

RESEARCH FOR THE MANAGEMENT
OF THE FISHERIES ON LAKE
TANGANYIKA

GCP/RAF/271/FIN-TD/65 (En)

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August 1997

SOCIO-ECONOMIC DIMENSIONS OF LAKE TANGANYIKA FISHERIES:
SURVEY PLANNING AND TRAINING WORKSHOPS
PART I: KIGOMA WORKSHOP, 22 - 30 APRIL 1997
PART II: BUJUMBURA WORKSHOP, 01 - 07 JULY 1997

By:

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FINNISH INTERNATIONAL DEVELOPMENT AGENCY

FOOD AND AGRICULTURE ORGANIZATION
OF THE UNITED NATIONS

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PREFACE

The Research for the Management of the Fisheries on Lake Tanganyika project (LTR) became fully operational in January 1992. It is executed by the Food and Agriculture Organization of the United Nations (FAO) and funded by the Finnish International Development Agency (FINNIDA) and the Arab Gulf Program for the United Nations Development Organization (AGFUND).

LTR's objective is the determination of the biological basis for fish production on Lake Tanganyika, in order to permit the formulation of a coherent lake-wide fisheries management policy for the four riparian States (Burundi, Tanzania, Zaïre and Zambia).

Particular attention is given to the reinforcement of the skills and physical facilities of the fisheries research units in all four beneficiary countries as well as to the build-up of effective coordination mechanisms to ensure full collaboration between the Governments concerned.

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GCP/RAF/271/FIN PUBLICATIONS

Publications of the project are issued in two series:

- * a series of **technical documents (GCP/RAF/271/FIN-TD)** related to meetings, missions and research organized by the project;

- * a series of **manuals and field guides (GCP/RAF/271/FIN-FM)** related to training and field work activities conducted in the framework of the project.

For both series, reference is further made to the document number (**01**), and the language in which the document is issued: English (**En**) and/or French (**Fr**).

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ACKNOWLEDGMENTS

In Kigoma, we thank Ms. Els Bosma for arranging organizational matters such that all workshop participants felt very well cared for. Our thanks also go to Messrs. D.B.R. Chitamwebwa, K.I. Katonda, A.N.M Kalangali, and S. Muhoza for their assistance with the Kiswahili translations of the SEC survey forms, and to Mr. V. Langenberg for helping out with computer support.

In Bujumbura, we thank Mr. Jean Marie Tumba for his general assistance, Mr. Eduard Nikomeze and Ms. Felicite Gatungane for their help in translating all survey forms and guides into French, and Mr. Mamert Mamboneza for arranging workshop logistics.

A general word of thanks goes to all workshop participants in both Kigoma and Bujumbura for the hard work and dedication that was shown.

The LTR Project Coordinator, Dr. George Hanek, deserves a special note of gratitude for his backstopping efforts which have made the whole survey exercise possible.

**SOCIO-ECONOMIC DIMENSIONS OF LAKE TANGANYIKA FISHERIES:
SURVEY PLANNING AND TRAINING WORKSHOPS**

PART I: KIGOMA WORKSHOP, 22 - 30 APRIL 1997

Reported by: J.Eric Reynolds

1. Tuesday (22.04.1997)

1.1 Opening session

The first LTR Socio-Economic Survey Planning and Training Workshop opened at the Tanzania Fisheries Research Institute (TAFIRI) station in Kigoma, Tanzania, on the morning of 22 April 1997

Mr. Chitamwebwa (OIC TAFIRI/Kigoma) welcomed the participants from Zambia and Tanzania. He expressed his regrets that colleagues from Zaïre and Burundi could not attend. Ms. Bosma (LTR OIC/Kigoma) then welcomed the workshop delegates on behalf of the LTR, and introduced the Workshop Coordinator, Dr. Eric Reynolds.

1.2 Introduction to workshop agenda and fisheries socio-economics

Reynolds welcomed all participants and expressed his appreciation for the opportunity of visiting the region again after some years away. He was involved with the early stages of the LTR project in 1991, when his duties took him both to Kigoma and Mpulungu.

The participants were each given a folder for filing documents and handouts to be distributed during the course of the workshop. Four items were already included in the folder -- viz.: copies of the technical consultation/planning workshop Terms of Reference; list of participants (see Annex I/1); programme of daily sessions (to be confirmed each morning -- see Annex I/2); and some selected readings related to fisheries management and socio-economics (SEC). Other working and reference documents to be included in the folder would be distributed as developed in the course of workshop sessions (see Annex I/3). Further details of workshop logistics were explained to the participants. The Workshop Secretariat, comprised of Reynolds as Coordinator assisted by Chitamwebwa and Bosma serving as Co-Administrators, would request the help of others as needed for the tasks of documentation and preparation of Workshop Proceedings. Ms. Petra Paffen agreed to assist the Secretariat in recording notes on the workshop general sessions.

Reynolds emphasised that his role would be one of facilitator to promote group interaction and individual participant contributions, rather than one as lecturer delivering 'one-way' messages. In view of the general lack of background in or experience with SEC studies related to fisheries management concerns amongst workshop members, the aim

would be to encourage rapid orientation and familiarisation through intensive group discussion and practical working sessions.

Discussion then moved to a brief general review of socio-economic perspectives and methods. It was stressed that any attempt at formulating a management plan for the fisheries of Lake Tanganyika must be firmly grounded in an understanding of circumstances and concerns of those who live immediately around the lake and are most immediately dependent upon its fish resources. It was also noted that several different techniques could be employed in obtaining key socio-economic information on fishers, fishing communities, fish traders, and fish consumers. Distinctions between 'quantitative' and 'qualitative' approaches in field investigations were reviewed. Decisions about which tools of enquiry should be used when organising any field investigation exercise clearly depend on several different factors, beginning with basic questions of time and funding limitations. Choice of particular methods or perhaps a mix of different methods of observation further depends on what investigators seek to know. Some methods may be more suitable as tools for eliciting information on certain subjects than others.

Formal, highly structured survey questionnaires can be immensely useful for eliciting basic facts about individuals and communities, but other kinds of social 'facts' might be more effectively discovered through such fieldwork techniques as key informant interviewing, 'participant observation,' and group discussion, all of which can be more or less structured or focussed. Case studies of particular individuals, places, or markets, for instance, often are founded on such techniques. Whilst extremely rich in detail, case studies may not on the other hand provide information pertinent to a wide geographical area. A distinction between 'intensive' and 'extensive' methods of socio-economic observation is sometimes made. Put simply, it comes down to the difference between 'finding out alot about a little,' or 'finding out a little about alot.'

Towards the end of the morning session, participants were grouped into three teams to work on developing background briefs on 'contexts of management.' Group 1 was asked to prepare a presentation on 'Fisheries of Lake Tanganyika, the Zambia experience,' and Group 2 was asked to do the same for the Tanzanian sector. Group 3 was requested to prepare a briefing on 'Lake Tanganyika fisheries monitoring and reporting practices in Zambia and Tanzania.'

1.3 Afternoon sessions

Individual working group sessions took place throughout the afternoon.

