. The Mater Plan involves the village level up to the national level, through discussions, some major issues have been raised;

- (1) Technology and
- (2) Information has to be shared for example, technology from Lake Victoria could be introduced into Lake Nyasa,

- (3) Financing; for harvesting, one has to raise the capital, the responsibility lies on the fishers themselves,
- (4) Resource Management, also depends on availability of information, and
- (5) prices also depend on information availability.

16:40-17:10 Grouping of the participants for Day 2 group session

E. 技術移転セミナー報告書

2002年4月18日 - 4月19日

**REPORT OF
THE TECHNOLOGY TRANSFER SEMINAR
FOR FISHERIES MASTER PLAN**

Host Organization: Fisheries Division, Ministry of Natural Resources and Tourism

Sponsored by: Japan International Cooperation Agency (JICA)

Date 18th and 19th April 2002

Venue: TEC Training Centre, Kurasini Dar es Salaam

**System Science Consultants Inc.
Overseas Agro-Fisheries Consultants Co., Ltd.**

**REPORT OF THE TECHNOLOGY TRANSFER SEMINAR
FOR FISHERIES MASTER PLAN -SUMMARY-
18th and 19th April 2002, TEC Training Center, Kurasini Dar Es Salaam**

1. Background

The Technology Transfer Seminar for the Fisheries Master Plan which was hosted by the Ministry of Tourism and Natural Resources-Fisheries Division and sponsored by JICA Tanzania, took place on the 18th and 19 April 2002 in Dar-Es -Salaam. The seminar was part of the planned activities to complete the processes leading to the completion of the Master Plan.

The seminar was opened by Mr. T.F.Killenga who represented The Permanent Secretary in the Ministry of Natural Resources and Tourism Mr Luhanjo after invitation by Mr Nanyaro who represented The Director of Fisheries Mr Maembe. Mr Nanyaro then read the speech of Mr Maembe and invited Mr Kinomoto, who represented the JICA resident representative to give his speech (see annexes 1, 2, 3, for speeches). The seminar was also graced by the attendance of Mr Nishizaki, JICA Tokyo representative.

In attendance were 80 participants from Fisheries Division, donor organizations and programmes, fisher group representatives and fisher cooperatives (see annex 9).

2. Objectives of the Seminar

The objectives of the seminar were:-

1. to reconfirm the outcome of the technology transfer through the Master Plan project to counterparts and at the same time,
2. to share the idea of the Master Plan among stakeholders involved in the fisheries sector as well as the priority programmes and projects therein.

The objective no. 1 was achieved through presentations by different persons while objective no.2 was achieved through group discussions and presentations in the plenary.

After the seminar was opened Mr. Raphael Mapunda, shared on the skills and technology transferred to the counterparts during the fieldwork. Key among this was the deep knowledge on information gathering techniques, how to develop a Master Plan as well as the use of different methods to gather both technical and participatory fish community related data. The counterparts too appreciated the exposure to all the corners of the country where fisheries are located and through sharing, identifying a new way of looking at issues in fisheries (see speech in annex 6).

Mr. Yamamoto, the JICA study Team leader then shared the process of the Master Plan design which included the identification of the national policy and the contribution of the fisheries sector to the national development, issues arising in the fisheries sector and the five basic concepts that have been developed from the issues. He then shared the development strategies accruing from the concepts and the priority programmes that have been developed to respond to the issues. This presentation based on the summary document of the Master Plan formed the basis for group discussions on day two.

A participant from UWAWADA, one of the fisher cooperatives in Dar es Salaam was invited to give a presentation on their strategic management plan (annex 11). He appreciated the willingness of JICA to support the fisheries sector and especially the artisanal fisher folk. He hoped that all will work out for the benefit of the fishers but requested the division to assist them to deal with issues in the sector.

The seminar process and programme (see annex 10) was then explained by the facilitator Mrs Bernadette Kyanya, who then handed over to the seminar chairman Mr R. Mapunda to invite the presenters. These were Mr W.J. Scheffers and Mr M. Sato. Mr Scheffers talked about the institutional building and capacity of the fisheries sector and gave some pointers to how it can improve (see annex 5), while Mr. Sato talked about the fisheries sector in Lake Victoria (see annex 4). He highlighted the positive efforts of the government of Tanzania in giving guidance to the use the fisheries resources in a sustainable way and hoped that with the Master Plan in place, these efforts will be stepped ensuring the resources are used properly.

3. Participants reactions and comments of the Master Plan

After the presentations, participants got a chance to respond and give their reactions to the presentations as well ask any questions they had. These comments and questions are presented in annex 7.

Day two of the seminar was concerned with the reading of the Master Plan document and making comments and recommendations as well as approve the various programmes. The group tasks were given as follows;

1. Read the section of the programme you have been assigned both in the summary and the main report.
2. Affirm and approve the programmes proposed.
3. Give any additional recommendations and any items/ needs that may need special attention.
4. Identify the roles of the different stakeholders who will be involved in the implementation of the particular programme; namely local government, central government (Fisheries Division), private sector, artisanal fishers, fish traders and processors, cooperatives and groups, NGOs and other donors. On presentation, all programmes were approved with suggestions and recommendations from participants. Details of these are in annex 8.

4. Conclusions and recommendations

The Master Plan priority programmes were approved by the participants and agreed upon by all present. It is recommended that a thorough check on the document be done to ensure a consistent flow of information and language. This was accepted by the team members.

5. Seminar closure

The seminar was closed at 18:00 p.m. by Mr D.M.K Kamamba, Director of Archives as well as Mr Nishizaki who thanked the participants for attending the seminar and wished them well.

OPENING STATEMENT BY THE DIRECTOR OF FISHERIES

Permanent Secretary,
Workshop Participants,
Invited Guests,
Ladies and Gentlemen

It is my great pleasure for me and a great honor for the Ministry of Natural Resources and Tourism to have this opportunity to give this opening statement. *On Finalization of F.M.P.*

This workshop is a major event for setting guidelines for the sustainable development of the fisheries sector in the country. Tanzania welcomes this important National workshop on Fisheries Master plan and we commend Japan International Cooperation Agency (JICA) for their financial and technical support which have made this workshop possible.

Tanzania is well endowed with water resources both marine and freshwater. She shares the three major lakes of Africa namely Victoria , Tanganyika and Nyasa and a coastline of 800km long. Other minor water bodies in the country are Rukwa, Eyasi, Manyara. There are dams namely, Mtera, Nyumba ya Mungu, Mindu and others.

→ Others/ water resources include a diversified river systems. Fisheries potential from all territorial waters is estimated to be more than 730,000 metric tons. Average annual landed catch is 350,000 metric tons. This shows that there are possibilities of increasing the annual landed catch.

With all these diversified water resources, one can not draw up sound management strategies without having in place sufficient and reliable baseline information which has been obtained through the Fisheries master plan study. *it is not possible* It is only through having proper management strategies that our mission for sustainable development of the fisheries resources become a reality.

Our vision aims at "Sustainable fisheries utilization" requires carefully and well guided planning. The fisheries industry of Tanzania has been expanding in the past twelve years due to the demand for increased supply of protein food, growing population and advances in technology. All these increase the pressure on living aquatic resource both marine and fresh water.

The implementation of fisheries Master plan study has come in at the time of great need. Sufficient and reliable baseline information of the fisheries resources nationwide has been collected by the Fisheries master plan study. Such information is a tool for a

successful implementable strategies towards sustainable management of the fisheries resource in Tanzania.

→ This workshop has an opportunity to share findings of the fisheries Master plan study among the study team members ~~and~~ their counterparts, and the stakeholders. It is our wish that the outcome of this workshop will be:

- Consolidation of the master plan study findings from various fields (interim report).
- A common understanding of the present and future status of the fisheries sector
- A common understanding of what are the main constraints and opportunities in the development in the fisheries sector nationwide.
- A common understanding of priority projects to be undertaken at national, regional district and village levels to promote sustainable management of fisheries resources.
- A common understanding of what should be the role of each level in applying sustainable management strategies

- A common understanding of the need of involving stakeholders in the development of the fisheries sector in Tanzania

The challenge to this workshop is to use the findings in the interim report to discuss and agree on the future development of the fisheries sector.

I look forward to the outcome of this workshop to be a corner stone of sustainable management and development of the fisheries sector in Tanzania.

Thank you for your attention.

**OPENING SPEECH BY MR. PHILEMON L. LUHANJO THE
PERMANENT SECRETARY OF THE MINISTRY OF NATURAL
RESOURCES AND TOURISM, AT THE NATIONAL WORKSHOP
OF FISHERIES MASTER PLAN KURASINI EPISCOPAL
CONFERENCE CENTRE 18 – 19/4/2002**

Mr. Chairman,
Mr. Nishizaki, The JICA Representative from Japan,
Deputy Resident Representative of JICA,
The Master Plan Study Experts,
Distinguished Workshop Participants,
Ladies and Gentleman.

Allow me to express my sincere thanks to the organizers of this important workshop for inviting me to officiate its opening.

