

## 2. Methodologies of the 4-beaches and stakeholder workshops

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### 2.1. The 4-beaches survey

#### 2.1.1. Introduction

##### *Background to the development of the 4-beaches Survey*

The four beaches study was based on Participatory Rural Appraisals (PRAs) are qualitative methodologies revolving around a series of exercises, which provide groups of respondents with various exercises designed to generate discussion and ideas, without cooping these in a highly technical format. Besides being appropriate to this particular study, the development of a PRA presence in the participating institutes contributed to institutional strengthening.

In an effort to try and capture some of the dynamism expected of community institutions, the LVFRP embarked on a Participatory Rural Appraisal training program, the first workshop of which was held in Mbita, Kenya, in March 2000. As a result of this workshop, PRA base-line data collection was held at Ihale Beach in April, 2000, at Lwalalo Beach in Uganda in June, 2000, at Obenge Beach in Kenya in June 2000, and at Nkombe Beach in Uganda in September 2000. These PRAs served to define the background characteristics of the communities involved including such data as the communities' assessment of their wealth, the resources on which they relied, fisheries-related issues, the organisations present on the landing sites and the various hierarchies perceived to govern them. The primary reason used to select these landing sites was their proximity to the research institutes involved and that access to them was perennially accessible. These factors were paramount in the selection process because of the need to be able to monitor the landing sites on an at least a monthly basis without interruption until September 2001.

In February 2000 at the LVFO, and subsequently, in March, 2000, the LVFRP met with the Directors and Commissioners of Fisheries from Kenya, Uganda and Tanzania, and asked for fisheries regulations at the landing sites to be either lifted or diluted. At neither meeting were any firm conclusions obtained, and in June 2000, the LVFRP met with the Directors of Fisheries in Kenya and Tanzania.

In Kenya, the Director expressed considerable interest in the study, and offered to assist in any way that she could. As a result, the Kenyan PRA team returned to Obenge beach and carried out a second study aimed at examining in considerably more detail the organisations and institutions present at the landing. On this occasion, the team pursued the following objectives:

- (a) to examine how the community, if left on its own, would handle offences that currently involve outside intervention. It focussed on offences such as theft, fighting, damaging someone else's nets, prostitution and the misuse of beach money or power.
- (b) How the community, left on its own, would handle fisheries-related problems previously identified by the community. The team sought to understand how the community would deal with offences that were not being enforced; to identify the reasons why these were not enforced; to understand how the community understood its regulatory responsibilities, and which regulations it would choose to enforce; how the community might organise itself to tackle issues of law enforcement; what resources it would need to accomplish these; and, finally, to determine whether or not the community would be able to raise these resources internally.
- (c) Suggest issues for focus in the co-management study at Obenge Beach.

The Director of Fisheries in Tanzania had certain difficulties with the 4-beaches proposal. He suggested that, instead, the LVFRP could monitor the progress of the newly formed Beach Management Units (BMUs). Given that this did not seem to substantially violate the objectives of the 4-beaches survey (and in some cases strongly support them), the LVFRP team accepted this suggestion. It was therefore decided that a second landing site be identified for inclusion in the survey so that monitoring could compare and contrast the activities of two BMUs. This second landing site has been identified as Mwasonge Beach.

In August, 2000, the LVFRP met with the Commissioner of Fisheries in Uganda, who suggested that the 4-beaches survey in Uganda be couched within recent, new, trends within the restructuring of fisheries management in Uganda. In particular, The Commissioner suggested that the 3-beaches study here assist the community with the establishment of a series of 'by-laws', which it would have a legal right to enact under the Local Governments Act of 1997. Under The Act, the community can enact any by-law it sees fit provided this does not violate any existing national, Ugandan law. This exciting proposition was followed by the first PRA at Nkombe, carried out in September 2000. The next steps in this process comprise a major part of the content of this report.

#### *Role of participatory monitoring in fisheries co-management*

Monitoring environmental trends has traditionally played an important role in forewarning of environmental change and assisting natural resource managers to design appropriate interventions. In addition to the ecological monitoring of biophysical phenomena (e.g. fish stocks), natural resource managers also monitor the performance of interventions (e.g. institutions or management measures) designed to guide the exploitation of different natural resources. Both performance and ecological monitoring play an important role in providing the information which resource managers need to adjust the regulations which they recommend in order to achieve the optimal exploitation of the resource (e.g. fish) which they manage.

Fish managers, however, are not the only group which has an interest in the exploitation of fish stocks. Fishing communities, fish processors and national governments as well as fisheries managers all have an interest or stake in how a fishery is used and managed. Furthermore they may have a different opinion on what the objective of fisheries management should be. For example, fishermen often consider that the optimal exploitation of the fishery is when their earnings are stabilised, whereas government may consider that national income from fish exports should be maximised and fisheries managers often consider that the optimal exploitation of a fishery is one where catches are strictly limited. Fisheries co-management attempts to combine the interests of these stakeholders. Underlying fisheries co-management is the belief that if each of these stakeholders are included in the decision making process which fisheries managers use, the outcomes of such decisions, e.g. new fisheries regulations, will be (more) acceptable to these groups. The logic of participatory monitoring follows from this. Co-management decisions (just as any other management decisions) need to be based on the most recent information which is available about the fishery. This information is provided by both ecological monitoring of the fish stocks and performance monitoring of fisheries management measures.

Underlying participatory monitoring is the belief that if the different stakeholders in the fishery participate in collecting and analysing the information on which management decisions are made, then they will have more confidence in the decisions that are made on the basis of this information and will have an interest in ensuring that the co-management objectives are achieved.

In this chapter, the methods employed at each of the landing sites involved in the 4-beaches survey are examined. The process followed for Nkombe is explained in considerable detail so as to provide a flavour of the steps pursued and how these were planned, executed and learned from. Similar steps were followed for Kenya and Tanzania, and are not explored in as much detail.

### 2.1.2. Nkombe

#### *Synopsis of key lessons learned from the Nkombe PRA in early September*

The overall objectives with the PRA at Nkombe were:

- (a) to identify and understand Nkombe's community-based organisations and institutions which have a role in the lake's fishery.
- (b) To consider the key issues which arise from this study for the involvement of communities and community-based organisations and/or institutions such as those at Nkombe Beach, in the co-management of Lake Victoria's fishery.