2. Wednesday (23.04.1997)

2.1 Morning sessions

The morning started with workshop administration announcements and the distribution of the day's agenda together with copies of further suggested reading on socio-economics and fisheries management. Reynolds then introduced guest speakers from the Lake Tanganyika Biodiversity Project (LTBP) and the Tanganyika Catchment Reforestation and Education Project (TACARE). The LTBP, like LTR, is a project with lakewide scope. LTBP personnel are very involved with socio-economic studies and have already mounted village appraisals at several sites in Zambia and Tanzania. More studies are planned, and it is hoped that LTBP and LTR socio-economic work can be done as much as possible on a collaborative basis in the coming months. The TACARE project has carried out extensive work in fishing villages along the lake shoreline in Kigoma District for many years, and its staff are well-positioned to offer observations on all aspects of local community life and advice on key issues related to fisheries and forestry.

2.1.1 Lake Tanganyika Biodiversity Project (LTBP)

A review of LTBP's overall programme was provided by Mr. Keith Banister. LTBP is a five-year effort that began in 1995, funded by the United Nations Development Programme/Global Environment Facility. It has as a principal objective the creation of a regional management plan involving all four lacustrine states, through which pollution can be controlled and the biodiversity of the lake sustained. The five basic components of the LTBP are:

- **Biodiversity:** investigations of species, species complexes, and habitats to determine which are under threat;
- **Pollution:** identification of pollution sources, effects, and possible preventative measures;
- **Sedimentation:** monitoring impact and evaluating possible ways of ameliorating it;
- **Socio-economics (SEC);** and
- **Environmental education (EE).**

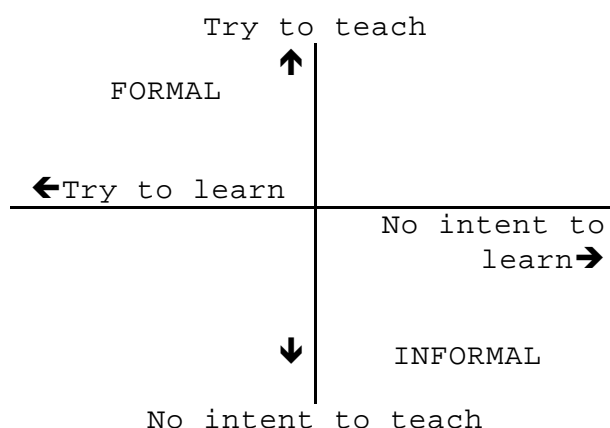
SEC and EE are the components that deal directly with local communities and the activities, needs, and perceptions of their residents. They are of crucial importance to the task of building co-management frameworks linking the many different interest groups concerned with the lake and the conservation and use of its unique resources. SEC and EE concerns cover subjects including fishing and agriculture practices, appraisal of possible aquatic reserve sites and their local acceptability, and the legal issues that are or will be involved with regionally co-ordinated efforts at sustainable development and conservation of the lake's resources.

Mr. Paul Vare, serving as an Environmental Education (EE) Advisor for LTBP, briefed the workshop in further detail on this aspect of the project. EE is closely connected to SEC, and the two in a way work as the 'glue' which holds the LTBP together.

Socio-economics is about broad topics such as how people structure their lives, interact with each other, gain their livelihoods, and measure wealth and status. Classic SEC questions are 'who is doing what? where? how? and why?' The answers to such questions frequently involve qualitative considerations, i.e. things that are inherently difficult to measure or quantify precisely.

Depending on which estimates are taken, there are some 7 to 10 million people who live immediately on or around the lake and who in one way or another draw upon its resources for their livelihoods. Human beings have proved a very adaptive and successful species in the lacustrine area. But they have in their success caused major environmental disruptions. At the same time, the human species is one that to some extent can control its destiny through an ability to learn and change. So there is room for hope for the future of Lake Tanganyika, provided the right approach is used. Because the human dimension of Lake Tanganyika's reality is so important, any attempts at creating a management scheme for the sustainable development of its resources and the protection of its biodiversity are bound to fail unless this dimension is fully appreciated and local actors fully involved with the scheme's design and implementation.

Information sharing is the largest aspect of EE as conducted by LTBP. It is approached very much as a two-way process, both 'top-down' and 'bottom-up.' The 'experts' on the lake are not only those who have advanced scientific degrees. There are also local 'experts' with extensive knowledge of particular places and phenomena. It is mistaken to equate 'knowledge' with education, if the latter is seen simply as a process of attending school and following a set curriculum administered by trained teachers in a very formal setting. There is also non-formal education, and the EE component of the LTBP is very much concerned with this 'education you miss in going to school' -- i.e. 'contextual education.' The distinction between formal and non-formal education is partly based on intention. Thus:



Participatory Rural Appraisal (PRA) is emphasised by LTBP as an effective approach to sharing both kinds of knowledge. It mainly relies on informal interactions between members of a

project team and members of local pilot villagers to build knowledge together with the community. It is very much a two-way process that involves listening and sharing and developing consensus based not only on what is important to local people but also on information that might be provided to them (e.g. through using video presentations) concerning other aspects of the lake and its ecology -- aspects that they may not be immediately aware of. Through the use of PRA, 'Environmental Education' can therefore as well be described as 'Environmental Negotiation.'

2.1.2 Briefing on the TACARE Project

A review of TACARE was presented by Mr. George Strunden, Project Director. TACARE is a Kigoma District-based project funded by the European Community and executed by the Jane Goodall Institute.

Twenty-two villages along the lakeshore from the border with Burundi to south of Kigoma are visited on a regular basis by the TACARE team. The project works to provide environmental education with the objective of promoting the sustained use and conservation of the natural environment along the shore. Particular emphasis has been placed on soil and watershed conservation through various activities (village tree nurseries, communal and private woodlots, land use planning and work with land officers to clarify land law issues, work with Water Department officers to promote catchment area protection and reliable, healthy water supplies).

The other main thrust of TACARE work has been in community education activities (youth groups, tree planting and theater clubs, excursions, film and video shows, etc.) and primary health care (hygiene and sanitation, reproductive health, nutrition). Outreach methods have included the use of peer educators, leaflet distribution, village meetings, and mobile cinemas. The mobile cinema has proved to be a very popular attraction and a most effective tool for reaching large groups.

As the project has evolved over the course of several years greater attention has been paid to the income generation activities which are most central to the lives of local villagers. The next phase of project activities slated to begin in the coming year will therefore include provision of fishing gear credits and improved palm oil extraction equipment.

2.2 Afternoon sessions

2.2.1 Context of Management: Fisheries of Lake Tanganyika, the Zambia experience

A brief overview of the major characteristics and management prospects and problems within the Zambian sector was presented by Mr. Mwape on behalf of his working team.

The following management-related concerns were highlighted in group discussion.

- 1) Existing regulations do not take into account important changes that have occurred in recent years. For example, current regulations governing mesh sizes allow fishing of juvenile stock by the artisanal kapenta seine fishery.
- 2) There is a classical case of (growth) over-fishing apparent in the industrial fishery, as reflected in official catch and effort records. The situation could perhaps be improved through strengthened technical consultation between DOF and the Licensing Committee responsible for the issuing of permits to industrial fishing units.
- 3) The situation with regard to the artisanal fishery is less clear. There has been a steady increase in the artisanal effort since the 1960s (more fishers, more units, and use of more efficient gear), but the actual impact of this trend is not really known.
- 4) There exists a lack of alternate employment opportunities for the inhabitants living at the lakeshore. This may be partly caused by poor agricultural potential and a limited amount of suitable farmland due to the roughness of the terrain at the lake shore. Nsumbu Park (West Coast) is a reserve area in which farming is prohibited (and only seasonal access for fishing is allowed at one beach).