I wish to convey my special thanks to the Japan International Cooperation Agency (JICA) for cooperating and collaborating with my Ministry to facilitate this important event. On behalf of the Government and the people of Tanzania and indeed on my own behalf, I wish to welcome all participants to Dar es Salaam and in particular to Kurasini, the venue of this workshop.

Mr. Chairman,
I am informed that the workshop will review the draft proposals of the Master Plan Study on Fisheries Development in the country which

was undertaken by experts starting from January, 2001. The plan is a strategy of implementing the National Fisheries Sector Policy which was adopted by the Government in 1997. The fisheries policy focuses on the promotion of sustainable exploitation, utilization and marketing of the fish resources to provide food, income, employment, foreign exchange earnings and effective protection of the aquatic environment to sustain development. In my view, the plan once completed will put in place a feasible integrated fisheries development programme that will stimulate sustainable economic growth of the sector in terms of food security, fishery environment protection and economic/social welfare of the fisheries communities. It is therefore appropriate you are all gathered here to deliberate on the main priority areas that should receive attention in implementing the plan. I trust that the deliberations of this workshop will significantly contribute to the development of a common approach to the management of the fisheries sector and the well being of the fisher folk.

I am convinced the Master plan will solve the past problem of the fisheries sector in which projects and activities were implemented on the basis of urgent demand and were not coordinated or integrated. The many constraints facing the fisheries sector have now been identified and through this workshop strategic interventions agreeable to all of you will be adopted.

I am informed that the Master plan team has identified 15 projects covering all the important fisheries bodies in the country and according to the needs of the many stakeholders who were consulted. Aquaculture has also been incorporated as it can be integrated with Agriculture and Animal husbandry in rural areas to increase fish production. I invite the workshop participants to carefully prioritise the project proposals in accordance to the needs.

Mr. Chairman,

Conferences, consultative meetings, seminars and workshop like this are often organized to discuss important and very sensitive relevant matters for the betterment of communities. However the challenge before us is to meet expectations and aspirations of the fisher communities, other stakeholders and the whole nation. We therefore have to put in place an implementable action plan of what is agreed by this workshop.

I strongly urge each one of you to participate actively in the discussions and exchange of experiences during the session, so that you may go back to your respective places of work having benefited greatly from the workshop. I have gone through the Master plan study summary report and I am happy it has focused on the national fishery policy of the fisheries sector contributing to food security and nutrition, protection of the environment; fisheries trade and reduction of poverty through fishing community development.

Mr. Chairman,

Let me take this opportunity to extend the government of Tanzania's gratitude and appreciation to JICA and other donor agencies for supporting our efforts to support the fishery industry in the country. I believe that the support will be maintained and sustained as we plan to implement the Fisheries Master Plan as a way of achieving sustainable development and economic, social and cultural well being of our people.

Finally, I would like to assure you that the Government of Tanzania is committed to implement the proposed projects as way of achieving sustainable social economic development and prosperity to the people. I would like to invite those coming from outside besides business, to use this opportunity to visit places of attractions such as Marine parks and reserves, the new integrated fish market and many other striking features in the city. Please feel at home away from home.

With these few words it is my honour and privilege to formally declare that the National Fisheries Master plan workshop is officially opened.

I thank you for your attention and wish you every success in your deliberations.

ANNEX 3

SPEECH BY MR. HIROYUKI KINOMOTO DURING THE NATIONAL
WORKSHOP ON FISHERIES MASTER PLAN -
APRIL 18 - 19, 2002

^{Acting}
Honorable Permanent Secretary
Ministry of Natural resources and tourism
Workshop Participants
Ladies and Gentlemen: ^{Experts of the Study Team}

First of all I would like to begin my remarks by expressing to you, dear Workshop Participants, my most sincere thanks and gratitude for inviting me to this important Workshop to represent the Japan International Cooperation Agency (JICA). We, in JICA Tanzania Office feel very much honored and in deed very privileged to be associated with this important two - day Workshop.

This is an important Workshop because it is going to confirm the guidance on priority areas for the development of the Fishery industry in Tanzania. For as we all know Tanzania is well endowed with water resources and coastal line potential for fishery activities. This means that the fishery industry has a very high potential role to play in the development of the country's economy.

According to the available statistics, about 80,000 people were directly employed in this sector in 1999. It is further estimated that, about 400,000 people were employed in fish processing and marketing in the same year. Fish has become an important export product. In the year 2000, for example, the total export value of fish products was UD Dollar 75.5million.

Moreover, surveys have shown that ^{In addition,} nutritionally fish products are among the main sources of animal protein which could be reasonably afforded by Tanzanians at all levels. It is precisely because of these facts that for any meaningful development to take place, the development of Fishery is indispensable.

Indeed it was through the realization of this fact the Government of Tanzania, has established National Fisheries Sector Policy and Strategy Statement in 1997, as a basic policy towards the revamping of this sector. On enforcement of HIPC initiatives in Tanzania since the year 2000 the national target has been focused on poverty alleviation. And it is quite clear that considering ~~that~~ a large part of the population is involved in fisheries, if the sector is developed it

will contribute substantially in the efforts of the government to reduce poverty.

However, in order to revamp the sector, it was felt necessary to have a National Fisheries Master Plan to begin with. The Government of Tanzania did not unfortunately have capacity to prepare the same. In view of this situation the Government of Japan responded positively to the request from the Government of Tanzania to provide Technical support for the Master Plan Study on Fisheries Development. It is not my intention to repeat all contents of the study because as (experts you were involved in the process) and you know it well.

However, permit me to mention one factor which has adversely affected the development of Fisheries. This is the continued use of unsustainable fishing practices. We believe that the use of unsustainable fishing practices in some parts of the country has resulted in the depletion of natural resources and general degradation of the environment. These have ultimately resulted to the decline of fish production. This state of affairs cannot and should not be allowed to continue unchecked. I believe the master plan has addressed this promptly.

We in JICA Tanzania Office were delighted to learn that the Fishery Development Master Plan has analyzed the fishery sector in Tanzania and identified priority areas for the sector development.

More importantly however, we were delighted to hear that this Workshop intends to share with other stakeholders, the findings of the Master plan study which will nearly be completed.

We strongly believe that through sharing information the final report will be enriched with various practical experiences which will concretize the plan towards spearheading fight against poverty through the development of the fishery industry in Tanzania.

We JICA in Tanzania Office are therefore eagerly looking forward to hearing the outcome of the deliberations of this workshop.

I thank you very much for your attention.

ASANTE SANA

ANNEX 4

ACTIVITIES OF FISHERY COOPERATIVE AND RESOURCE MANAGEMENT AS ITS IMPORTANT ROLE

Presentation by team member, Masashi Sato

Current situation in lake Victoria

Since introduction of Nile perch from Lake Albert in 1950's and following development of its filleting industry along the lake, numerous job opportunities have been created. A few professional fishermen changed their fishing and a lot of farmers turned to Nile perch fishermen for seeking instant cash. Some clever businessmen and fishing boat owners found their chance to expand their business. They got a fund for boat, engine and gears, and employed a number of non-skilled young men. In return for fund, they supply Nile perch to the factory. In this manner, Nile perch industry has developed. Number of fishing boats, fishermen and gears has increased in a very rapid pace. People say that status of Nile perch fishing is over-exploited. Because size of individual and catch volume is decreasing in last several years.

People of Tanzania and government in charge is smart. They legislate some important fishing regulations such as ban of trawl fishing, minimum mesh size and protection of breeding zone. And fishermen honestly and frankly respect these regulations. In my experience in Africa, I hardly know the case that fishery officer advice to fishermen or traders to correct bad manners whenever or wherever they found it. I think this is the sign of Tanzanian seriousness toward the job. What I know in most case is that, when I find illegal fishing and point it out to officers, they just laughing and do nothing. In this sense, I believe that you can do something that you have to do to improve your fishing industry of Tanzania and improve your life.

Resource management

As everyone knows, Nile perch fishing is one of the important industries of Tanzania. And therefore you have to do something more that you can do to maintain the industry, maintain the fishing. Needless to say, resource management is not an easy job. You definitely need the precise biological and ecological information on Nile perch, which is under way by TAFIRI, to legislate further regulations. They may be;

- 1 Closing period of fishing
- 2 TAC (Total Allowable Catch)
- 3 Regulation of fishing effort such as fishing boat

But this is also true that fishing regulations are not simply determined by scientific observation. They may need political consideration in most cases. Here I give you some examples of closing period in particular African countries. The 1st example is Madagascar. Their biggest interest among fishery resources is shrimp because it brings huge export earnings. Now there are two fishing companies, one is French the other is Japanese. And government of Madagascar gets huge amount of money from their fishing like Tanzania. But because of concern that the resource is diminishing nowadays, the government enforced the total closing period of 2 to 3 months. Closing date and opening date of fishing is determined by the special committee, which is consisted of scientist, fishing company and government authority. And so far I heard that this system is working well. The amount of shrimp export is

maintained. The 2nd example is Morocco. Their biggest export commodity is octopus. According to the national statistics of Japan, about 60% of octopus consumed in Japan is from Morocco. But recently, they enforced the closing period of 2 to 3 months. These are just some examples of your neighbours. I don't think that this measure can be simply applied to Nile perch. Because biological characteristic is totally different from said two species. It is said that life span of these two is only one year and breeding season is clearly identified. So we can easily imagine that resource level can be maintained to some extent if breeding period is protected. Looking at Nile perch, its life span is more than 1 year and they don't have a clear peak of breeding. But we know at least that they breed in a shallow enclosed area where there are a lot of obstacles like rocks and weeds. In that sense, protection of breeding zone is right thing. But is it sufficient? It seems not. You have to enact further measures. To me, the most possible next measure is the control of number of fishing boat. Since you have already the fishing boat registration system, you can do it very easily. Morocco does have the same system. But regionally recognized fishing country "Senegal" does not. Their fishing fleet increases recklessly and brings decrease of catch. And fishermen of Senegal migrate to neighbouring countries where there is still fertile resource.