The specific objectives were:

- (a) To investigate the utilisation of natural resources in Nkombe.
- (b) To identify the major socio-economic issues in the community.
- (c) To investigate the fishery status and trends.
- (d) To find out the existing organisations.
- (e) To identify the socio-cultural factors relevant to fisheries management.
- (f) To find out the existing laws, rules and regulations.

Based on the tasks and issues agreed upon by the team at the beginning of the participatory exercise, the team generated information and produced a report which covered the following areas:

- (a) background information on Nkombe beach, including a historical timeline, infrastructure and communication systems.
- (b) Gender roles, specifying the organisations for facilitating the roles.
- (c) Wealth ranking, based on definitions of the three wealth classes defined by the community.
- (d) Resources at the Nkombe landing, illustrated by a process chart, resource map, seasonal calendars and a timeline for gear types.
- (e) Fishing rules, regulations and administration at Nkombe landing, distinguishing between government regulations and bye-laws, administrative structure and a matrix of offences and punishments and a Venn diagram.

Key lessons learned from the exercise are summarised as follows:

- (a) There is a strong sense of organisation within the fisher community at Nkombe.
- (b) They are aware of government regulations and, in addition, they would like to have in place their own bye-laws relevant to their desired ways of living.
- (c) Although they are also endowed with farming resources, fishing is still regarded as a major source of livelihood to the community.

- (d) There is a wealth of information with the community that is largely unavailable to information users.
- (e) The community is basically willing to share this information with researchers and has received the findings of the research with interest.
- (f) The participatory process, however, is a time-cost to the community and the researchers need to be sensitive to this.
- (g) Furthermore, the participatory process is fragile and could lead to suspicions that may be created by the different tools.
- (h) The community needs to be prepared for the exercise of participatory information generation by explaining the goals of the exercise carefully and the relevance of each tool used.
- (i) Owing to poverty within the communities, researchers need to anticipate requests for material support during participatory assessment and to prepare to respond to them.

### *The planning process*

During a PRA training workshop held in Jinja from the 18 September – 27 September 2000, the SEDAWOG team presented preliminary results of PRA surveys carried out at Obenge, Nkombe and Ihale. To help in the monitoring process, the objectives of the PRAs were discussed, from which three key objectives were selected to help in monitoring. The selection process was assessed in terms of how positively or negatively these monitoring strategies might affect the target communities. Four groups were formed to discuss the different key objectives so as to try and eliminate biases. Each group was named after a colour, and each had a protocol officer to assist in translation. The protocol officers were also supposed to present to the communities the key objectives of the monitoring system. The indicators identified to form the centre of this process also helped to determine which questions would be posed when the team went to Nkombe. These indicators were the couched in terms of the various resources and activities that the three teams thought that they would have carry out or obtain if they were to be viable as monitoring indicators. The steps the teams went through to arrive at these conclusions, the indicators involved and the resources needed are presented in Table 1 below. Tables 2 – 3 provide the results of this exercise.

### *Initiating participatory monitoring at Nkombe*

The PRA team arrived in three batches, two in vehicles and one in a boat. They were received by landing committee members and the community as a whole which was, at the time, holding a meeting. The team was therefore asked to wait in the village hall until the meeting was over, after which the landing committee organised another meeting for them.

Mercy Kyangwa, acting as both MC and interpreter, introduced the team members and then explained to the community what the objectives of the trip were. He explained that the visit was part of a training exercise in which the team was trying to derive indicators amenable to monitoring. He explained that the PRA team was to be split up into groups, and that each group would be seeking information about specific things from different categories of community members, such as the LMC, a women's group and a group of fishers.

Before the interviews started, the MC was asked a question about the previous PRA conducted at the beach in which a village map was produced. This had lead to a lot of concerns within the community in which some members speculated that the map might be used to seize community land. The MC reassured the community that this was not amongst the PRA team's intentions. The exercise, he explained, was supposed to pave the way to a new management system for the fishery called 'co-management' which involves a high degree of community participation.

On day two, the interviews continued, but were suddenly stopped when one of the groups reported that they were having serious problems with their respondents. A meeting was then called and the Beach Leader (the 'Gabunga') was asked to join it. At this meeting, it was agreed that:

| M & E QUESTIONS OR PROJECT OBJECTIVES (GOAL, PURPOSE OUTPUTS, ACTIVITIES) | INDICATORS  | DATA COLLECTION  |                      |  |  |   |                       | DATA ANALYSIS AND USE |  |  |  |
|---|---|--|----------------------|--|--|---|-----------------------|-----------------------|--|--|--|
|   |   | SOURCES OF INFORMATION   | BASELINE DATA NEEDED | WHO IS INVOLVED  | TOOLS AND METHODS  | FREQUENCY   | ADDITIONAL RESOURCES  |                       |  |  |  |
| Government regulations (short-comings and successes).                     | Gear types used.<br>No. of boats licensed.<br>S. economic status.   | Fishermen<br>LMC, Fisheries Dept<br>3 knowledgeable key informants   | Refer to             | Fishermen<br>LMC, F/Dept<br>Key informants   | Seasonal calendar<br>-Matrix, FGD<br>-Seasonal Calendar<br>-Wealth ranking | Monthly<br>Quarterly                                      | Paper & pencils chalk |                       |  |  |  |
| Existing Bye-laws (short-comings and successes)                           | No. of conflicts, theft and outcomes of such cases.<br>Registration and identification of immigrants.                       | LMC, Fishers<br>Fishers, LC, LMC<br>LMC, LC  |                      | LMC, Fishers.<br>Fishers, LC,<br>LMC<br>LMC, LC  | Matrix<br>FGD.<br>Calendar.<br>Seasonal calendar                           | Monthly<br>Monthly<br>Monthly                             | "                     |                       |  |  |  |
| Institutions and organisations involved in fishery related activities     | List of institutions and organisations, leadership, membership, funding, sources, amounts and utilisation, no. of conflicts | LMC, LC<br>LMC, LC,<br>women's groups, institutions involved, organisations<br>LMC, LC,<br>organisations representatives |                      | LMC, LC.<br>LMC, LC,<br>women's groups.<br>Institutions involved<br>LMC, LC<br>Organisations representatives | SSI<br>Diagram<br>SSI<br>SSI<br>FGD<br>Seasonal Calendar<br>SSI,<br>Matrix | Quarterly<br>Quarterly<br>Quarterly<br>Monthly<br>Monthly | "                     |                       |  |  |  |