2.2.2 Context of Management: Fisheries of Lake Tanganyika, the Tanzanian experience

A brief overview of the major characteristics and management prospects and problems within the Tanzanian sector was presented by Mr. Katonda on behalf of his working team.

The following management-related concerns were highlighted in group discussion.

- 1) It is expected that the concentration of fishing effort has resulted in local over-fishing. The statistical record is not as complete or reliable as desirable but it seems that the total annual catch of the traditional and artisanal fisheries shows a declining trend in recent years.
- 2) Difficulties with the statistical record stem in large part from inadequate coverage of local beaches by DOF enumerators. Enumerators are thinly distributed and in some cases poorly motivated because of low salaries and delayed salary payments. A further problem is that even though enumerators are supposed to be supervised by the DOF, they are actually hired and paid by local councils.
- 3) There is a lack of co-ordination by the local authorities which regulate the fishing licensing and regulations. The present regulations are outdated.
- 4) Infrastructure and transportation routes along the lake shore are very poor.
- 5) There are areas of environmental degradation as a result

of deforestation due to the smoking of fish.

- 6) The price of fish is highly variable as a result of unstable catch rates.
- 7) As a result of the political unrest in Burundi and Zaïre, many refugees are inhabiting the Tanzanian shoreline. This has resulted in competition for resources between local Tanzanian inhabitants and foreigners, and in some places an increase in lawless behaviour has occurred (cases of piracy).
- 8) There is a lack of storage facilities resulting in post-harvest losses.
- 9) Agricultural opportunities are often limited as a result of the roughness of the terrain along the lake shore.

2.2.3 Context of Management: Lake Tanganyika fisheries monitoring and reporting practices in Tanzania and Zambia.

A brief overview of the strengths and weaknesses of the existing statistical information systems within the national DOFs was presented by Ms. Lyimo for Tanzania and Mr. Chitembure for Zambia. Topical coverage was outlined (catch, effort, socio-economic information), and questions of data quality and availability discussed.

The meeting noted that:

- 1) Only a few industrial units are presently found in Tanzanian waters, though the actual operational status of these units is unclear.
- 2) Questions have been raised about the reliability of statistical data for the Tanzanian sector.
- 3) Market statistics on the prices of fish per type by DOF/Tanzania are in need of strengthening.

3. Thursday (24.04.1997)

3.1 Morning sessions

Following opening announcements and confirmation of the day's programme, participants divided themselves into groups to carry out an inventory of previous socio-economic studies of Lake Tanganyika fisheries/fishing communities. Three working teams were formed to review a) the SEC studies conducted under the regional Inland Fisheries Planning Project (IFIP) within the Tanzanian and Zambian sectors in 1991 (Group 1); b) the IFIP SEC studies of the Zairian and Burundian sectors, also carried out in 1991 (Group 2); and c) the LTBP Participatory Rural Appraisal studies of selected fishing communities carried out just recently in Zambia and Tanzania (Group 3).

The points to be reviewed were designated as follows:

- Geographical range covered.
- Topical coverage (subjects investigated, items enumerated)
- Types of questions asked (pre-coded/quantitative or open-ended/qualitative)
- Survey methods, operations, sampling strategy
- Community relations issues.

3.2 Afternoon sessions

Each of the working groups formed in the morning presented their inventory reviews. The speakers were Katonda (on IFIP Tanzania), Chitembure (on IFIP Zambia), Paffen (on IFIP Zaïre and Burundi) and Mwape (on GEF Zambia and Tanzania).

Dr. Reynolds summarised key points and elaborated on several terms and fieldwork approaches used in the earlier studies. These included:

- 'Stakeholders'
- Relative advantages/disadvantages of formal and statistically rigorous data collection operations versus more informal and intensive ('detail-rich') approaches, and how the two can be complementary.,
- 'Non-invasive data collection techniques'
- 'Key informants'
- 'Checklists'
- 'Matrices'
- Single-handed versus team interviewing of individuals and groups
- Community feature checklists; use of matrices
- Data collection monitoring and follow-up

Preliminary assessments were made of which investigation areas have received most attention in previous studies, and which may be in need of further coverage under the planned LTR survey exercise. It was stressed that SEC field investigations under the LTR programme should be particularly concerned with fisheries management- related issues.

4. Friday (25.04.1997)

4.1 Morning sessions

The opening announcements and confirmation of the day's programme were followed by a group briefing on the tentative survey timeframe, covering the sequential tasks of form preparation and pre-tests, fieldwork, data compilation, analysis, and reporting of results. With a final data analysis and reporting workshop tentatively scheduled for August 1997, the LTR team effectively has the months of May, June, and July to complete survey preparations and execution within the four national sectors of the lake. The inherent limitations on depth of detail and geographical coverage to be achieved in field investigations were noted. Preliminary observations and possibilities were discussed with regard to survey interview instruments (questionnaire size, use of different forms for

various types of data collection needs), sampling strategy, sample size etc.

In order to begin dealing with these issues of survey scope and content in more detail, workshop participants again divided themselves into three working groups. Group responsibilities and composition (name of group spokesperson underlined) were agreed as follows:

- 1) Group 1: Consideration of main harvest sector issues for socio-economic investigation and drafting of preliminary fisher interview form (Chitembure, Kissaka, Verburg, Langenberg).
- 2) Group 2: Consideration of community and post harvest issues for socio-economic investigation and drafting of preliminary survey form. (Lyimo, Bosma, Mwape, Chitamweba, Kesisawe).
- 3) Group 3: Consideration of sampling and operational issues and drafting of preliminary survey workplan (Katonda, Paffen, Kalangali, Kajelelo).

The three groups met in separate sessions for the balance of the morning.

4.2 Afternoon sessions

Group working sessions continued. Participants reconvened for a general review of progress before breaking for the day.

Group 1 discussed various options, and came to the decision that a modified form of the questionnaire previously used by IFIP should be devised. It was suggested that more questions related to management issues should be posed in an open-ended format to give the local people an opportunity to reply freely, rather than forcing strict 'either/or' choices on them.

Group 2 provisionally recommended that two types of questionnaires be adopted to cover on-shore and post-harvest concerns. The first would be designed to elicit basic information on landing sites and local communities, including population size, infrastructural features, social services, marketing facilities, etc. The second questionnaire would be used for individual interviews of fish processors and traders.

Group 3 raised a number of questions related to survey procedures and logistics. There are difficulties in defining the units of enumeration. Should a fisheries socio-economic survey focus on everyone who lives in fishing villages, or just those directly involved in fishing. Does one start with households or individual fishers? If fishers, boat owners or crew? For which fisheries (e.g. liftnet fishery versus gillnet fishery)? What about the case of fishing units like beach seines?

5. Saturday (26.04.1997)

Sessions started with opening announcements and confirmation of the day's programme. The working groups were then asked to proceed with drafting preliminary data collection protocols/sampling and operational plans on the computers at LTR/Kigoma. It was suggested that participants circulate between groups as appropriate in order to assist, depending upon the progress of work within their own groups.

Later in the afternoon each group presented a brief progress report. The groups were reminded to keep their survey investigation areas keyed to fisheries management-related issues. The Workshop Coordinator circulated a 'Thought Chart' to assist participants in prioritising major management problems for Lake Tanganyika fisheries and in relating the survey exercise to them.