Well, now let's scope up on TAC system. This system is scientific and sophisticated one enforced in Japan since several years ago. EU countries also have this system. It needs accumulated precise scientific data on target species, political arrangement and decision, and catch data collection system. In the bottom stage, such as catch data collection, in Japan, fishery cooperatives play a very important role. But our fishery cooperatives have not been established in a day. They have more than a hundred years of history. The base of Japanese fishery cooperative is a fishing right. In a last century, people believe that coastal zone up to certain miles from the shore in front of fishing village belongs to this village. It means that fishermen of this village are allowed to go this zone for fishing but not for fishermen of other villages. Later years this concept was legalized and stipulated in the Fishery law, our truly legal base of fishing industry. And based on the fishing right, fishery cooperative is established to use and manage the resource. Fishery cooperative is nominated as a responsible body for resource management by law. Resource management is not only to limit fishing activity but also to enhance their resource. I will speak about resource enhancement later.

Fishery cooperative

"All for one, one for all". This is an ideology of mutual cooperation. It can be say in another way, "Fishermen for cooperative, cooperative for fishermen". It is said that people of Tanzania was betrayed and disappointed by this concept in 1970's. But still I believe that you need certain organization for fishermen in the village either in the form of BMU or fishery cooperative. In Japan we have fishery cooperative law. It says all aspects of fishery cooperative such as legal status, activities and business, process of establishment etc. Among those, here I explain a variety of business they do such as,

- 1 Marketing
- 2 Facility management
- 3 Sales of goods
- 4 Banking and credit
- 5 (Resource enhancement)

1 Marketing

There are two marketing styles, one is cooperative as an agent or an organizer of bidding. Cooperative itself does not buy or sell products but just intermediate transaction between fishermen and buyers. It takes in return for this service, a commission of usually 5.5% of price. The other style is to buy and sell products actually. The marketing is not only a style of business but also providing a sort of confidence to member fishermen that those who buy their catch are guaranteed. This is very important thing.

2 Facility management

Fishing cannot be done not only with fishing boat and gears. It needs certain back-up facilities such as fishing port, market, ice machine, cold storage, repair workshop etc. But individual fisherman cannot afford to have some of them. So fishery cooperative provide those facilities for common and maximum use. In most cases, these facilities are so expensive that even the cooperative cannot afford to construct them and regional government or central government provides subsidy. Member fishermen are allowed to use these facilities with some minimum charges.

3 Sales of goods

In most of the case, fishing villages are located very isolated and remote areas where there is no supermarket. Villagers are forced to go time to time to town to buy commodities for everyday life as well as fishing gears. Besides, in an economical logic, if you buy a certain lot of commodities, you can negotiate to reduce a unit price. This business is rather simple and easy to start at any time even at Tanzania. I know that Jamaican fishery cooperative sell any kinds of goods such as cement, wood, metal roof, soap, detergent, pesticide, etc. etc. Needless to say, fishing gear is also important goods to be handled at coop. store. At this point, important thing is to differentiate the price for cooperative members and non-members.

4 Banking and credit

As I mentioned before, most of the fishing villages are located in a remote area where no bank exists. Therefore, through the depositing of marketing commission and facility use fees, fishery cooperative should have a function of money deposit and credit. As everybody understands the purchase of fishing boat or engine is not an easy job. However, an ordinary bank hesitates to borrow money to artisanal fishermen. In that case, fishery cooperative could be a helpful financial source for members.

In case of financial institutions, certain scale merit could be required for the sense of stability and confidence. In Japan we have regional federation of credit function above the individual coops, and further national federation above regional ones.

5 Resource enhancement

As I mentioned before, fishery resource management is not only the limit of fishing effort. You may take a measure of resource enhancement in future. That is for example, seed production and release to the lake, and fishing ground improvement. Seed production is basically the task of public service, local or central government. Because its service does not connect directly to the benefit of private fishermen. In Japan, fishery cooperative buys seed from public seed production center and release to their fishing ground for members' benefit. Of course they buy and release economically viable bottom fish that stays relatively long time

in their fishing ground like snappers. Resource management of their fishing ground is their responsibility.

On the occasion of national workshop held at Morogoro last October, an opinion of Nile perch aquaculture was presented. Although I don't know how deeply the biology of Nile perch is studied and clarified, seed production of said species and its release to the Lake might be possible solution for resource enhancement. But for the implementation of this program, level up of aquaculture technique is essential. Finance could be provided largely from factories and government, and some from fishery cooperatives. It may take long time though.

Another measure of resource enhancement is to create fishing ground in your territory. Although this is too costly but its results is guaranteed. That is artificial reef. There are roughly saying, two different artificial reefs, one is floating objects and the other is sunken objects on the bottom. I don't know the case that these types of artificial reefs are set in lake or river. But there are many examples of those at coastal zones. Floating reef is often called "Payao", word of Philippine. Payao use the characteristics of pelagic fish that prefer to stay below floating object. Payao can be made of used material like wooden power pole or drum cans. So we can say that this is for artisanal level in terms of finance. But there is always the risk that Payao is washed away when sea is rough.

On the other hand, sunken reef is to use characteristics of bottom fish to prefer staying in and around objects. This object can be used for breeding place, eating place or hiding place from predator. In the most case in Japan, this object is made of concrete, stone or steel. In certain country like Senegal, they sink used discarded cars or boats. Although you may need an environmental consideration in such a case, it could be a cheaper way. But again, the cost of this measure is so huge compared with the financial capability of fishery cooperative. In Japan, about 80 or 90% of total cost is subsidized by the regional or central government.

Well, what I spoke right now may be the image of future fishery cooperative and its important role in the resource management. And I believe that this is a right direction toward the development of fishery in Tanzania. Thank you.

ANNEX 5

SEMINAR ON FISHERIES MASTERPLAN

Presentation by team member, W. J. Scheffers, Institutional building

Having spent over twenty five years in Africa working for FAO as a Fisheries Officer please permit me to mention today some private opinions on observations made during my stay in Tanzania with the Master Plan Study on Fisheries Development.

1)

Extension services programme for district officials and district fisheries officers conducted by a team composed of fisheries HQ staff and lecturers from the various training institutes. In each region several such teams should elaborate a, quarterly, visiting schedule to the districts in order to explain and to create awareness under the fisheries staff and district officials on data collection and implementation of the fisheries policy.

District fisheries officers and extension officers are, by far, the largest group in the fisheries sector in the country and most are diploma holders from Kunduchi and a few certificate holders from Nyegezi Freshwater Fisheries Training Institute, most of them lack planning and project appraisal skills. There are only four district fisheries officers with an university degree. Some districts are left with no fisheries personnel in spite of the fact that fisheries officers are essential to cover the fisheries activities.

The local Government Authorities lack priorities to service natural resources conservation and management activities in such a way that there are no funds for buying stationary etc. and in the extreme cases no salaries for some month. The situation is so pathetic that many staff are demoralized just to sit around without doing anything useful. Most Local Government Authorities put top priority in revenue collection above anything else. Most field staff including fisheries personnel are deployed in revenue collection raids otherwise they do not get salaries for that particular months.

The ongoing decentralization process will put more and more responsibility on the shoulders of, local government, district officers and who are far from specialists in every field they have to cover. Unfortunately most of the district officers are not up to their task to explain and educate their district superiors and which of course in their position is not an evident matter to handle.

To attend to this serious matter one of the recommendations (no. 5) entitled: "Programme implementation based on a sense of responsibility and self reliance of the beneficiaries": The fundamental objective of the programme are to strengthen the capabilities of the District Fisheries Officers who provide direct guidance to the fishers.

It is therefore proposed that a team (2 to 3) of fisheries experts drawn from the various training institutes visit on a regular base the district offices:

To explain the fisheries policy and the needs to be covered to elaborate and to keep this policy up to date through through an adequate data collection scheme;

To give the district officers their much needed attention and guidance which will facilitate the work of the fisheries district officers and who on their turn would through a substantial improvement of their performance gain respect and attention from their district bosses.

For long the district fisheries officers have been left on their own and their enthusiasm for the job is moderate to low. By regular visiting their offices and supplying guidance, advice and follow-up action their spirit may revive and their pleasure in the job come back.