Table 1: PM &amp; E Planning work sheet

| QUESTIONS   | INDICATORS  | SOURCE OF INFORMATION  | BASELINE DATA NEEDED            | WHO IS INVOLVED                                     | TOOLS AND METHODS  | RESOURCES                   |
|---|---|--|---------------------------------|---|--|-----------------------------|
| (a) What are the successes and short comings of existing by-laws?                   | (a) Measure no. of conflicts in the community.<br>(b) No. of thefts (property) and owe comes of such cases<br>(c) Registration and identification of immigrants fishers | (a) <i>Gabunga</i> Fisheries staff (separate interview)<br>(c) Secretary       |                                 | (a) <i>Gabunga</i> Fisheries Staff<br>(b) Secretary | (a) Matrix<br>(b) Seasonal calendar<br>(c) Frequency-monthly                                   | Pencils, markers and stones |
| (b) What is the opinion of the wider community about by-laws?                       | (a) No. of Amendments   | Prominent fishers, women's groups.   | No baseline data                | (a) Women's groups and prominent fishers            | Focus group Discussion with the two groups<br><br>Frequency monthly                            | Note books and pens         |
| (c) What institutions and organisations involved in the fishery related activities? | (a) List of Institutions at the beach<br>(b) Membership<br>(c) Leadership<br>(d) Funding:- Sources, amounts Utilization<br>(e) No of conflicts                          | (a) Mixture of people.<br>(b) Prominent fishers.<br>(c) Leaders.<br>(d) Youth. | Fig. 13<br>Fig. 12<br>of report | (a) Prominent fishers<br>(b) Leaders<br>(c) Youth   | (a) SSI<br>(b) Venn-diagram<br>(c) Flow chart<br>(d) Process chart (monthly)<br>(e) Flow chart | Note books and pencils      |

Table 2: Questions, indicators, information sources, needed baseline data, individuals involved, tools to be used and resources required for the PM&E at Nkombe, Uganda

| DATA COLLECTION   |   |                       |                      |                                |   |   |                                       |
|---|---|-----------------------|----------------------|--------------------------------|---|---|---------------------------------------|
| OBJECTIVES  | INDICATORS  | Source of information | Baseline date Needed | Who is involved                | Tools & Methods   | Frequency   | Additional Resources                  |
| (a) What are the successes and shortcomings of the govt. regulations? | Gear types use.                                   | FD<br>Beach records   | Report on Nkombe     | Beach Leader<br>Fishers<br>FDO | Matrix<br>SSI<br>Seasonal calendar<br>H. Time line                        |   |                                       |
|   | No. of boats licensed.                            | FD<br>Beach records   |                      | FDO<br>Beach Leader<br>Fishers | SSI<br>Seasonal calendar<br>Time line                                     | ¼ year<br>Monthly<br>Monthly<br>A. b. A. c                              | Stones,<br>paper,<br>chalk,<br>stick. |
|   | Socio-economic status of the comm.                |                       | Report on Nkombe     | Fishers                        | Wealth ranking P<br>Chart/matrix<br>Time line<br>Seasonal calendar<br>SSI | Beginning & End<br>A. b. & A. c.<br>A. b. & A. e.<br>Monthly<br>Monthly | Stones,<br>paper,<br>chalk.           |
| (b) Successes and shortcomings of existing bye-laws?                  | No. of thefts.                                    | Beach records         | Report on Nkombe     | Beach Leader<br>Fishers        | Matrix.<br>SSI.<br>Seasonal calendar                                      | ¼ year<br>Monthly<br>Monthly  | Stones,<br>paper,<br>chalk,<br>stick. |
|   | Regulation and identification of migrant fishery. | Beach records         |                      | Beach Leader                   | SSI<br>Seasonal calendar  | Monthly<br>Monthly  | Chalk,<br>paper.                      |
| (c) Opinion of the comm. About the bye-laws?                          | Opinions on bye-laws.                             |                       |                      | Fishers                        | Matrix<br>SSI   | A b & A. c<br>¼ year  | Stones,<br>paper<br>chalk/stick       |

Table 3: Objectives, indicators and data collection requirements needed for the PM&E at Nkombe, Uganda

- (a) a group of representatives should come to the Fisheries Resources Research Institute in Jinja the following day to see for themselves the working environment of the team, and to better understand the research team's objectives.
- (b) That the research team would return to Nkombe to meet with the community as a whole later in the week.

*The Nkombe visit to FIRRI*

During the monitoring field trip to Nkombe, the community and the PRA team agreed that it was important to hold a workshop during which community representatives and the team could exchange views and better explain their team's objectives. The Nkombe beach representatives were very late arriving at FIRRI because the fishers amongst them had to sell their fish, some had to attend to their fields and others had to rearrange their plans for the day.

After the Nkombe beach *Gabungga* had made a brief presentation, a discussion on fisheries management problems was introduced which was aimed at identifying the core problems of the Nkombe community. The elder representatives started the discussion by saying that, in their youth, there were few fishers, few nets and plenty of fish, now there are lots of fishers, lots of boats, lots of nets and destructive fishing gear. This discussion led to the identification of key problems, a pledge to cooperate in order to overcome these problems and also the identification of indicators for monitoring by both partners. It was also agreed to hold a village meeting a few days later, during which cooperation would further be strengthened, the indicators explained to the community, and discussions held on the possible formation of a monitoring committee at the landing.

The core problems identified by the community were as follows:

- (a) theft of fishing gear.
- (b) High prices of recommended fishing gear.
- (c) Poverty.
- (d) High licence fees.
- (e) Small fish kills.
- (f) Sporadic and harsh punishment for the use of illegal gear.
- (g) Too many fishers.

It was agreed that the following indicators would be monitored:

By FIRRI:

Gear types used.  
 No. of boats licensed.  
 Socio-economic status of fisheries.  
 Community.  
 Measure of theft and outcomes of such cases  
 Registration and identification of immigrant fishers  
 Number of amendments.  
 List of institutions at the beach.