6. Sunday (27.04.1997)

Group drafting sessions continued throughout the day.

Later in the afternoon the first drafts of notes and forms produced by the working groups were reviewed in general discussion. Most of the draft questionnaire presented by Group 1 consisted of a modified version of the earlier IFIP forms. Questions relating to views and attitudes of fishers were largely new.

Group 2 utilised some questions from the original IFIP forms, but framed a number of new points for investigation related to issues of fish processing and marketing.

Group 3, using results of the LTR Frame Survey conducted in 1995, classified all known landing sites within the Tanzanian and Zambian sectors of the lake by number of active fishermen. It was suggested that this approach would be the best way of sorting out landing site settlements by size of population.

Participants were asked to begin thinking about how questionnaire trials should be organised, and also to think about the designation of a survey implementation team, members of which would look after post-workshop follow-up tasks, including the finalisation of survey instruments, sampling procedures, and logistics.

7. Monday (28.04.1997)

7.1 Morning sessions

The Coordinator started the morning with workshop administrative announcements and confirmation of the day's programme. Working groups continued their individual sessions to complete first draft data collection protocols and sampling/operational plans.

In the second half of the morning a general discussion and 'stocktaking' took place. A checklist of possible issues and

areas for LTR socio-economic investigations was circulated. The wide range of items of potential interest to fisheries socio-economic investigations were listed under broad categories in the first column. Participants were then asked to fill in the second and third columns to indicate, respectively, whether a specific issue/area item has received attention in previous studies and whether in their judgement provision should be made in the LTR survey for repeat or additional coverage of the item. Space for recording comments and suggestions on data collection options was provided in the fourth column of the checklist.

7.2 Afternoon sessions

General discussion and stocktaking continued in the afternoon sessions. Working groups were asked to begin revisions of their first draft material to take into account points raised in overall group review, and to prepare these further drafts for general distribution. The harvest sector and community/post-harvest sector groups (Groups 1 and 2) were also encouraged to develop guidelines for structured interviews and case study exercises to supplement data collected through the formal questionnaire approach. Fishing unit cost-earning performance and regional fish marketing patterns were identified as two important analytical areas that might require special attention through the use of in-depth interviews and detailed case studies.

8. Tuesday (29.04.1997)

8.1 Morning sessions

Arrangements were agreed upon for the Workshop Secretariat (Reynolds, Chitamwebwa, Bosma and Paffen with the assistance of Langenberg and Verburg) to prepare an outline draft summary of all workshop proceedings and recommendations to be presented and adopted with revisions as necessary at tomorrow's closing session.

Final working group sessions then convened in order to complete draft data collection protocols/ sampling and operational plans as needed:

- Fishing enterprise (harvest sector) group: Questionnaire forms, and structured interview schedules as required.
- Community (post-harvest/ village features) group: Questionnaire forms, community facilities/services fact sheet and structured interview schedules as required.
- Sampling and operational planning group: Outline of sampling strategy for survey fieldwork covering the Zambia and Tanzania shorelines, and tentative schedule of operations and personnel assignments.

8.2 Afternoon sessions

Morning group working sessions continued in the first part of the afternoon, with each group submitting its final final working drafts as completed. The Workshop Secretariat convened

to finalise documentation for tomorrow's closing session. Secretariat preparations continued into the evening.

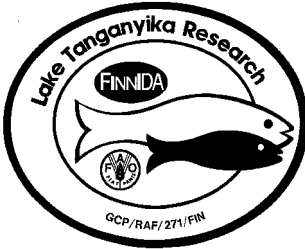
9. Wednesday (30.04.1997)

Secretariat preparations continued from early to mid-morning. At 1100h workshop participants assembled to review workshop summary notes and recommendations for follow-up activities to be undertaken by the LTR SEC Survey Coordination Group. Dr. George Hanek, LTR Project Coordinator, arrived from LTR Headquarters in Bujumbura to join in final workshop deliberations.

The workshop closing session convened at noon. Participants discussed and with minor amendments adopted the summary notes and recommendations prepared by the Secretariat (see Annex I/4). Workshop Co-Administrators Chitamwebwa and Bosma each addressed a word of thanks to the participants and to the Workshop Coordinator for a busy and productive set of meetings. Reynolds expressed his gratitude for the hard work and dedication of all participants, and particularly to those who participated in the considerable but often 'backstage' efforts of the Workshop Secretariat to produce working documents and generally to keep things running smoothly. Dr. Hanek brought the workshop to an official close with a vote of thanks to everyone for contributing to a very successful outcome, and expressed his confidence that the socio-economic survey work was off to a good start on the basis of the planning and preparation that delegates were able to accomplish over the course of the past eight days.

ANNEX I/1

LIST OF WORKSHOP PARTICIPANTS

	<p>GCP/RAF/271/FIN RESEARCH FOR THE MANAGEMENT OF THE FISHERIES OF LAKE TANGANYIKA</p> <p>SOCIO-ECONOMIC DIMENSIONS OF LAKE TANGANYIKA FISHERIES: PRELIMINARY TECHNICAL CONSULTATION & PLANNING WORKSHOP Tanzania Fisheries Research Institute (TAFIRI), Kigoma, Tanzania, 22 - 30 April 1997</p>		
<p>DocRef: LTR/SEC/Kgm/02</p>	<p>LIST OF WORKSHOP PARTICIPANTS</p>	<p>Date: 22 April 1997</p>	

NAME	DESIGNATION/STATION	ADDRESS	SPECIALISATION/REMARKS
<u>Kigoma/Tanzania</u>			
1) Mr. D.B.R. Chitamwebwa	Ag. Director - TAFIRI/Kigoma	TAFIRI P.O. Box 90 Kigoma, TANZANIA	Limnology; Workshop Co- Administrator
2) Ms. Els Bosma	APO & OIC - LTR S/Stn - Kigoma	c/o TAFIRI P.O. Box 90 Kigoma, TANZANIA Tel./Fax (+255) (695) 3625 email: ltr.urt@twiga.com	Fisheries Biology/Zooplankton; OIC LTR S/Stn, Kigoma; Workshop Co- Administrator
3) Mr. K.I. Katonda	Sn. Research Officer	TAFIRI	Fisheries Biology

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	TAFIRI/Kigoma	P.O. Box 90 Kigoma, TANZANIA	
4) Mr. M.B.K. Kajelelo	Personnel Administrative Officer TAFIRI/Kigoma	TAFIRI P.O. Box 90 Kigoma, TANZANIA	Station Admin. Officer; w/ interest in workshop issues
5) Mr. U. Kisisiwe	Technician I TAFIRI/Kigoma	TAFIRI P.O. Box 90 Kigoma, TANZANIA	Diploma in Fisheries
6) Ms. Eronica Lyimo	Head, DOF Statistics Unit DOF/Dar es Salaam	Fisheries Division P.O. Box 2462 Dar es Salaam, TANZANIA Tel. (+255) (51) 22930	Fisheries Statistics and Information Systems
7) Mr. Piet Verburg	APO - LTR/Kigoma	c/o TAFIRI P.O. Box 90 Kigoma, TANZANIA Tel./Fax (+255) (695) 3625 email: ltr.urt@twiga.com	Fisheries Biology/Hydrodynamics
8) Mr. A.N.M. Kalangali	Researcher TAFIRI/Kigoma	TAFIRI P.O. Box 90 Kigoma, TANZANIA	Fisheries Biology/Zooplankton. To attend as observer.
9) Mr. M.B.S. Kissaka	Researcher TAFIRI/Kigoma	TAFIRI P.O. Box 90 Kigoma, TANZANIA	Fisheries Biology/Aquaculture. To attend as observer. Participation in LTBP Socioeconomic component activities.
<u>Mpulungu/Zambia</u>			
10) Mr. Leonard Mwape	OIC - DOF Mpulungu Stn	Lake Tanganyika Research	Limnology; w/