Some locations were actually the idea was born and where results were booked:

Bagamoyo

During several visits to the district fisheries office the team member discussed with the fisheries officers ways and means to study active cooperatives, the trade of fishmongers and the fishermen activities to such an extent that the fisheries officers took the initiative to elaborate a future follow-up programme which would elaborate the interaction between the groups and their in common commercial activities.

Interest has been created in the possibilities to gather data which are easy available and obtainable at no extra cost or means. Discussed was the project idea for the regular visits of a team of local experts in order to stimulate and activate the district fisheries officers in their data collection and analyses which eventually would lead to a personal interest in the officer's work and would eventually assist the fisher folks in their work operations and the district officials in their decision making.

Mwaloni Market Traders Development Society. MWADESO

At several visits to MWADESO it was observed that detailed data (weight/quantity) on revenue per commodity traded in the Kirambo market, and collected by the grass root revenue collectors, were not elaborated. The importance of the elaboration of these data for the analyses of the market activities and strategies was stressed upon and it was recommended to engage an university student for the compilation of the data in the computer and to execute various analyses and presentations. An example of diagrammes obtained from Nyegezi showing total number of students divided in number of male and female students was presented to show the possibilities of presentation of total weight/quantity of commodities traded at the Kirambo market divided in the individual weight/quantity per individual commodity. The discussion on detailed data analyses rose interest and follow-up action was anticipated.

Nyegezi Freshwater Fisheries Training Institute.

Initial discussions held on the revival of the Institute attended by the head of the departments and chaired by the deputy principal resulted in the return on duty of the principal to coordinate the activities which conclusions were finally compiled in a comprehensive report elaborating a full fledged project on the institute's future performance.

2) Construction of new fisheries office near Banda beach market

Is the Fisheries Division spread over three floors, the Ministry of Natural Resources and Tourism itself is located in various buildings which dispersion is not favourable for the internal and inter ministerial relations. The fisheries staff suffers under this lack of communication and they long for regular meetings to be briefed and for an understanding what is going on. The offices are small and crowded and desks are full of piled up documents. Some offices are air-conditioned while others enjoy a nice sea breeze. In general the working conditions are not favourable and talking to the staff the overall complain is that the existing manpower capacity is insufficient and that modern equipment, in case available, is not working or has a limited capacity to cater for new adequate programmes.

Equally the reception of commercial steak holders is poor and licenses or certificates have to be obtained and discussed in overcrowded and unfavourable conditions which does not contribute to the much needed esteem for government in general and in particular for the fisheries division which activities cover large income generating funds.

New and well equipped offices would enhance the working capacity of the fisheries staff and contribute to an efficient relationship with the commercial steak holders who would experience through adequate services that their monies in form of royalties and fees are well handled and used for their own interest.

3)

The organisation of an independent counterpart structure enabling the creation of a full fledged discussion partner. The counterpart structure should have their own programme and budget to enable the organisation of regular meetings/seminars where project ideas could be formulated.

4)

The set-up of a mobile phone communication system between a shore based trader and fisher groups active on the lake. Catch data could be gathered prior to landings enabling negotiations with factories on a purchase price and landing location.

Chairman, ladies and gentlemen thank you very much for your kind attention.

FISHERIES MASTERPLAN STUDY COUNTER PART REPORT

1. Background:

Tanzania is endowed with many Fisheries Resources in the fresh water and marine water fisheries. The Territorial Marine Water area is about 64,000 Km² and the Exclusive Economic Zone is about 223,000 Km². The fresh water covers some 58,000 Km². Also the country has diversified river systems and wetlands.

The fisheries sector is important in provision of protein food to the people, employment opportunities and export earnings. Commercial fisheries resources for export include the prawns, lobsters, crabs octopus, squids and sea cucumber. From the fresh waters the fresh water commercial fish for export include Nile perch which forms more than 80% of total export earnings, small pelagic clupaid fishes found in Lake Victoria (Rastreonebola argentia) and Limnothrissa tanganicae. Stolothrissa miodon from Lake Tanganyika while Lake Nyasa has Engraulicypris Sardella. Different species of "tilapias" are found in every fresh water bodies. This species forms an important food to the population.

Tanzania is a tropical climate country and has many species which need a collaborative and coordinated modes of development such that there is real development and sustainable management. The Fisheries projects and fishery activities in the fisheries sector have been implemented on the urgency and they are not coordinated or integrated.

This necessitated the Government of Tanzania to seek assistance from the Government of Japan to implement a Master Plan Study.

The Fisheries Master Plan Study started in January 2001 and the study is supposed to end by may 2002.

2. Objective of Study:

- a) To conduct the Master Plan Study aiming at improving of national Food Security and growth of economy through integrated approach:
 - i) Increase of income of fisherfolk;

- ii) Improving fisheries products utilization and their marketability;
 - iii) Improvement in planning, development and management of the fisher communities;
 - iv) Conservation and effective use of natural resources.
- b) To carry out technology transfer to Tanzania counterparts
 - c) Scope of the Study
Phase I was concerned with diagnostic analyses of the present condition and formulation of the Master Plan.

2.1. The collection of data and analysis was based on the:

- a) Fishery sector conditions on legal and development;
- b) Fishing and fish production;
- c) Fish processing and fish distribution system;
- d) Industrial fisheries and export;
- e) Fishery infrastructure;
- f) Fishing community and Socio economic conditions
 - Social structure of fishing communities
 - House hold economy
 - Rural credit
 - Gender related issue
- g) Natural conditions
 - Meteorology
 - Topography
 - Water resource
 - Others

2.2. To select model area in each water body

2.3. To identify the needs and problems of the model area under the participation of stakeholders. Project preparation by participatory process by involving beneficiaries/stakeholders in determining design and management of the programmes. This was done through regional and National Level Seminar/Workshop - appointment of working groups.

- 2.4 To formulate the Master Plan including development programme (i.e. priority project) for short and long term in each model areas.

Phase II: Feasibility Study of the Projects

To conduct feasibility of the priority project

- Project design and cost justification financial and economic analysis;
- Organization & Management ;
- Initial environmental examination.

3. Team Members:

- i) Project Manager;
- ii) Fish market and distribution;
- iii) Fisheries Institution/Community participation;
- iv) Fish production (Inland + Marine);
- v) Fish processing (QC);
- vi) Aquaculture;
- vii) Fishery Infrastructure
- viii) Coordinator

4. What has been gained?

- Knowledge on data collection;
- Visiting different parts of the country and seing different people;
- Project preparation on participatory process;
- Enlarging knowledge on fisheries by visiting some countries eg. Kenya and Uganda
- Priotising of projects according to the need.

5. Field observations:

- Fisher communities are ready to charge of given assistance in terms of loans;
- Fish traders from Nyamisati downward to Mtwara need cold facilities in order to distribute their products to distant markets;
- Aquaculture development is possible.

6. Out puts:

- i) National Master Plan for fisheries development;
- ii) Technology transfer: All levels.

ANNEX 7

COMMENTS & QUESTIONS FROM PLENARY

PG S30 Program 5

Igombe site: This is a congested site and an alternative site TX was recommended (Team members had seen TX).

Page S35 Program 8

Micro-projects: Let the community members develop a Sense of ownership through contributing labour / materials.

Page S4

Mtera Dam & L. Rukwa: The sizes of the two dams are not the same. Mtera dam is smaller than L Rukwa.

Page S5

Spelling of *Stolothrissa* (see the correct one); Correct Mkebuka to Migebuka.

Page S1

Overall objective of the Master Plan: To achieve this need the Master Plan cannot ignore research (This is true for some water bodies but most research outputs from the lakes have not been shared fully and yet there has been lots of it done).

Recommendation; Incorporate TAFIRI in the Master Plan for research.

- Conservation not considered for sustainability – include it in Page 51.

Observation S10; main trends of species of fish.

- Prawn fisheries let it be considered in the marine fisheries development. How about Industrial fishery – what is its status?
- S7 Mtwara & Lindi – through these programmes prawn fisheries will be taken care of.
- S 51 Schedule of Implementation OK but program 15 should not be only for 3 years because being capacity building, it should be continuous.

Page S10

There are weak extension services in the sector and with aquaculture starting late in the program this is not welcome, start it earlier.

Page S38, programme 10

Software development and training on Master Plan

Timeframe on S51 – shift to extend to year 2002 for the two to coincide.

Page S4

% of Lake Victoria size is 51% and not 49 % (this is to be confirmed).

Page S17

BMUs are 511 on the ground and not over 600. Change statement --they are not functioning to --they are not working effectively.

Recommendation: Artificial reefs to be considered in Marine. And not L Victoria only.

Objectives: -The style of writing these is different. e.g. in page 39, 44 some are not really Objectives but outcomes. Harmonize them.

Page 48

Fishing communities -what is their relation with zonal committee? Culture that affects fisheries is not analysed. It is good to include the cultural practices that affect fisheries.

Construction of landing facilities: S51 construction to start in 2009? This is too late.

Correction – EEZ area total 223, 000 km²

Program 7 – consultation with other countries on L Nyasa planked canoe programme? *No.*

Defunct facilities in L. Victoria zone: these could facilitate in training rather than taking all to all training to Nyegezi (*This is a decision to be made during implementation stage.*)

Independent resource management system -change to collaborative resource management system to empower fishers.