By the community:

Community report verbal/written.  
 Fish catches – Quantity/size/kgs.  
 Different organ working together.  
 Registration and identification of immigrants.  
 Anything new

Following the Nkombe visit, the FIRRI team was able to refine their monitoring plan, which appears in Table 4.



| M & E Questions or Project Objectives (goal, purpose, outputs, activities)                                      | DATA COLLECTION  |                       |                           |                          |                              | DATA ANALYSIS AND USE |                      |                          |  |  |   |  |
|---|--|-----------------------|---------------------------|--------------------------|------------------------------|-----------------------|----------------------|--------------------------|--|--|---|--|
|   | Indicators   | Source of Information | Baseline Data Needed      | Who will record          | Tools & methods              | Frequency             | Additional Resources | Commonly                 | Will the information be collected at FIRRI or at Nkombe? | How will information answer  | How will the information be analysed  | How often should information be analysed |
| What are the successes and short-comings of government regulations of fisheries resource being used sustainably | Gear Types   |                       | Refer to Nkombe Report    | Community and FIRRI      | Seasonal calendar SSI        | Quarterly             | Pens, books and etc  | Both                     | Both   | Mdt question indicate compliance with regulations                            | Seasonal Calendar FGD, SSI  | End of Year                              |
|   | No. of boats licensed                                    | Record Books          |                           | Community and FIRRI      | Seasonal calendar SSI        | Monthly               | "                    | Both                     | Both   | Mdt question indicate compliance with regulations                            | FIRRI draw/use seasonal calendar diagram  | Once a year                              |
|   | S.E. status of the fishing community                     | Community             |                           | FIRRI                    | W/ranking                    | Twice a year          | "                    | Nkombe                   | FIRRI  | Assess community livelihood is deteriorating of improving                    | FIRRI will use w/Ranking tool to the communities welfare and will ask Nkombe for their opinions | Twice a year                             |
| Successes and short comings of existing byelaws   | Fish catches quantity/ sizes in kgs Fisheries Statistics | Community             | Fisheries Depart. Gabunga | Both FIRRI and community | Seasonal calendar            | Monthly               | "                    | Nkombe                   | Both   | Help us understand whether the Fisheries Research are being used sustainably | Use of seasonal calendar for focus group discussion   | Monthly                                  |
|   | Measure no. of conflicts in the community                | Community Records     |                           | Both FIRRI and Community | Seasonal Calendar            | Monthly               | "                    | Both FIRRI and Community | Both   | Indicate compliance with existing byelaws (strong byelaws)                   | Use of seasonal calendar through FGD  | Monthly                                  |
|   | No. of gear theft and outcomes of such cases             | Community Records     |                           | Both                     | Matrix Seasonal Calendar SSI | Quarterly             | "                    | Both                     | Both   | Strength of byelaws  | Use of seasonal calendar or matrix SSI and FGD to indicate eradication reduction of theft cases | Quarterly basis                          |

|  |   |                       |                     |  |                            |           |   |              |       |   |   |              |
|--|---|-----------------------|---------------------|--|----------------------------|-----------|---|--------------|-------|---|---|--------------|
|  | Registration and identification of immigrants fishers | Community Records     | LMC                 | Both FIRRI & LMC (Land Management Committee) | Seasonal Calendar SSI      | Yearly    | “ | Nkombe       | Both  | Indicate permanence of the beach: stability of the fishery, positive development of Nkombe beach      | FIRRI will teach the community to use seasonal calendar                       | Yearly       |
|  | Opinion of the wider community about byelaws          | Community             |                     | FIRRI  | SSI, FGD                   | Quarterly | “ | Nkombe       | FIRRI | Help us understand whether the community participated in the formation of byelaws.. No. of amendments | FGD on the findings of community reports                                      | Quarterly    |
| What institutions and organisations involved in fishery related activities and how will they work together | List of institutions at the beach                     | LMC, LC Organizations | Refer Nkombe Report | FIRRI LMC                                    | SSI Venn diagram           | Quarterly | “ | Nkombe Beach | Both  | Positive development of organizations   | SSI, venn diagram to show increase or decrease in organisation. Relationships | Quarterly    |
|  | Membership  | Groups involved       |                     | Both   | SSI, FGD                   | Quarterly | “ | Both         | Both  | Indicate compliance with group byelaws  | SSI and FGD   | Quarterly    |
|  | Funding: sources and utilization                      | Community Report      |                     | Both   | SSI, FGD                   | Quarterly | “ | Nkombe       | Both  |   | Seasonal calendar SSI and focus groups discussion                             | Twice a year |
|  | Number of conflicts                                   | Community Report      |                     | Both   | SSI, FGD Seasonal Calendar | Monthly   | “ | Nkombe       | Both  | Indicate how well they work together e.g. few   | Seasonal calendar FGD, SSI  | Monthly      |

Table 4: Refined monitoring plan for Nkombe

### *Community feedback*

When the team returned to Nkombe, a meeting was held with some 100 people in the shade of a Mango tree.

Key points made by the LC secretary:

- (a) the Nkombe community should cooperate with the four beaches study.
- (b) The team was welcome.
- (c) Those from Nkombe who had visited FIRRI had learned a lot and had seen that our interests were in fish and the lake.
- (d) The team's visits to Jinja were not to buy land but to learn.

In addition to these points, the different members of the Nkombe delegation to FIRRI emphasised the following points:

- (a) the community should be calm, the team were not bad people.
- (b) The team's intention is to carry out research over long time.
- (c) This research will benefit Nkombe in the long-term.
- (d) The community had not been bought.
- (e) Women were represented in the Nkombe delegation to FIRRI.
- (f) Young men were represented in the Nkombe delegation to FIRRI.
- (g) Old men were represented in the Nkombe delegation to FIRRI.
- (h) The map drawn during the first visit to Nkombe was simply for the team to learn their way around the community.
- (i) Other members of the community would like to visit FIRRI.