NAME	DESIGNATION/STATION	ADDRESS	SPECIALISATION/REMARKS
		Unit P.O. Box 55 Mpulungu, ZAMBIA Tel./Fax (+260) (04) 455188	interest in Fisheries Statistics
11)Mr. Rutendo Chitembure	Fisheries Statistician (OIC), Statistics Section, DOF /Chilanga	P.O. Box 350100 Chilanga, Zambia Tel./Fax (+260) (01) 278457	Fisheries Statistics and Information Systems
12)Mr. Lawrence Makasa	Technician - DOF Mpulungu Stn	Lake Tanganyika Research Unit P.O. Box 55 Mpulungu, ZAMBIA Tel./Fax (+260) (04) 455188	Hydrodyamics. To attend as observer first two days.
13)Mr. Victor Langenberg	APO & OIC - LTR S/Stn - Mpulungu	c/o Lake Tanganyika Research Unit P.O. Box 55 Mpulungu, ZAMBIA Tel./Fax (+260) (04) 455154 email: faovipul@zamnet.zm	Fisheries Biology/Limnology
14)Ms. Petra Paffen	APO - LTR/Mpulungu	c/o Lake Tanganyika Research Unit P.O. Box 55 Mpulungu, ZAMBIA Tel./Fax (+260) (04) 455154 email: faovipul@zamnet.zm	Fisheries Biology/Statistics
<u>LTR/FAO</u>			
15)Dr. George Hanek	LTR Programme Coordinator Bujumbura	c/o Lake Tanganyika Research P.O.Box 1250 Bujumbura, BURUNDI	To attend towards end of workshop sessions and assist with

NAME	DESIGNATION/STATION	ADDRESS	SPECIALISATION/REMARKS
		Tel: (+257) 229760 Fax: (+257) 229761 email: BDI01%REMOTE.UNDP- BDI@nylan1.undp.org	planning/ logistics for field activities, depending on travel situation Bujumbura - Kigoma.
16)Dr. J. Eric Reynolds	LTR Consultant, Socio- Economics c/o Fisheries Policy & Planning Division (FIPP), FAO, Rome	email: jeric@sprynet.com	Workshop Coordinator

<u>LTBP</u>			
17)Mr. Kieth Banister	Scientific Liaison Officer, Lake Tanganyika Biodiversity Project/ Kigoma		Guest speaker. Overview of LTBP
18)Mr. Paul Vare	Environmental Education Advisor, Lake Tanganyika Biodiversity Project		Guest speaker. Overview of LTBP Environmental Education & Socio-economics component work; possible areas for LTBP - LTR collaboration.
<u>TACARE</u>			
19)Mr. George Strunden	Coordinator, Lake Tanganyika Catchment Reforestation & Education Project/ Kigoma		Guest speaker. Overview of TACARE & observations on forestry/fishery issues within lakeshore communities.

ANNEX I/2

WORKSHOP DAILY PROGRAMME

	<p>GCP/RAF/271/FIN RESEARCH FOR THE MANAGEMENT OF THE FISHERIES OF LAKE TANGANYIKA</p> <p>SOCIO-ECONOMIC DIMENSIONS OF LAKE TANGANYIKA FISHERIES: PRELIMINARY TECHNICAL CONSULTATION & PLANNING WORKSHOP Tanzania Fisheries Research Institute (TAFIRI), Kigoma, Tanzania, 22 - 30 April 1997</p>		
<p>DocRef: LTR/SEC/Kgm/03 (dft)</p>	<p>TENTATIVE WORKSHOP PROGRAMME</p>		<p>Date: 22 April 1997</p>

DATE/TIME	ACTIVITY	REMARKS
<p>Tuesday -- 22.04.97</p>		
<p>10.00h</p>	<p>Welcome and introductions -- Mr. Chitamwebwa (Director, TAFIRI/Kigoma), Ms. Els Bosma (OIC - LTR S/Stn - Kigoma) & Mr. Eric Reynolds (Workshop Coordinator)</p>	<p>Introduction of workshop organisers and participants. Distribution draft workshop documents,</p>
<p>10.15</p>	<p>Tea/coffee break. Individual introductions.</p>	
<p>10.45</p>	<p>Introduction to workshop objectives and programme. -- Eric Reynolds</p>	<p>Technical consultation TORs. Scope of work. Note relevant studies & reference documents from previous & ongoing project work (IFIP, LTR). Working</p>

DATE/TIME	ACTIVITY	REMARKS
		group assignments (for Wednesday presentations).
11.15	Individual work groups -- preliminary sessions	
12.30	Lunch break	
14.00 -16.00	Group work sessions (preparations for Wednesday afternoon presentations)	
16.00	Break for day.	
Wednesday -- 23.04.97		
09.00h	Opening announcements and confirmation of day's programme -- <i>Eric Reynolds</i>	
09.15 - 10.00	Briefing on Lake Tanganyika Biodiversity Project. -- <i>Keith Banister, Paul Vare, & Laisha Said.</i> (LTBP/Kigoma)	Guest speakers. Overview of LTBP; Socio-economics & Environmental Education component activities. Possible areas for LTR - LTBP collaboration in socio-economic investigations.
10.00 - 10.30	Tea/coffee break	
10.30 - 11.15	Briefing on TACARE project. -- <i>George Strunden (TACARE/Kigoma)</i>	Overview of TACARE & observations on socio-economic features of lakeshore communities, fisheries/forestry issues.
11.15 - 12.30	Group work sessions (continue preparations for afternoon presentations)	
12.30	Lunch break	
14.00	Context of Management (1). Fisheries of Lake Tanganyika, the Zambia experience.	Brief overview of major characteristics, management

DATE/TIME	ACTIVITY	REMARKS
	-- <i>L. Mwape, V. Langenberg, & L. Makasa</i>	prospects & problems within the Zambian sector.
14.30	Context of Management (2). Fisheries of Lake Tanganyika, the Tanzanian experience. -- <i>D.B.R.. Chitamwebwa, K.I. Katonda, P. Verburg & team</i>	Brief overview of major characteristics, management prospects & problems within the Tanzanian sector.
15.00	Context of Management (3): Lake Tanganyika fisheries monitoring and reporting practices in Zambia and Tanzania. -- <i>R. Chitembure, E. Lyimo, & P. Paffen</i>	Strengths and weaknesses of existing statistical and information systems within national DoFs. Topical coverage (catch, effort, socio-economic info., data quality, availability, etc.)
15.30	Group discussion: Flagging key fisheries management issues within and between the two national sectors.	Preliminary inventory of major management issues. Outline summaries of presentations & discussion notes for workshop proceedings.
16.00	Break for day.	
Thursday -- 24.04.97		
09.00h	Opening announcements and confirmation of day's programme. Group briefing for inventory of previous socio-economic studies of Lake Tanganyika	Suggested background reading: Extracts from FAO Technical Guidelines for