English medium of communication is denying chance to Swahili speaker.

Page S5 Para 2.

However, no activities to address deep-sea fishing (*Not to cover EEZ in agreement with JICA.*)

Page S40 – No. 9, no site plan

Correct information is important for planning. Considering culture is very key. Mbegani is not focused on, including all issues.

Page S1 & objectives to guide

This is focusing on mainland but in reality focusing on selected areas e.g. co-management Mwanza and Sengerema. It does not mention on how to go on in other areas and lakes.

Page S5

Full exploitation of major species – does not focus on conservation but utilization.

Page S8 Cooperatives

Look at the fishery cooperatives strategically due to their uniqueness. Consider all items – finance, training in post harvest management, freezing marketing etc. due to its mobile activity, have a special legislation on fisher cooperatives and formation of SACCOS.

Page S51

Important – does the schedule depend on funds availability? *Yes if one has the funds can they start right away.*

ANNEX 8

Group Presentations and Reports on 15 priority programmes

Program 1:

Marine Fisheries Sub Sector Capacity Building Program:-

1. The Program was affirmed & Approved by the group members.
2. Recommendations: A component of empowering the community to some kind of monitoring system which will ensure sustainable use of fish stock.
A component of a monitoring system which will ensure sustainable export.

Lindi and Mtwara regions should also be included in Phase.

Reasons:

The two Regions and Mafia are in the same belt and least developed in fisheries. If the problem is about funds. The group suggested that the central government should inject funds to ensure Lindi and Mtwara take off with others. Alternatively, we suggest in programme I, section of on Job Training for Dar es Salaam should be carried forward to Phase II instead of phase I (for Lindi & Mtwara to be accommodated).

There should be a component in the programme of empowering fisheries cooperatives to do some kind of catch motoring system which will ensure sustainable use of fish stocks e.g. awareness in the importance of catch data.

- Training in collection of data and provision of necessary equipments.
- Training in analysis of data with support from District Fisheries Officers.

Information of on status of local fisheries is critical for decision marking by the Cooperatives for examples selecting fishing gears.

Presentations of Comments and recommendations from Groups on Programmes

1 Marine fisheries – North(Tanga,Bagamoyo,Dar Es Salaam, Kunduchi, Mbegani, TAFIRI - Dar)

Programme 1

Evaluation & Rewording of objective

1. To demonstrate that fisherfolks incomes can be raised through formation of joint fishing and marketing groups and cooperatives.
2. To encourage joint marketing of fish by groups and cooperatives as a means of stabilizing fish prices for the benefits of both fishers and consumers.

Project site: Tanga region to be included in phase 1

Condition for implementation

- The Word “Cooperatives” to be substituted with groups.
- The Role of the fisheries division to be facilitation and not direct supervision.

Stakeholders and their Roles

1. Local Government, Municipal Council and district Councils

Roles:

- (a) Facilitation
- (b) Supervision

2. Central Government

Roles:

- (a) Policy Formulation and implementation
- (b) Capacity building
- (c) Infrastructure development

3 Artisanal Fishers

Roles:

- (a) Network
- (b) Awareness

4. Traders

Roles

- (a) To be Agents of procedure groups
- (b) Market – link between procedure groups and consumers

5. Processors

Roles:

- (a) To reduce post harvest losses
- (b) Stabilization of fish prices

Programme 2

Stakeholders

1. Ilala municipal council

Roles:

- (a) General Management of the Facilities

2. Tanzania Harbours Authority

Roles:

- (a) Safe passage of fishing boats and anchorage

3. Artisanal Fisherman

Roles

- (a) Principal users of the facilities

4. Traders

Roles:

- (a) Supply of related goods and services.

Programme 2

Dar es salaam fisheries infrastructure improvement programme

1. Programme approved

2. Recommendations

- (i) Landing – site improvements centred on Lake Zone and Dar es Salaam. We recommend to consider including other major marine fisheries centre, especially MAFIA which lacks any at present.
- (ii) Likewise, Southern coast fishery centres lack cold storage facilities leading to post – harvest losses.
Recommend to consider Mafia, Lindi, Kilwa & Mtwara as well as Dar es Salaam.

Programme 12

Fisheries financial support programme

1. Programme approved in principle

2. Recommendations

- (i) Role of NGO should not be to manage collection of repayments but rather to build capacity within District & fishing Co-operatives to develop a sustainable long-term mechanism for collecting payments. Otherwise repayments to the revolving fund will collapse after 2 years project. (Costs of contracting NGO are not sustainable beyond 2 years project).
- (ii) Success of this programme is closely linked to programme 1 (COMPONENT A, Activity 2 – training in financial management etc for fishing in financial management etc for fishing co-operatives). However timing of programme 1 is 2003/4 and programme 12 is 2006/7. These two activities need to be linked in time OR otherwise to add a training component within programme 12.
- (iii) In the budget, ” personnel” costs are 55% of phase 1, whereas credit funds are only 30% this does not seem proper balance especially as there are also additional funds (12%)f or expert inputs of NGO we recommend budget be re-balanced in favour of credit provision & training/capacity-building for long-term management capability, rather than short term personnel costs.

Programme 8

Fishing communities development programme

1. Approved in principle

2. Recommendations

- (i) Its mentioned this is a national programme. But only 2 districts included. We recommend to extend to other less developed coastal districts, especially Mafia Kilwa, Lindi & Mtwara from 2008/9, but included in programme funding from the start.

Programme 9

Fisheries co-management programme

1. Approved

2. Recommendations

- (i) This programme is envisage as a national programme. But focus is only Lake Victoria, What plans to extend to coastal areas.?

Roles of the stake holders

Prog. 1 Capacity Building

L/Government	Enhancement and improvement of Fisheries Coop. Societies.	Workshops & Seminars
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	Training & awareness Supervision and Monitoring	
C/Government	Training & Finance Advice	Look for Donor & foreign currencies
P/SECTOR		
Artisanal Traders Processors	Formulating Fisheries Cooperatives Opening Savings A/C. Formation of Constitution Local Fishing. Technology transfer Catch data monitoring marketing	Mobilizing groups Self reliance Learning from each other Get training from district fisheries offices.

Programme 8

Comments

- The programme is very important in poverty alleviation among fisher folk communities.
- The success of the programme will highly depend on good network in identifying target individuals and groups, recovery of loans and funds accountability.
- Tanga Region should be included in this programme.

Stakeholders:

1. Resident Fishers and groups

Roles:

(a) Actual Fishing

2. Traders

Roles:

(a) Marketing

Programme 9

Project site

It has been observed that fisher attitudes and practices in the Lake zone differ with those in the Marine areas, there is therefore a need for a pilot area in the marine area.

Tanga Regions is recommended.

Stakeholders

1. Artisanal fishers, groups and coops

ROLES:

- (a) Awareness
- (b) Networking

2. Local government and community leaders

Roles:

- (a) Facilitation
- (b) Supervision

(c) Monitoring

3. NGOS

ROLES:

- (a) Facilitation
- (b) Awareness

4. Tanga coastal zone management programme

Roles:

- As above

5. Tanzania coastal management partnership (TCMP)

Roles:

As above

Group 5 Lake Nyasa

Programme 7

Planked canoe extension programme in Lake Nyasa

1. Program affirmed and Approved

2. Additions

- (i) Training Centres:-
 - (a) Kyela
 - (b) Liuli
- (ii) Personnel Plan
 - (a) Boat build instructor
 - To invite Master Carpenter from KIGOMA instead of MWANZA.
 - (b) Planked boat operator instructors
 - To come from KIGOMA
- (iii) Implementation Schedule priority programmes.
 - To start from 2004/5 to 2006/7.

Roles of different. Stakeholders

STAKE HOLDERS	WHAT	HOW
C. Government	Supervision	To provide
L. Government	Dissemination of information	To provide local staffs, participation in selection of trainees and training.
Private sectors * Artisanal fishers.	Participation in the program	Source of knowledge, To provide trainers & trainees
Traders	Support program	Financial/contribution and materials.
Processors	Support program	Financial material contribution
Cooperatives	Support program	Financial & material contribution. To supply trainees.
NGO'S	Participation & support	<ul style="list-style-type: none">- Staff- Materials & equipments- Buildings- Financial support

Program 8 fishing community. Development. Program

1. Programme affirmed and approved

2. Additional Rec

- (a) Project Sites:-
 - 1. Mbeya (Region) – KYELA District
 - 2. Iringa (Region) – LUDEWA District
 - 3. Ruvuma (Region) Mbinga District
- (b) Project Costs
 - To be revised
- (c) Comm. Development Training Courses will be conducted in 8 (eight) villages along Lake Nyasa.
- (d) Lake Rukwa 2 villages to be involved.