Key points which team members made:

- (a) the four beaches study involved other beaches in Tanzania and Kenya.
- (b) FIRRI staff would like to continue visiting the community.
- (c) Following discussions about the problems facing fishers in Nkombe, several indicators were agreed at the workshop on Monday: Fish catches (quantity, sizes/kgs); a monthly report on any new developments in the community; good working relationships between the different organisations working in the fishery; registration and identification of fisher (migrants).
- (d) Nkombe was chosen for the four beaches study because of the mixed livelihoods of the community, its road and water accessibility, its mixed fisheries (i.e. Tilapia and Nile Perch).

Other issues raised by the community during the meeting:

- (a) the prevalence of illegal gear useage by all sections of the fishing community.
- (b) Corruption of fishing regulations enforcement.
- (c) Bribery.
- (d) Land grabbing.
- (e) Rumour mongering by certain individuals in Nkombe.

The meeting agreed that:

- (a) Nkombe would cooperate with the four beaches study
- (b) There would be visits between FIRRI and Nkombe in both directions
- (c) The FIRRI team were not 'land grabbers'
- (d) The FIRRI team had not bribed the Nkombe delegation at the workshop on Monday.

*Lessons learned*

When the PRA team went for the monitoring training at Nkombe, some of the members in the community became suspicious and started to spread rumours on the second day of the team's visit. The team also encountered additional problems:

- (a) the LMC secretary was unwilling to talk about the beach's boat registration records.
- (b) There were discrepancies in information obtained on conflicts.
- (c) There was continued suspicion about land grabbing.
- (d) The community felt that information was just being taken from them without them benefiting in any way.
- (e) The assistant Fisheries Officer might have felt threatened by our interviews on boat registration.
- (f) The PRA team was too big to visit the beach as it had never been researched before.
- (g) The community's perceptions on fisheries management were very different from those of the team – the community claimed that it had no fisheries management problems.
- (h) Questions used on this visit that were repeated from the team's first visit may have caused worries amongst community members.
- (i) The use of the term 'illegal' may also have caused worries on a landing site characterised by its use of illegal gear. For example, the beach had ten registered boats out of which seven were boat seiners and one used the 'sekeseke' fishing technique, both of which are illegal.

*What could have been done differently*

After these problems had been encountered we had a discussion on how we were to solve the issues. From these we learnt that we had to take a different strategies to penetrate to the community.

- (a) We realised that we should really have approached the community through the LC2 to start with, and subsequently the LC1.
- (b) The PRA should have addressed less sensitive questions at its start, and then, only later, moved on to more controversial topics ('sensitive sequencing').
- (c) We needed to adequately explain to the community the goals of our study.
- (d) If we had camped at the village, we may have been able to reduce the community's suspiciousness.
- (e) We should have used the questionnaire from the co-management survey on this community, which would have helped them to better understand what 'co-management' meant.
- (f) The community could be helped to see the problems within the fishery by being briefed about the problems faced by other fishing communities around the lake.

A one day tour was planned and the representatives from the fishing community were invited to FIRRI so as to enhance our relationship with the community and built trust. After the workshop we learnt that:

- (a) a good relationship with the community will improve the quality and quantity of information.
- (b) The community should have been told what they were to expect when they visited FIRRI.
- (c) All the groups involved in the 3-beaches study must be adequately informed of the survey's objectives, because knowledge is power.
- (d) Little things can be done to enhance the relationship with the communities.
- (e) Providing the visiting delegation with writing materials may have helped to make them feel at one with us.

### *Key questions developed*

The key questions considered by the FIRRI team following consultation with the community at Nkombe beach were as follows:

- (a) what are the most important lessons which have been learned from the community at Nkombe?
- (b) Does the Nkombe community share our concerns for the future of the lake's fisheries?
- (c) How successful has the Landing Management Committee (LMC) been in operating fisheries regulations in Nkombe?
- (d) What is the potential of the LMC as a partner in the co-management of the lake's fisheries?
- (e) What problems will the LMC face as a partner in the co-management of the lake's fisheries?
- (f) What will be necessary for co-management to progress at Nkombe?

#### 2.1.3. Obenge

Obenge is the Kenyan candidate beach in the 4-beaches study. The first PRA was done at Obenge on 23-26 June 2000 by a team of researchers from the three fisheries institutes participating in the project. Subsequently, a second, follow-up, PRA was done at Obenge on 22-25 August 2000 by the Kenyan research team. The overall objective of this second PRA exercise was to identify ways in which community-based regulatory and monitoring systems might be established, and how these might fare over time.

The next steps in the 4-beaches study were to set up a participatory monitoring program for Obenge. For this exercise it was essential that there was input both from the researchers and the community, in the planning and implementation stages. From the two PRA exercises, a number of Project objectives and issues were identified that could form the core of the monitoring process (see Table 5 below). Relevant indicators for the issues to monitor were also suggested by the research teams.

The following was the procedure of action:

- (a) A PRA exercise at Obenge Beach to identify the community's priorities of issues to monitor. This is planned for the first week of October, 2000.
- (b) A follow-up visit of a delegation of the Obenge community to Kenya Marine and Fisheries Research Institute's Kisumu Research Centre, to be appraised on the research activities currently going on there. During this visit, the researchers will further discuss with the community about the issues to monitor, and plan for the next stages of the monitoring process. The meeting is planned for mid-October 2000.
- (c) A visit to the community in the first week of November 2000 to establish the monitoring process at Obenge Beach. This will involve identifying counterparts in the community to participate in the monitoring of the fishery and its management. Thereafter, the research team will visit the community once every month, to monitor changes. The community will also be invited to visit KMFRI every third month to discuss the monitoring process with the community.