DATE/TIME	ACTIVITY	REMARKS
	fisheries/fishing communities. -- <i>Eric Reynolds</i>	Responsible Fisheries (LTR/SEC/Kgm/04). esp. pp. 14-15, 30 - 39 (Sections 2.2 & 2.3), & pp. 73 - 75 (Table 1).
09.15 - 10.00	<p>Group work sessions (preparations for afternoon presentations/discussion).</p> <p>NOTE: Review of studies should consider, for example:</p> <p>Geographical range covered.</p> <p>Topical coverage (subjects investigated, items enumerated).</p> <p>Types of questions asked (pre-coded/quantitative; open-ended qualitative); questionnaire formats; use of other data/information collection methods, supplementary sources.</p> <p>Survey methods, operations -- sampling strategy, sample size & justifications; interview & site visit duration, field operation plans, enumerators/field staff, logistics, etc.</p> <p>Community relations issues (official clearance procedures, initial community contact, explanation of work to respondent communities, confidentiality, etc.</p>	<p>Group 1: Review of recent IFIP socio-economic studies, Tanzanian & Zambian sectors.</p> <p>Group 2: Review of recent IFIP socio-economic studies, Zaire & Burundi sectors.</p> <p>Group 3: Review of recent LTBP Participatory Rural Appraisal studies, Tanzanian & Zambian sectors.</p> <p>Other suggestions?</p>
10.00	Tea/coffee break	
10.30 - 12.30	Group work sessions (continue preparations for afternoon presentations/ discussion).	
12.30	Lunch break	
14.00 (Subject revision)	Review of IFIP studies (Tanzanian & Zambian sectors).	Outline summaries of presentations & discussion

DATE/TIME	ACTIVITY	REMARKS
	-- D.B.R.. Chitamwebwa, K.I. Katonda, R. Chitembure, P. Verburg & team	notes for workshop proceedings file.
14.30 (Subject revision)	Review of IFIP studies (Zaire & Burundi sectors). -- P. Paffen, V. Langenberg & team	Outline summaries of presentations & discussion notes for workshop proceedings file.
15.00 (Subject revision)	Review of LTBP studies (Tanzania & Zambia). -- L. Mwape, E. Lyimo, M.B.S. Kissaka & team	Outline summaries of presentations & discussion notes for workshop proceedings file.
15.30 (Subject revision)	Group discussion. Summary of geographical and topical coverage in previous socio-economic investigations; areas of sufficient & insufficient previous coverage. Identify priority topics for current LTR management-related socio-economic field investigations.	Identification of main socio-economic issues with direct bearing on fisheries management concerns for which additional or new investigations should be carried out. Prioritise. Discussion notes.
16.00	Break for day.	
Friday -- 25.04.97		
09.00h	Opening announcements and confirmation of day's programme. Group briefing (reminders) on survey timeframe, schedule for data compilation, analysis, & write-up work. -- Eric Reynolds	Inherent limitations on depth of detail and geographical coverage to be achieved in field investigations. Preliminary thoughts on survey interview instruments (form length, possible use of different forms for various types of data collection needs),

DATE/TIME	ACTIVITY	REMARKS
		sampling strategy, sample size, & co.
09.15 - 10.00	Group discussion: Review and finalise priority topics for investigation and discuss options for data collection instruments (survey questionnaire form or set of forms; village level data sheets; structured interview protocols for specific lines of inquiry, etc.)	Divide into working groups for drafting preliminary questionnaire forms, other data collection instruments/ protocols, & preliminary sampling & field operations plans.
10.00	Tea/coffee break	
10.30 - 12.30	Group drafting sessions.	
12.30	Lunch break	
14.00 - 14.30	Group discussion: progress review.	Group interim reports.
14.30 (subject revision)	Group drafting sessions.	To continue as needed.
15.30	Group discussion: progress review and planning of follow-on tasks.	
16.00	Break for day.	
Saturday -- 26.04.97 (Subject to Revision)		
10.00h	Opening announcements and confirmation of day's programme. -- <i>Eric Reynolds</i>	Schedule to be confirmed/updated. Workshop administration: continue with document updates, etc.
10.15 - 12.30	Working group drafting sessions (continued).	Working groups should begin formatting data collection protocols/sampling & operational plans on computer when ready.

DATE/TIME	ACTIVITY	REMARKS
		Depending upon progress of work within their own groups, participants should circulate between groups as appropriate in order to assist.
12.30	Lunch break	
14.00 - 16.00	Working group drafting sessions (continued).	Data collection protocols/ sampling & operational plans may be formatted on computer when ready.
16.00	Break for day.	
Sunday -- 27..04.97 (Subject to Revision)		
10.00h	<p>Opening announcements and confirmation of day's programme. -- <i>Eric Reynolds</i></p> <p>NOTES: Group presentation draft notes to be reviewed for final corrections/additions before adoption in workshop proceedings file (Action, please: group contact persons). Suggested further background preparations: cross-check questions/points now being proposed by working groups for investigation during LTR fieldwork against inventory of priority topics already identified.</p>	Schedule to be confirmed/updated. Workshop administration: continue with document updates, etc.

DATE/TIME	ACTIVITY	REMARKS
	Refer to (a) workshop presentations on 'Context of Management' and 'Previous studies', (b) 'Thought Chart'), and (c) extracts from Annex 4 ('Fisheries socio-economics') of the LTBP 1996 report (copies distributed).	
10.15 - 12.30	Continue finalising data collection protocols/ sampling & operational plans.	To anticipate: consideration of arrangements for questionnaire trials (pre-tests); designation of a survey implementation team for post-workshop follow-up (finalisation of survey instruments, sampling questions, operational details, etc.)
12.30	Lunch break	To anticipate: as above.
14.00	Continue finalising data collection protocols / sampling & operational plans.	To anticipate: as above.
15.30 - 1600	Group discussion: progress review & scheduling for Monday.	To anticipate: as above.
16.00	Break for day.	To anticipate: as above. + REMEMBER BACKGROUND PREPARATIONS!

DATE/TIME	ACTIVITY	REMARKS
Monday -- 28..04.97 (Subject to Revision)		
09.00h	Opening announcements and confirmation of day's programme. -- <i>Eric Reynolds</i>	Schedule to be confirmed/updated. Workshop administration: continue with document updates, etc.
09.15 - 10.00	Working group sessions to complete first draft data collection protocols/ sampling & operational plans as needed.	Otherwise, participants invited to complete further background preparations as suggested in Sunday programme notes.
10.00	Tea/coffee break	
10.30 - 12.30	General discussion/stocktaking: review of proposed data collection methods and protocols against inventory of priority topics for LTR socio-economic investigations. Begin working group follow-up.	To anticipate: consideration of arrangements for questionnaire trials (pre-tests); designation of a survey implementation team for post-workshop follow-up (finalisation of survey instruments, sampling questions, operational details, etc.)
12.30	Lunch break	To anticipate: as above.
14.00 -15.30	Working group follow-up of previous session: continue development of village service/amenities inventory, guidelines for structured interviews & case studies, as necessary. Print out working	To anticipate: as above.

DATE/TIME	ACTIVITY	REMARKS
	drafts for general group review.	
15.30 - 1600	Group discussion: progress review & scheduling for Tuesday.	To anticipate: as above.
16.00	Break for day.	To anticipate: as above.