Roles of different stakeholders

Stake holders	What	How
C. Government	Supervision Mobilization	To provide staff
L. Government	Support program Ext. Services	Staff Revenue collection
Artisanal fishers.	Participation	Financial. Contribution Revenue collection Providing trainees/trainers Fund management
Processors & traders	Participation	financial support
Cooperatives	Participation	. Financial support Trainees + trainers
NGOS	Participation	Training support Credit loan sport

Program 9 fisheries co-management programme

1. Project affirmed and approved

2. Additional informations

- (a) Project Sites
 - (i) Mbeya Region – Kyela District
 - (ii) Iringa Region – Ludewa District
 - (iii) Ruvuma Region Mbinga District
- (b) Project Costs
 - To be revised
 - Targets are villages to be considered along Lake Nyasa

Roles of different stakeholders

Stake holders	What	How
C. Government	Supervision Awareness	Transport Staff

		Meetings
L. Government	<ul style="list-style-type: none"> - Extension services - Dissemination of information 	Staff Transport Meetings/seminar
Artisanal fishers.	Participation	Monitoring and controlling of resources. Management of the resource.
Processors & traders	Participation	Contribution i.e. financing, Ideas Materials
Cooperatives	Participation	Contribution i.e. knowledge Financing Materials
NGOS	Support	Training, Equipment, Fund.

Group 3 (Mara and Kagera region of Lake Victoria)

Programme 3 (Lake Victoria Fisheries Sub-sector Capacity Building)

1. The programme is approved.
2. Training to be conducted at Nyegezi Fisheries Institute.
 - FRP boats construction to be extended to the three lake regions
 - Infrastructures for boat building are in the three lake regions
 - It is suggested that boat builders be availed from other boat building units in the country.

Stake holder	What	How
Local Govt.	Personnel	Sensitisation, Mobilization and Funding of communities
Central Govt.	Building and Personnel	Training and Funding
Private sector		
Artisanal fishers	Fisheries resource management	BMU and Cooperatives by reducing post harvest losses Surveillance
Traders	Fishing gears and equipment	Selling fishing gears in fisheries regulations
Cooperatives and groups	Collaborators	Training, Mobilization and registration of fisher cooperatives
NGO's	Mobilization and sensitisation	Trough meeting and seminar & workshops

Programme 5 (Major landing beach Improvement)

1. The programme is approved

Stake holder	What	How
Local Govt.	Land Personnel	Various levels of council meetings Mobilization of formation of cooperative groups
Central Govt.	Advice the local government	Through consultation meetings

	on the importance of the project	
Private sector		
Artisanal fishers & traders	To formulate fisheries coop societies	Through extension & advising services from local and central governments. Formulation of fishers coop societies. Management and maintenance of the fish landing facilities
NGO's	Capacity building	Mobilization

Programme 8 (Fishing Communities Development)

Stake holder	What	How
Local Govt.	Provide personnel	- Training & monitoring - Management & supervision of micro-projects
Central Govt.	Funding of projects	Training facilitation
Private sector		
Artisanal fishers	Manage the project sustainability	Self reliance
Coop groups	Mobilize & sensitise fishers	Training & monitoring
NGO's	Sensitise	Mobilization
Other donors	Financial support	Direct funding

Group 4 (Mwanza region of Lake Victoria)

Programme 3 (Lake Victoria Fisheries Sub-sector Capacity Building)

1. Programme affirmed and approved by the group as proposed in the draft
2. Recommendations
 - 2.1 Nyegezi Freshwater Fisheries Institute should collaborate with relevant institutions for building FRP boats and the technology disseminated to beneficiaries.
 - 2.2 Training of existing staffs and recruitment of other staffs
 - 2.3 Implementation schedule of Lake Victoria Fisheries Sub-sector Capacity Building Programme should be re-scheduled and start immediately in the year 2003/04 but not 2008/09 as proposed in the Draft
3. Role of stakeholders

Stake holder/Actor	What and How
Local Govt.	- Collaborate with central Govt. in planning and execution of the project - Dissemination and technology transfer through training and demonstration
Central Govt.	Ensure competent manpower through training and transfer
NGO	Assistance financially through donation / credit
Artisanal fishers	Trained and adoption of technology, fishers should purchase the equipment.
Cooperatives and groups	Fishers should be involved in design process of FRP boats and development of fishing technology
Other donors	- Financial assistance to rehabilitate small boat yards under district council in Musoma and Bukoba district - Provide financial support in developing low cost and effective fishing technology through credits and donations

Programme 4 (Fish Marketing Improvement)

1. The objectives affirmed and approved
2. Recommendations
 - 3.1 For Mkolani and Kanyama markets, management bodies should be identified.
 - 3.2 Portable water for Mkolani and Kanyama should be supplied
 - 3.3 The construction of Kirumba should start immediately
3. Role of stakeholders

Stake holder	What	How
Local Govt.	Owners & monitoring	Signing of the contract
Central Govt.	Technical support in terms of human resources	Before handing over of market by local govt. to private sector, they must fulfil legal requirements i.e. (Contract) to Cooperative and group.
Private sector	Implementers (management of the market) day to day operations	
Fishers & processors	Provide raw materials (fish products) to the material	Supply raw materials to Kanyama and Mkolani
Traders	Purchase of fish products	Purchase & sell of fish products to consumers
NGO's	Advice and financial support	

Programme 8 (Fishing Communities Development)

1. We approved the programme proposed in the draft
2. Recommendations
 - 5.1 Implementation of the programme should start early in 2003/04
 - 5.2 The development of process of fishing village model in page S-36 should include evaluation after monitoring
3. Role of stakeholders

Stake holder/Actor	What and How
Local Govt.	Provide fund, training and technical support Organizing fishing communities
Central Govt.	Provide fund, training and technical support
NGO	Assistance financially through donation / credit
Artisanal fishers	Project implementations

Programme 9 (Fisheries Co-management)

1. We are approved
2. Recommendations
 - 2.1 The project should cover all riparian districts of Lake Victoria (Tanzania) and other areas of the country.
 - 2.2 In other areas of the country, BMU should be established.
 - 2.3 The programmes should start immediately in 2003/04 and should be continuous up to year 2011/12

3. Role of stakeholders

Stake holder/Actor	What and How
Local Govt.	- Awareness creation, sensitisation, conservation - Approval of by-laws.
Central Govt.	- Advice, finance and technical support - Awareness, creating sensitisation and conservation and resource management
BMU	- Empowerment of BMU – legitimise in the Act - Implementation, management of the resources, environment, bio-diversity and conservation
Artisanal fishers	Implementation of management measures
Cooperative and groups	Compliance to management measures
NGO	Creating awareness on resource management among fishers

Group 4

Programme 9 Fisheries co- management programme. L.Victoria -Musoma and Bukoba

Objectives

- To instil basic understanding about resource management and to foster self reliant planning and implementation capabilities in fishery management
- To establish an organisational system that will enable fishers to conduct independent fishery surveillance and data collection activities.
- Comment on mentioned areas.
- Project areas should be in Musoma and Bukoba because the mentioned areas are already pilot areas for LVEMP activities and this will lead to duplication of resources.
- Stakeholder analysis

Stakeholder	What	How
Local government	Management of the L Victoria Fisheries resources	<ul style="list-style-type: none"> • Working closely with and village government • Financial support and working facilities to the BMUs • Institution of by-laws on Lake environment protection
Central government	Funding	<ul style="list-style-type: none"> • Establish micro projects for BMUs e.g. patrol boats • Conduct research on fish stocks
Private sector Artisanal fishers	Management of the fisheries resources	<ul style="list-style-type: none"> • Conservation of the fisheries resources • Institution and implementation of fisheries resources management by-laws in every fishing village
Traders	Abide by the fisheries	<ul style="list-style-type: none"> • Obtaining fish trade licence • Selling allowable size catch • Proper fish handling and processing •do.....

Processors	regulations do	Sensitise, mobilize for management
NGO	Fisheries resource management	

Group 6 Group 6 National programmes 8,10,11,12

General observation

Clear definition of terminology e.g. Master Plan is a very broad term:- it left out a number of other initiatives and programmes-LVEMP, Tanga Coastal; Zone Projects

Programme 8

Fishing communities Development

Approved

Timeframe to achieve the stipulated objectives and activities short-3 years

Objectives 4&5 are outcomes as they appear. Reframe objectives.

Fisheries technology sounds like a micro project. Capacity building does not seem to cover community These two seem like sub projects of the programme

Develop a simple logical frame work for the programme showing objective, inputs, outputs Activities and outcomes and clear benefits

Focus is on community and district Officers. This is ok.

Why involve NGO?

Improve the text language

Stakeholder	What and how
Local government	Supervision
Central government	Co-ordination
Private Artisanal fishers	Identify, design and Implement micro project as they are the owners Organise and formulate co-operatives and groups Awareness creation, facilitation and provision of expertise Financial support and expertise
NGOs	
Donors	

Programme 10 Fisheries information system improvement

General observation- use of terminology
Fishing programme 3-137

Circulation expert 3-137big document Reasons and rationale in the text need to be explained further.

GIS Suggesting foreign expert -What happens after he leaves -issues of sustainability.
Training for local person only one month suggest training to be for six months

Response-training will be one month but s/ he will understudy the expert for the rest of the time to make him/her competent in GIS operations

Review equipment as inadequate

Timeframe-review to fit with current situation e.g. marketing data.