A review of the 4-beaches Study was been scheduled to take place at the end of one year. This review would provide an opportunity for SEDAWOG to present, discuss and conclude the findings from the different components of the 4-beaches Study. These components included the 'base-line' participatory appraisals conducted from April to September 2000 as well as the results of participatory monitoring subsequently undertaken at each of the four beaches.

| Monitoring Questions or Objectives (Goal, purpose, outputs, activities) | Indicators  | Data Collection       |                      |  |                                 |                                |   |
|---|---|-----------------------|----------------------|--|---------------------------------|--------------------------------|---|
|   |   | Source of information | Baseline data needed | Who is involved  | Tools & methods                 | Frequency                      | Additional resources                                      |
| 1. Regulations  | <ul style="list-style-type: none"> <li>- Common offences</li> <li>- Frequency of offences</li> <li>- Frequency of punishment</li> </ul>                         | PRA                   | Obenge Report        | Beach leader, fishers  | Matrix, SSI                     | Quarterly                      | Paper, Pens, Chalk  |
| 2. Fish landed  | <ul style="list-style-type: none"> <li>- Fish sizes</li> <li>- Species composition</li> <li>- Quantity landed</li> <li>- Fish quality</li> </ul>                | Beach records, PRA    | To collect           | co-op officials, fishers, beach leader                       | SSI, Seasonal calendar          | Monthly                        | Paper, Pens, Chalk, weighing scales, 1 community recorder |
| 3. Community participation  | <ul style="list-style-type: none"> <li>- No. of meetings</li> <li>- Meeting attendants</li> <li>- No. of patrols</li> <li>- the patrollers</li> </ul>           | PRA                   | To collect           | Beach committee, fishers                                     | SSI, Pie charts                 | Quarterly                      | Paper, Pens, Chalk, 1 recorder                            |
| 4. Conflicts  | <ul style="list-style-type: none"> <li>- Frequency of conflicts</li> <li>- Conflicts within organisations</li> <li>- Conflicts between organisations</li> </ul> | PRA                   | Obenge report        | Beach leader, Asst. Chief, elders, community elders, fishers | SSI, Matrix                     | Quarterly                      | Note books  |
| 5. Socio-economic status of communities                                 | <ul style="list-style-type: none"> <li>- Wealth status</li> </ul>   | PRA                   | Obenge report        | fishers  | Wealth ranking, SSI             | Biannually and annually        | Paper, Pens, Chalk  |
| 6. Gears and fishing methods  | <ul style="list-style-type: none"> <li>- Gear types</li> <li>- Opinion about gears</li> </ul>   | Beach records, PRA    | To collect           | Beach leader, Fisheries Officer, fishers                     | SSI, matrix, seasonal calendar  | SSI, matrix, seasonal calendar | Paper, Pens, Chalk  |
| 7. Demographic information  | <ul style="list-style-type: none"> <li>- Immigrations</li> <li>- Emigrations</li> <li>- New entrants</li> </ul>   | Beach records, PRA    | To collect           | Beach leader, Beach committee                                | SSI, Seasonal calendar          | SSI, Seasonal calendar         | 1 community recorder, pens, books, pencils                |
| 8. Organisations on the beach   | <ul style="list-style-type: none"> <li>- Types and no. of organisations</li> <li>- Membership</li> <li>- Co-op performance</li> </ul>                           | PRA                   | Obenge report        | co-op leaders, fishers, beach committee                      | SSI, Venn diagrams, flow charts | Quarterly                      | Note books, pens  |

Table 5: Monitoring at Obenge Beach

### Monitoring Objectives

The PRA team discussed appropriateness of the monitoring indicators with community members. The order in which the community had prioritised its monitoring objectives was reviewed and no changes were made:

| Monitoring Objectives                  | Indicators   | Data collection   |           |
|--|--|---|-----------|
|  |  | Who is involved   | Frequency |
| 1. Regulation                          | (a) Common offences<br>(b) Frequency of offences<br>(c) Frequencies of punishment  | (a) Beach secretary<br>(b) Assistant chief<br>(c) Chief | Monthly   |
| 2. Security                            | Amount of theft (theft of nets, boats, fish)   | Beach secretary   | Monthly   |
| 3. Community participation             | (a) No. of beach meetings meeting objectives.<br>(b) No. of people attending meeting.<br>(c) No. of men and women present and participating.                                   | Beach secretary   | Monthly   |
| 4. Socio-economic status of the fisher | (a) No. of boats on the beach<br>(b) Security measures in place<br>(c) New development on the beach<br>(d) Population variation<br>(e) Type of nets                            | Both community and researchers                          | 6 months  |
| 5. Gear types                          | (a) Types of gears.<br>(b) Attitude of fishers towards gear types in use.<br>(c) Catches from different gears.   | Beach secretaries                                       | Monthly   |
| 6. Organisations                       | (a) Type and number of organisations (e.g. Co-operative, patrol dept, women's group, beach committee).<br>(b) Membership in the organisation.<br>(c) Co-operative performance. | Beach secretary   | 6 months  |
| 7. Daily catch                         | (a) Quantity landed<br>(b) Species composition<br>(c) Rejected fish  | Beach secretary   | Monthly   |
| 8. Conflicts                           | (a) Frequency of conflicts<br>(b) Conflicts reported<br>(c) Conflict not reported<br>(d) Conflicts punished<br>(e) Conflicts within and between organisations                  | Beach secretary   | Monthly   |
| 9. Migration                           | (a) Beach population<br>(b) Development on the beach   | Beach secretary   | Monthly   |

**Table 6: Community monitoring objectives**

However, the community suggested some additional indicators to be monitored:

- (a) The objectives of community meetings.
- (b) Number of boats on the beach.
- (c) Security measures in place.
- (d) New developments at the beach.
- (e) Population variations.
- (f) Types of nets.
- (g) Conflicts reported.
- (h) Conflicts not reported.

The community representatives said it would not be possible to get data on all fish landed, because the fish is not always sold from the *banda*, but sold from elsewhere. They also indicated that it would be a sensitive exercise to do as all fish caught is supposed to be sold from the *banda* and taxed, but fishers would prefer to evade the tax and sell the fish secretly to the women.

#### *Data collection*

Obenge community has two beach secretaries whom they proposed to assist in data collection. They were the most appropriate people because they had access to the beach records that are in their office. Community representatives claimed that they would prefer the data to be collected on a monthly basis, apart from the data on wealth ranking and organisations which should be collected over longer periods.

#### 2.1.4. Participatory monitoring and evaluation at Ihale and Mwasonge in Tanzania

##### *Beach descriptions*

Ihale is a large landing fish site lying approximately 65 km. from Mwanza along the Mwanza-Musoma highway. It was selected as a candidate for the 4-beach study because of its proximity to Mwanza and because of its size. It had some 120 boats and 3 fish collection agents from fish processing factories. The landing has a population of around 5,000 people, most of them connected to fishing and trading activities. Rainfall is erratic, and therefore Ihale's main economic activities are fishing and trading. The major gear types used were gillnets and long lines (Geheb *et al.*, 2000: 30).