DATE/TIME	ACTIVITY	REMARKS
Tuesday -- 29..04.97 (Subject to Revision)		
09.00h	Opening announcements and confirmation of day's programme. Arrangements for Workshop Secretariat to prepare outline proceedings, Workshop recommendations, etc., for Wednesday AM closing session. -- <i>Eric Reynolds</i>	Schedule to be confirmed/updated. Workshop administration: continue with document updates, etc.
09.15 - 10.00	General group discussion. Final review of checklist priority topics/areas for LTR socio-economic investigations.	
10.00	Tea/coffee break	
10.30 - 12.30	Final working group sessions to complete draft data collection protocols/ sampling & operational plans as needed. Fishing enterprise (harvest sector) group: Questionnaire forms, & structured interview schedules as required. Community (post-harvest/ village features) group: Questionnaire forms, community facilities/services fact sheet & structured interview schedules as required. Sampling and operational planning group: Outline of sampling strategy for survey fieldwork covering Zambia & Tanzania shoreline, and tentative schedule of operations and personnel assignments.	Working group assignments as before.

DATE/TIME	ACTIVITY	REMARKS
12.30	Lunch break	
14.00 -16.00	Morning working group sessions continue as required. Final working drafts for submission to Workshop Secretariat.	
15.00	Workshop Secretariat meeting, preparations for Wednesday AM final closing session.	
16.00	Break for day.	Workshop Secretariat preparations continue as required.

DATE/TIME	ACTIVITY	REMARKS
Wednesday -- 30.04.97 (Subject to Revision)		
08.00 - 10.30	Secretariat preparations, document assembly, & Co.	Contact DOF office Kigoma (Lyimo)
10.00 - 10.30	Tea/coffee in conference room.	
11.00	Final workshop group discussions, review of workshop summary notes & recommendations for follow-up, designation of LTR SEC Survey Coordination Group.	
12.00	Closing session. Last announcements, closing remarks. -- <i>Mr. Chitamwebwa (Director, TAFIRI/Kigoma), Ms. Els Bosma (OIC - LTR S/Stn - Kigoma) Dr. Eric Reynolds (Workshop Coordinator), Dr. George Hanek (LTR Coordinator)</i>	
12.30	GROUP PHOTOS. ➔ Farewell lunch.	Arrangements to be announced.
14.00 - 15.00	Further logistical planning with LTR Coordinator, Zambia delegates.	
15.00	Zambian participants return via steamer to Mpulungu (steamers depart from Kigoma every Wednesday only). Survey coordination team continues with preparation work at TAFIRI.	

ANNEX I/3

LIST OF WORKSHOP DOCUMENTS

DocRef:

- LTR/SEC/Kgm/01** Technical consultation & workshop terms of reference
- LTR/SEC/Kgm/02** List of workshop participants
- LTR/SEC/Kgm/03** Tentative workshop programme
Extracts from FAO technical guidelines
- LTR/SEC/Kgm/04** for responsible fisheries, No. 4: fisheries management.
- LTR/SEC/Kgm/05** Miscellaneous working/reference documents
- LTR/SEC/Kgm/05.01** Working group presentation notes:
- Context of Management (1). Fisheries of Lake Tanganyika, the Zambia experience.
 - Context of Management (2). Fisheries of Lake Tanganyika, the Tanzanian experience.
 - Context of Management (3): Lake Tanganyika fisheries monitoring and reporting practices in Zambia and Tanzania.
 - Group discussion notes: Preliminary inventory of key management issues.
- LTR/SEC/Kgm/05.02** List of previous socio-economic studies of Lake Tanganyika fisheries & lakeshore communities

LTR/SEC/Kgm/05.03 Working group presentation notes:

- Review of IFIP studies (Tanzanian & Zambian sectors).
- Review of IFIP studies (Zaire & Burundi sectors).
- Review of LTBP studies (Tanzania & Zambia).
- Group discussion notes: Summary of geographical and topical coverage in previous investigations; areas of sufficient/insufficient coverage. Priority topics for current LTR management-related socio-economic field investigations.
- Annexes: Copies of questionnaires used in IFIP surveys of Zambia and Tanzania sectors.

LTR/SEC/Kgm/05.04 Preliminary landing site/fishing village lists, Lake Tanganyika (Zambia & Tanzania sectors)

LTR/SEC/Kgm/05.05 Lake Tanganyika Biodiversity Project: Extracts from the 1996 NRI report on 'Social, economic, and sectoral features of the Lake Tanganyika Basin baseline review' (Vol. Two, Annex 4)

LTR/SEC/Kgm/05.06 Inventory of possible issues/areas for LTR socio-economic investigations (with 'Thought chart')

LTR/SEC/Kgm/06 Draft field survey forms: working group on fishing units & operations

LTR/SEC/Kgm/07 Draft field survey forms: working group on fishing communities & post-harvest

LTR/SEC/Kgm/08 Draft notes on survey procedures: working group on sampling & operational planning

LTR/SEC/Kgm/09 Workshop group summary observations & recommendations

LTR/SEC/Kgm/10 Draft workshop proceedings.

ANNEX I/4

KIGOMA WORKSHOP GROUP SUMMARY OBSERVATIONS & RECOMMENDATIONS

A. SUMMARY OBSERVATIONS

- 1) The preliminary technical consultation and planning workshop for LTR socio-economic investigations of Lake Tanganyika fisheries commenced on 22 April 1997 at the TAFIRI station in Kigoma, Tanzania. Objectives and timeframe for this exercise are defined in the Terms of Reference and LTR background briefing notes provided in the file of workshop documents (DocRef: LTR/SEC/Kgm/01).
- 2) A total of 19 participants were involved with the various workshop sessions (see DocRef LTR/SEC/Kgm/02)., including 14 who took part on a full-time basis. Unfortunately, due to civil unrest prevailing in some parts of the Lake Tanganyika region, it was not possible for delegates from Zaïre and Burundi to travel to Kigoma to attend the workshop.
- 3) The Workshop Coordinator (Reynolds) emphasised from the outset that his role would be one of facilitator to promote group interaction and individual participation contributions rather than as to serve as a lecturer delivering 'one-way' messages. In view of the general lack of background in or experience with socio-economic studies related to fisheries management concerns amongst workshop members, the aim was to encourage rapid orientation and familiarisation through intensive group discussion and practical working sessions.
- 4) The workshop ran for eight consecutive days, and comprised a very full programme of activities (DocRef LTR/SEC/Kgm/03).
- 5) Initial sessions included basic introductory discussion of socio-context perspectives and data collection methods, and the presentation of suggested background reading material (DocRefs LTR/SEC/Kgm/04, LTR/SEC/Kgm/05 -various). Briefings from guest speakers representing the Lake Tanganyika Biodiversity Project (LTBP) and the Tanganyika Catchment Reforestation and Education Project (TACARE) also took place. Both of these projects are concerned with socio-economic and fisheries issues in and around the lake. The LTBP group in particular has strong interest in conducting socio-economic investigations and appraisals of lakeshore communities in various localities and is hoping to collaborate as much as possible with ongoing LTR work.
- 6) Subsequent workshop sessions were devoted principally to developing participant familiarity with socio-economic perspectives and to identifying and deliberating on key management issues for the fisheries of Lake Tanganyika and, in this context, devising appropriate strategies and tools for the conduct of LTR field investigations.