Implement the existing initiatives in the strategic plan 2004

Ministerial approach with donor programmes include

Response-Master plan is not necessarily going to fit in with existing plans

OBJ no 3 Data processing should be from 1997 onwards

Training on data processing should be national and other data source centres

Stakeholder	What activity	How
Local government District fisheries	collection of data and transmit to central processing system(Nyegezi has no role in this project)	Supervise
Central government	Co-ordination, analysis and processing System management	Dissemination, information management
Private Artisanal fishers Commercial fishers, Fish processors and Trawlers Donor TAFIRI	Provide information Provide information, Use information from central office Financial and material support Provide information Analyse and use information	collect data , Capital and technical support Collect and analyse information

Programme 11 National Extension service provision

General observation-Does not deal with extension. The title does not match with the contents and description of the programme.

Programme should focus with the problem in the field

Suggested title based on content-Strengthening Nyegezi Fisheries Training institute.

Programme no 12 Fisheries financial support

General comment-Title does not link with programme description

Suggestion: Artisanal fisheries financial support

Criteria to select project-provide this Implementation of this should be with great care based on experience from previous programmes in Kigoma

Economics of relying on fish levy as a source of income for revolving fund

Potential of Mafia Questionable

Linkages with other initiatives on credit scheme

Timeframe-link with strategic plan and MTEF from MNRT

Programmed should be linked with Fisheries community development-

District fisheries officers have been loaded with a lot of responsibility a challenge

Stakeholder	What	How
Local Government (District fisheries)	Monitoring	
Central government (Fisheries division)	Facilitation, supervision monitoring	
Private sector Artisanal fishers NGOs	Repayment of loan Micro credit management	Training and follow ups
Other Donors	Financial(seed money) and technical support	

Group 7 (National level)

Programme 13 (National Fish Export Promotion)

Objectives (reframed to)

- (1) To lessen the dependence of export possibilities to EU by developing new markets
- (2) To define and develop the marketing routes
- (3) No changes

Contents Agreed upon

Minor correction

- (1) Financial year to read 2000/01
- (2) Objective No (2) omitted from descriptions B + C of summary paper

Role of stake holders

Stake holder/Actor	What and How
Local Govt.	<ul style="list-style-type: none"> - Ensure effort of high quality and safe fish & fishery products - Monitoring quantities / movements of dried products - Streamline the taxation regimes
Central Govt.	<ul style="list-style-type: none"> - Promote fish export through marketing research & advertisement - Issue sanitary certificates - Monitoring quality / standard of the products - Construction of labs - Streamline taxation regimes - Issue export licenses - Capacity building
Private	<ul style="list-style-type: none"> - To abide to existing fisheries legislation & guidelines - Collaboration with govt. for information on markets & pricing.

Programmes 14 (Aqua culture extension)

Objective

- (1) The production of cultured fish in the pilot region increased
- (2) Activity
- (3) Aqua culture awareness and support programmes developed & implemented

Contents Agreed upon

Minor correction

- (1) Morogoro region is not state -change the word state t region
- (2) Scientific names in brackets to be included after the common names
- (3) Check Spelling

Role of stake holders

Stake holder/Actor	What and How
Local Govt.	<ul style="list-style-type: none"> - Sensitise & support fish farmers
Central Govt.	<ul style="list-style-type: none"> - Set regulations for monitoring aqua culture activities - Monitor / control of quality and safety of aqua products - Facilitate extension services - Ensure supply of fish fingerlings to farmers
Private	<ul style="list-style-type: none"> - Sensitise fish farmers through seminars, workshops etc.

Programme 8 (Fishing Community Development)

Objectives

- (1) The level of resident participation approach in the community development improved
- (2) Activity
- (3) Improved welfare of the fishing communities through strengthening administrative functions
- (4) Appropriate technology needed to develop the economy of the fishing community/ies identified and introduced
- (5) The income of poverty level fishers increased

Contents

Corrections Eradicate Reduction (1st line)
 Additions Monitoring + Evaluation Diagram

Role of stake holders

Stake holder/Actor	What and How
Local Govt.	<ul style="list-style-type: none"> - Organize fisher communities by creating awareness - Assist grass-roots in making by-laws
Central Govt.	<ul style="list-style-type: none"> - Provide technical/Financial support to local governments - Mobilize/activate various institutions to assist the local governments in the execution of programmes - Issue directives and policies
Private, NGO's etc.	<ul style="list-style-type: none"> - Provide financial and technical support

Programme 9 (Fisheries Co-Management)

Objectives (re-framed to)

(1) The community based fisheries co-management programmes are facilitated and improved.

Contents Agreed upon

Minor corrections

(1) Insert collaborative resource management in 1st line

(2) Instead of ---lack of understanding, use inadequate knowledge

(3) Non-existent = inadequate

Role of stakeholders

Stake holder/Actor	What and How
Local community	<ul style="list-style-type: none"> - Formation and actual implementation of the activities of BMU
Local Govt.	<ul style="list-style-type: none"> - Facilitation and technical support to BMUs of any co-management group - Facilitate formation of by-laws - Co-ordination/harmonization of the co-management groups
Central Govt.	<ul style="list-style-type: none"> - Training/collaboration with local government
Private	<ul style="list-style-type: none"> - Training/by-Laws (Coop) - Financial support (taxes, membership fees)

ANNEX 9

PARTICIPANTS

	Name	Organisation and Place	
Guest Speakers			
	Mr. Killenga	Acting Permanent Secretary	MNRT
	Mr. Nanyaro	Acting Director	FD, MNRT
	Mr. Kinomoto	Acting Representative	JICA Tanzania
Head quarter, Fisheries Division, MNRT			
1	Mr. R.R. Mapunda	Assistant Director	HQ, FD, MNRT
2	Mrs. J.S. Uronu	FO	HQ, FD, MNRT
3	Mrs. Fatuma Sobu	FO	HQ, FD, MNRT
4	Mr. L..B. Mkuizu	FO	HQ, FD, MNRT
5	Mr. R. Makenya	FO	HQ, FD, MNRT
6	Mrs. R. Kullaya	FO	HQ, FD, MNRT
7	Mr. N.J. Jihulya	FO	HQ, FD, MNRT
8	Mrs. Rita Maly	FO	HQ, FD, MNRT
9	Mrs. Asha Kulumula	FO	HQ, FD, MNRT
10	Mr. M. Bulayi	FO	HQ, FD, MNRT
11	Mrs. Eronica Lyimo	FO	HQ, FD, MNRT
12	Mr. G.L. Kalikela	FO	HQ, FD, MNRT
13	Mr. Bakari Maige	FO	HQ, FD, MNRT
14	Mrs. C.A. Abdu	FO	HQ, FD, MNRT
15	Mrs. Lilian Bavu	FO	HQ, FD, MNRT
16	Mr. A.K. Mihayo	FO	HQ, FD, MNRT
17	Mrs. Sebastian	FO	HQ, FD, MNRT
18	Mr. R.B. Hoza	FO	HQ, FD, MNRT
19	Mr. Amin Abdallah	FO	HQ, FD, MNRT
20	Mr. R. Mhekela	FO	HQ, FD, MNRT
21	Mr. D. Pande	FO	HQ, FD, MNRT
Participants			
22	M.O. Lyimo	UWAWADA	DSM
23	John Shea	SADC	DSM
24	F.M.D. Ntima	Ilala Municipal	DSM
25	I. Mizunguli	DAWASA	DSM
26	J.J. Malkoba	NRO, RAS	DSM
27	H.S. Mongi	Principal Kunduchi F.I.	DSM
28	Jim Anderson	SADC	DSM
29	D.M.K. Kamamba	Antiquities Dept. MNRT	DSM
30	Addy Haider	UWAWADA	DSM
31	Rajab J Mtoro	DAWASA	DSM
32	Philip Bwathondi	Director General, TAFIRI	DSM
33	Deborah Suvugusia	SPO, JICA	DSM
34	P.R. Acharya	Embassy of the Netherlands	DSM
35	E. Tammo	Wildlife Division, MNRT	DSM
36	Mwasabwite	Ilala Municipal	DSM
37	James Yonazi	FAO	DSM
38	J.A. Lilungulu	DFO	Bagamoyo
39	A. Tamimu	Fisher	Bagamoyo
40	J.M. Kayungi	DFO	Bukoba