Mwasonge is one of the smallest beach in Misugwi District in Mwanza. It is located about 10 km from Mwanza on the boarder between Mwanza Rural and Misugwi Districts. Mwasonge has a population of around 1,500 people. The main fish caught is tilapia and an average of 5-10 boats land at the beach daily. Although fishing occurs daily, catches will typically decline around the dry season (Medard *et al.*, 2000: 157). The Mwasonge community also farms, cultivating maize, cassava and millet. The landing also maintains a vegetable garden along the lake shore.

Study objectives were:

- (a) Identification of community institutions that influence access/ownership of fisheries resources.
- (b) Identification of other institutions that could be used for these purposes.
- (c) Understanding whether or not community-based institutions are able to support externally introduced management measures.
- (d) Understanding the kinds of benefits that communities require in order to adopt and /or develop regulatory institutions.
- (e) Understanding the factors that contribute to the survival of community-based institutions over time.
- (f) Identifying how extension services can be delivered to communities that depend upon fishing.

After the completion of PRA studies, researchers and the communities from the two beaches arranged a meeting to develop a joint and participatory monitoring process. This was held at each beach. The meeting drew various stakeholders including fishers, fish traders, factory agents, farmers, revenue collectors, non-fish traders and other community members.

The problems identified by the communities were as follows:

- (a) Institutional conflicts.
- (b) Conflicts between the Beach Management Units (BMU) and the village government.
- (c) Conflicts between the BMUs and the Fisheries Department.
- (d) Conflict between the village government and District Councils over levy collections.
- (e) Persistent use of illegal gear.
- (f) Poor infrastructure and settlement planning at the beach/village.
- (g) Lack of funds for the BMU to run various activities.



- (h) Poor group relationships.
- (i) Poor feedback mechanisms between the communities and other responsible institutions.
- (j) Poor health, hygiene and sanitary conditions.

The latter exercise led to the formation of specific objectives for the study that can be summarised as follows:

- (a) To investigate the source of conflicts and how it these can be resolved.
- (b) To investigate the causes of illegal gear use and how these can be minimized by the communities themselves.
- (c) To find out how BMU funding problems evolved, and their coping strategies.
- (d) To identify various institutional groups and how they related to one another.
- (e) To investigate various efforts made by the communities in the areas of health, hygiene and sanitation.

Armed with these objectives, the participatory planning process was summarized as shown in Table 7 below.

#### *Methods used during the monitoring process*

PRA tools: Various PRA tools were used during the monitoring process, including, semi-structured interviewing, Focus Group Discussion (FGDs), discussions with officials and the triangulation of results.

Field visits: During the monitoring period the researchers made six visits to the communities for the purpose of monitoring the above issues.

Reciprocal visits: A single reciprocal visit by the communities to the research institute occurred, which ensured that representatives from Ihale had an opportunity to talk and compare activities with Mwasonge's representatives. The communities were also able to see for themselves some of the activities in which the research institute was involved. This helped them to know how the government was concerned about fish resources, and also to help them to gain confidence. After this visit, Mwasonge BMU leaders visited Chole to learn how they had succeeded in various issues regarding fisheries management and sanitation.

Workshops: Participants from the selected communities were also able to attend a national co-managerial stakeholder's consultative workshop which gave them the opportunity to discuss with other community and stakeholder representatives TAFIRI's activities at their landings and their mutual experiences. During the workshops, participants identified lake-wide problems and suggested possible solutions (see below).

Community meetings: Two community meetings were held during the monitoring period. The first was held at the beginning of the period to develop the monitoring process. The second community meeting was held to evaluate the joint monitoring plan.

Discussions with Fisheries Department (FD) officials: Discussions were held with district FD officials. Views that emerged from these were summarized.

Evaluation: FGDs and individual interviews were used to investigate various issues at the community and individual level, the results of which were then validated by the community.

#### *Lessons learned from the monitoring process.*

Moral support and encouragement: The initiatives that communities take need to be encouraged. They need to be visited frequently to create an environment of continuing process, and to ensure that they perceive that others are concerned about their problems.

| Objective   | Mwasonge/<br>Ihale | Indicator   | Who involved  | Tools and<br>methods                               | Visits  |
|---|--------------------|---|---|--|---------|
| To reduce the number of illegal fishing gears     | All community      | Incidence of night fishing.<br>Incidence of illegal fishing.<br>Incidences of floating fish.<br>Amount of juveniles in catches.<br>Size of fish caught. | Community<br>BMU<br>Fishers<br>FD<br>Court of law       | FGD<br>SSI<br>BMU daily reports<br>Monthly reports | Monthly |
| Improve hygiene and sanitation of the beaches.    | All                | Availability of fish selling racks at the beach.<br>Quality of latrines.<br>Amount of solid or liquid waste.  | BMU<br>Health attendant<br>FD.<br>Community             | FGD<br>SSI<br>BMU<br>Reports                       | Monthly |
| Monitor use of undersized mesh nets.              | All                | Sizes of fish caught.<br>Types of nets used.<br>Number of juvenile fish being fried.  | BMU<br>Fishers<br>FD<br>Court of law                    | FGD<br>SSI<br>BMU<br>Reports                       | Monthly |
| Investigate ways in which the BMU generates funds | All                | Development activities at the beach.<br>Bank account.<br>Investments by BMU.  | BMU<br>Fishers<br>FD<br>Community<br>Revenue collectors | BMU reports<br>SSI<br>FGD                          | Monthly |
| Reduction of splashing /drumming methods          | Mwasonge           | Amount of drumming.<br>No. of offences.   | BMU<br>Fishers<br>Fisheries<br>Department               | FGD<br>SSI<br>BMU<br>Reports                       | Monthly |
| Health  | Ihale              | Community health.<br>No. of disease outbreaks.  | Community<br>Health Dept.                               | FGD<br>SSI<br>Reports                              | Monthly |
| To enhance documentation and feedback             | Ihale              | Files for documentation.<br>Schedules for documentation.  | BMU<br>Village government<br>Community                  | FGD<br>SSI<br>Reports                              | Monthly |
| Group relationships                               | Mwasonge           | Quality of relationship.<br>Groups working together.<br>Formation of umbrella and integrated groups.  | BMU<br>Village government<br>All Men and women          | FGD<br>BMU<br>SSI<br>Reports<br>Venn diagram       | Monthly |

Table 7: Objectives and monitoring indicators developed by Mwasonge and Ihale communities.