41	L. Mongo	DFO	Geita, Mwanza
42	Euzeus Kibogo	Fisher	Kagera
43	A.M. Mwasota	DFO	Kyela
44	M.K.L. Mlay	TAFIRI	Kyela
45	Seif A. Waziri	Fisher	Kyela
46	S.S. Ngaweje	DFO	Lindi
47	Hussein Twende	Fisher	Lindi
48	E.F. Nganyanyuka	SAFsO I	Lindi
49	I. Mtani	DFO	Mafia
50	Omari Juma	Fisher	Mafia
51	Mhunzi Abdallah	Fisher	Mafia
52	Jason Rubens	WWF	Mafia
53	Egidi S.Kilosa	SFO	Mara
54	Y.E.S. Mndeme	Principal Mbegani	Mbegani
55	Kajitanus Osewe	DFO	Morogoro
56	M.L.K. Diyamett	teacher	Moshi
57	A.J.M. Makaja	SAFsO I	Msoma
58	Msumba J.G.	DFO	Mtwara
59	Mwenda	Fisher	Mtwara
60	Hosea Gonza Mbilinyi	Zonal Officer	Mwanza
61	Angelous Mahatane	RFO, LVEMP (WB)	Mwanza
62	Mongi H.J.M.	NRO, RAS	Mwanza
63	J. Makene	Principal, Nyegezi FTI	Mwanza
64	Kauswa Phineas	Fisher	Mwanza
65	Nyaruga Msafiri	Fisher	Mwanza
66	Clement L. Kalonga	TAFIRI	Tabora
67	Shadrack W. Yomba	DFO	Tabora
68	Iddi Lugilimba	Fisher	Tabora
69	Kaimu Abdi	Fisher	Tanga
70	S. Makoloweka	Principal FO, RAS	Tanga
71	Evaristo Kalolo	Fisher	Tanga
72	Eric Verheij	TCZCDP	Tanga
73	N.S.K. Kisheru	RAS	Tanga
74	A.N. Madundo	DFO	Tarime, Musoma
JICA			
75	Takayuki Nishizaki	JICA Advisory Team	JICA, HQ
76	Sachio Yamamoto	JICA Study Team	SSC
77	Masashi Sato	JICA Study Team	OAFIC
78	Wim Scheffers	JICA Study Team	SSC
79	Shigeru Iwasaki	JICA Study Team	SSC
80	Bernadette Kyanya	JICA Study Team	OAFIC
81	Yuki Niimura	JICA Study Team	SSC

ANNEX 10

Agenda for the Seminar

18th April 2002

Day 1

Time	Event	Person in charge
08:00-08:30 am	Arrival of Participants	N.J. Jihulya
08:30-09:00 am	Registration and introduction	N.J. Jihulya
09:00-09:10 am	Welcome Statement	Director of Fisheries Mr. G.F. Nanyaro
09:10-09:15 am	Remarks by Resident Representative	Resident Representative - JICA Mr. Kinomoto
09:15-09:30 am	Opening speech	Mr. T.F. Killenga
09:30-10:15 am	Tea break	
10:15-10:30 am	Presentation	UWAWADA
10:30-11:30 am	Presentation of Results from Master Plan Study	Mr. Yamamoto
11:30-12:00 am	Explanation of Seminar	Ms. Kyanya
12:00-12:30 pm	Presentation by Counterpart	Mr. Mapunda
12:30-14:00 pm	Lunch	
14:00-15:00 pm	Presentation by Team Member	Mr. Sato
15:00-15:30 pm	Presentation by Team Member	Mr. Scheffers
15:30-16:00 pm	Tea break	
16:00-17:00 pm	Questions and answers	Ms. Kyanya
17:00-17:30 pm	End of the Day 1	Ms. Kyanya
19:00-21:00 pm	Reception	JICA Study Team

19th April 2002

Day 2

08:00-09:00 am	Arrival of participants	
09:00-09:30 am	Grouping	Ms. Kyanya
09:30-11:00 am	Group discussion	Ms. Kyanya
11:00-11:30 am	Tea break	
11:30-12:30 am	Group discussion	Ms. Kyanya
12:30-14:00 pm	Lunch	
14:00-15:30 pm	Presentation of group	Ms. Kyanya
15:30-16:00 pm	Tea break	
16:00-17:00 pm	Discussion	Ms. Kyanya
17:00-17:15 pm	Closing Speech 1	Mr. Yamamoto/ JICA Mr. Nishizaki
17:15-17:30 pm	Closing Speech 2	Mr. G.F. Nanyaro
17:30- pm	Payment	

ANNEX 11

Speech by UWAWADA

AN AGENDA ON THE ROLE OF SMALL SCALE FISHERMEN (UWAWADA) AND THEIR EXPECTATIONS FROM THE MASTER PLAN ON THE DEVELOPMENT OF FISHERIES IN TANZANIA

Introduction:

Besides analysing the role of UWAWADA, we also feel obliged to reveal the expectations of small-scale fishermen from the Master Plan. We have decided to do so with a view to enlighten sensitive issues affecting small-scale fishermen so that concerned parties can institute appropriate measures.

First Section:

UWAWADA is a Non Government Organization of small scale fishermen formed under the Societies Ordinance No. 8061 on 13th March, 1995 with the primary objective of improving the economic and social welfare of small scale fishermen.

Due to the consistent technical and professional advises UWAWADA has been receiving from some experts, the UWAWADA Executive Committee had to review its previous objectives and rectify its constitution.

One of its current objectives is to form a Credit and Savings Scheme (SACCOS) in order to enable members and other stakeholders to indicate the culture of inculcate saving and how to run, operate and manage loans. This will empower members economically and will help to reduce poverty. We have put more emphasis on this issue based on the realization of the real state of fishermen lives. They have the habit of spending all their incomes without saving.

The Cooperative known as “UWAWADA SACCOS” has 53 members and is now in its final stage of registration. We hope to start issuing loans to members in early May, 2002 immediately after the new Magogoni complex fish market becomes operational.

It’s our objective to further develop, consolidate UWAWADA-SACCOS and make a it cooperative model in fisheries in Dar es Salaam City and elsewhere.

Second Section:

Expectation of the small fishermen from the Master Plan

The UWAWADA leadership, representing all other small scale fishermen in the country and especially those along the coast, expects the following from the Master Plan Study on Fisheries Development in Tanzania:

- (a) To participate in policy formulation and administration
- (b) Participate in security matters
- (c) To be empowered economically

In general, UWAWADA is of the opinion that the Master Plan should be accompanied by various laid down strategies with numerous objectives leading to the final formation of “National Fisheries Development Strategy”. Our colleagues in the Ministry of Agriculture have developed “Agricultural Sector Development Strategy” which aims at dealing with constraints hindering the agricultural sector in the country, reducing poverty in rural areas and developing the national economy. Besides, the agricultural development strategy also aims at dealing with production issues, weakness on monitoring, farmers incapacities, poor

infrastructure, markets and loan procurement etc. In view of the fact that the two sectors are identical, there are many issues which we can learn from the Agricultural Sector Development Strategy. Our contribution to this workshop is to reveal issues which we expect will be incorporated into the Master Plan on Fisheries Development.

Participation in Policy Formulation and Administration

We would like to participate in the formulation of policies, disseminating information and oversee “participatory poverty reduction monitoring initiative”. We would like to see that the policies improve the lives of small-scale fishermen.

We would like to pinpoint here some shortfalls in the current policies and administration as follows:

- The National Fisheries Policy and its strategies do not explain clearly the efforts on how to eradicate poverty of small-scale fishermen.
- The new fisheries law for managing fisheries resources do not take into account the importance of small fishers, the law favours industrial fishermen particularly the foreigners. It suppresses small-scale fishermen.
- The division of responsibilities for managing fisheries activities between the central and local governments is unclear. Small-scale fishermen fail to differentiate the responsibilities of each institution. Under such conditions, we recommend that the roles of the two governments be reviewed, defined and clearly stated.
- Lack of free flow of important information fisheries activities prevents fisheries activities prevents fishermen from understanding issues which affect their livelihood.
- The Fisheries Division and its institutions concentrate only on actual fishing activities with disregard to the real situation of the small fishers. As a result, the fishers view the department and its institutions as organs for collecting revenue, issuing directives and controlling fishing effort. There is no assistance rendered to small-scale fishermen to enable them overcome their problems.
- Small scale fishermen are not defended when it comes to problems which affect their livelihood. For example, the issue of ordering fishers to remove their fishing vessels from the current parking beach along Magogoni sea frontage to Mnazini beach by the Tanzania Harbours Authority. The fishers haven’t been defended by any institution – including the department of fisheries. These has frustrated small scale fishermen.

Security Systems

Small-scale fishermen are often subjected to various hazards because of the nature of their work and lack of proper fishing equipments. Under such circumstances, they need to be helped to form organizations such as UWAWADA of Dar es Salaam. Such organizations need to be formed in other regions e.g. Tanga, Lindi, Coast and Mtwara. Given support, UWAWADA can extend its activities to these other regions.

Another problem faced by small-scale fishermen is AIDS. This is because their lifestyle is conducive to the spread of the disease in their communities. Fishermen need to be educated about this problem particularly during this period.

Economic Empowerment

As stated early, small-scale fishermen are underdeveloped due to lack of training and lack of capital for purchasing modern fishing gears and equipments. This vicious circle can only be overcome through external assistance as because fishermen cannot solve the problem by themselves. We expect that the Master Plan will take into serious account the development of small-scale fishermen.

Women

Women are in a more difficult situation than men. If empowered, they can contribute significantly to economic development of the Nation.

Youths

Another group which faces difficulties in the fishing communities is the youths. We expect that the Master Plan will come up with strategies to empower them so that they too participate actively in fishing activities and thus improve their standard of living.