Community bylaws: Community were capable of generating their own bylaws, and following these through without any external intervention.

Recognition of their roles and responsibility: Communities understood that it was their responsibility to manage the lake by creating bylaws and arranging local patrols.

Negotiation of power and benefits process: From the study, we learned about the importance of negotiation in the relationships that the BMUs shared with the village government and local government.

Financial stability and sustainability: The question of financial sustainability is crucial to the management of fisheries resources, and donors cannot be relied upon to fund management activities.

Weak BMUs favoured illegal gears: Illegal gear users favoured weak BMUs because they could ignore these and continue with their illegal fishing activities.

## 2.2. The stakeholders' workshops

To set the scene and to convey the magnitude of the problems faced by Lake Victoria, the following, short paper was delivered at the start of every workshop:

### *Assessment of fish stocks in Lake Victoria: Speaking Notes*

Good management of fisheries depends on having good information about the state of the fish stocks which are being exploited. This is true in Lake Victoria just as it is true everywhere in the world. It is necessary to know how much fish there are, as well as details like how many of them are old and how many are young. This knowledge is essential in order to decide what stakeholders must do to manage the fishery. It is essential to adopt management practices which are scientifically based, in order to ensure that the fishery will provide food for our children and for their children too.

The LVFRP has implemented an extensive programme of survey activities concerning the fisheries in Lake Victoria. Different kinds of survey are needed. Firstly, catch assessment data is collected from landing sites over long periods of time. This data tells us if catches are decreasing or increasing, and whether or not too many young fish are being landed. Secondly, we conduct surveys on the Lake using research vessels. These are large vessels which can use different fishing methods like trawl gear and gillnets. They are equipped with scientific instruments which can find fish in the water even without catching them.

The LVFRP's research vessels have been carrying out surveys since 1997. They have carried out three types of surveys. The first are called 'bottom trawl surveys', in which we investigate the fish which live near the lakebed, notably the Nile perch. The second type of surveys are called 'gillnet surveys'. Here we use lots of gillnets made with different mesh sizes in order to catch a wide range of fish species, both big and small. The nets are set at various depths from the bottom to the surface. Gillnetting can be done in the rocky inshore areas where trawling is not possible. In this way our sampling of the Lake fish has been extended to cover more species and the capture of fish high in the water, beyond the reach of bottom trawls. The last kind of surveys done are called 'acoustic surveys'. These are a good way to survey a large area quickly. One research vessel can do an acoustic survey of the whole Lake in only 18 days. An instrument called the echo-integrator is used to detect any fish swimming below the vessel. The echo-integrator works by transmitting a pulse of sound into the water. This pulse is reflected by the fish, causing an echo which is detected on the vessel. The more fish there are, the stronger is the echo. So, by measuring the echo strength, we can determine how much fish there are. The acoustic survey is used to study fish in mid-water, notably the *mukene* and *nkejje*.

The LVFRP has also been carrying out socio-economic studies. Here, teams of researchers from the fisheries research institutes of East Africa, visit fish landing sites to collect information directly from the fishing communities themselves. We have collected various types of data on, for example, how fish is marketed, how fishing communities can contribute to the management of the fishery, and on the welfare of fishing communities, as we try to understand the role of fishing in their lives and how it contributes to their livelihoods. Of particular interest to the researchers has been the attitudes of stakeholders with respect to expanding their role in the management process. There is ample evidence that stakeholders have a great deal to contribute to the management process, and could work with government to improve the management of the fishery.

What results have we been able to show? In the case of Nile perch stocks, we know that lakewide there are about 650,000 tonnes. This amount has not changed much in the past two years which is good news. But the total abundance is not the whole story. It is equally important to know what size of fish are being caught. Here the news is not so good. Our studies have shown that too many young fish are being caught, with 50 per cent of total production being moved each year.

In the case *nkejje* and *mukene*, the acoustic surveys have shown that these are widespread throughout the Lake. The availability of these fish depends on seasonal changes in environmental conditions. We are not yet able to determine an accurate abundance estimate for the small pelagic fish. It is hoped that ongoing research will soon make this possible. In the meantime, the best indication we can give is a very rough estimate of around 750,000 tonnes for the total population of *mukene* and *nkejje* in the Lake.

There are, at present, 42,458 boats on Lake Victoria, and almost 130,000 crew. Our research work indicates that fishing communities consume a great deal of this fish, but even larger amounts are destined for the export trade. Every year, fillets worth approximately US\$ 220 million leave the region. This trade provides incomes to thousands of fishing communities on the lake shores. Worryingly, however, our research suggests that these incomes are not distributed fairly amongst members of communities and that in many cases money is not saved against times when there may be little fish.

Our survey work has also focussed on what communities think about the management of the lake and what kinds of changes that they have observed over time. Fishermen are almost unanimous about declines in the fishery – that there is now less fish, that individual fish are smaller, and that they spend much longer trying to catch it. Most fishermen know what about fisheries regulations, so the question of course arises why do so many of them disobey them? Or is it a problem of there being too many fishermen?

These are some of the issues that we need to know about, and is part of the reason for this workshop. We value your inputs and need them if our task is to succeed. We look forward to using your deliberations as a basis for a future management plan for Lake Victoria.

Following the above presentation, participants were asked to divide into their respective stakeholder groups to deliberate the questions posed to them. Having been provided with plenty of time for this activity, each group summarised their discussions with a presentation, which was then debated in a plenary session. The questions deliberated and eventually presented by these groups were as follows:

- (a) Is fisheries management necessary for Lake Victoria? What are its benefits?
- (b) Who are the stakeholders in fisheries management?
- (c) What should be managed in fisheries management?
- (d) How should fisheries be managed (list a range of activities)? How can stakeholders co-operate together for the management of the fisheries?
- (e) What do you think are the costs of fisheries management and who do you think should pay for these?
- (f) What are fisheries offences? How should the offences you identify be dealt with?

### 2.3. References

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