- 7) Over the course of several days, the overall workshop group divided and re-divided itself into various task focus teams, through which a number of draft discussion papers, data collection forms, and survey procedure notes were produced. These latter include several papers on 'The context of management' (DocRef LTR/SEC/Kgm/05.01), 'Review of previous studies' (DocRef LTR/SEC/Kgm/05.03), 'Draft field survey forms: working group on fishing units and operations' (DocRef LTR/SEC/Kgm/06), 'Draft field survey forms: working group on fishing communities and post-harvest' (DocRef LTR/SEC/Kgm/07), and 'Draft notes on survey procedures: working group on sampling and operational planning' (DocRef LTR/SEC/Kgm/08).

B. RECOMMENDATIONS

On the basis of the preparatory activities and group discussion sessions outlined above, workshop participants have AGREED on the following recommendations for follow-up actions.

- 1) An LTR SEC Survey Coordination Team should be designated to oversee final preparations for the fieldwork planned over the course of the next few months. The Coordination Team should be composed of the following individuals:

Dr. J.E. Reynolds (LTR Consultant -- Team Advisor)
Mr. D.B.R. Chitamwebwa (Ag. Dir., TAFIRI/Kigoma)
Ms. E. Lyimo (DOF/ Dar)
Mr. R. Chitembure (DOF/Chilanga)
Ms. P. Paffen (LTR/Mpulungu)

- 2) The immediate tasks of the Coordination Team should be to review and revise/finalise as necessary the draft survey forms and data collection protocols prepared during the course of the workshop. The Team should organise pre-tests of forms and protocols as required in the Kigoma area, and finalise enumerator instruction manuals and coding guidelines.
- 3) Dr. Reynolds should, as anticipated in the technical consultation TORs, stay on in Kigoma for approximately one more week (more or less) in order to oversee these tasks. Ms. P. Paffen should also stay on in Kigoma for this additional period in order to assist in the work and with a view towards returning to her station in Mpulungu to brief DOF Zambia personnel about final preparations and to organise the start of survey work there.
- 4) Field survey work should be scheduled to begin simultaneously in both the Zambian and Tanzanian sectors of the lake as soon as possible after the first of June 1997. As the survey of these sectors is expected to require a three to four week period to complete, and bearing in mind the current civil difficulties prevailing in some regions, plans for subsequent extension of the investigations into the Burundi and possibly the Zaire sectors of the lake should be made on a tentative basis. If the situation warrants, Ms. P. Paffen should be detailed to organise

enumerator teams and other necessary preparations for the start of survey work in Burundi, and possibly along the Zaïre shoreline, around the first of July 1997 [see Part II -- Ed.].

- 5) Survey strategy: It is desirable to execute the SE survey in the same way in the whole survey area, i.e. in all four lacustrine states. The methods employed therefore should be applicable in all sectors. Survey site selection should be carried out on the basis of geographically stratified random sampling of the villages/ landing sites enumerated during the LTR sponsored Frame Survey carried out in March 1995. Following practices in earlier socio-economic investigations conducted under the IFIP project, sample size should be in the range of 5% of the total fisher population, although the final size determination should rest with the Coordination Team after all logistical details and final survey questionnaire formats have been settled.
- 6) Survey team set-up: 1 team in Zambia, 2 teams in Tanzania, each team to consist of 3 enumerators and one supervisor.
- 7) Survey team composition (tentative suggestions, to be confirmed by Coordination Team).

Zambia: Members from DOF/Mpulungu & LTR

Tanzania: Members from DOF/Kigoma & Rukwa Regions, TAFIRI/Kigoma, & LTR.

- 8) Transport for enumeration teams.

Zambia: R/V Silvershoal with 1 or 2 inflatables.

Tanzania: R/V Explorer with 2 inflatables for 2 teams to operate simultaneously. DoF team may be changed per Region.

- 9) Survey follow-up: The planned follow-up work of the technical consultation, as anticipated in the TORs, should involve the convocation of a data analysis and reporting workshop comprised of members of the Survey Coordination Team and others who have been closely involved with the conduct of field activities. The workshop should be scheduled to take place in August 1997, venue and participant details to be confirmed by Dr. Eric Reynolds and the Survey Coordination Team in consultation with Dr. G. Hanek, LTR Coordinator.

**SOCIO-ECONOMIC DIMENSIONS OF LAKE TANGANYIKA FISHERIES:
SURVEY PLANNING AND TRAINING WORKSHOPS**

PART II: BUJUMBURA WORKSHOP, 01 - 07 JULY 1997

Reported by: Petra Paffen

1. Tuesday (01.07.97)

1.1 Preliminary session

The Burundian and Democratic Republic of Congo (DRC) participants (see Annex II/1) were welcomed by Ms. Paffen upon arrival and arrangements for participants from outside of Bujumbura town were settled by LTR/Bujumbura's accountant, Mr. Mamboneza. The DRC delegation was asked to return in the afternoon in order to discuss logistics and to determine which parts of the western shoreline were accessible for survey work.

For Burundi, only 5 landing sites are expected to be accessible for SEC investigations, owing to security concerns. These sites include: Kadjaga, Nyamugari and Gitaza in the Bujumbura Province and Rumonge and Karonda in the Bururi Province. The Department of Fisheries (DOF) beach enumerators residing in those villages would participate in the workshop and begin executing the survey immediately thereafter. Two teams of 4 and 5 DoF/enumerators would work simultaneously in the Bujumbura and Bururi sites for about a week, travelling by car. Mr. Mamboneza helped to settle remaining logistical questions with the team supervisors -- Mr. Bashirwa for Bujumbura Province and Mr. Kanyaru for Bururi Province.

1.2 Afternoon sessions

For the DRC, only the shoreline from the Burundi border into Burton Bay in Sud-Kivu Province, and Kalemie District in Shaba Province, were deemed accessible for SEC investigations. The time span necessary to execute a strategy similar to the one adopted in the Tanzanian and Zambian sectors was estimated to be about 25 days, assuming a team of 6 CRH/Uvira enumerators using a hired transporter vessel to move from site to site. (Four out of the 6 enumerators had arrived in Bujumbura to participate in the workshop.) The team would start with the survey immediately after completion of the workshop. All further logistics were settled with the team supervisor, Dr. Mulimbwa.

2. Wednesday (02.07.97)

2.1 Opening session

Mr. Kanyaru (DOF/Bujumbura) welcomed the participants from the DRC and Burundi and officially opened the workshop. Dr. Hanek welcomed the workshop delegates on behalf of the LTR, and expressed his regrets that the Burundian and Congolese delegates had not been able to attend the original SEC workshop and technical consultation organised by Dr. Reynolds in Kigoma (22 - 30 April 1997). Dr. Hanek then introduced the Bujumbura workshop coordinator, Ms. Paffen.

Ms. Paffen explained that the Kigoma workshop had recommended that plans and preparations for SEC investigations in the DRC and Burundi sectors of the lake should certainly be attempted if the security situation permitted. As this now appears to be the case, it was decided to convene a follow-up of the Kigoma Workshop in order to train survey teams for Burundi and the DRC.

An outline of the workshop programme was distributed to all participants (see Annex II/2).

The importance of SEC investigations vis-à-vis the management of the fisheries of Lake Tanganyika was explained and a short summary of the Kigoma workshop and technical consultation given. The importance of executing the SE survey in the same way over the whole survey area, i.e. in all lacustrine states, was also emphasised. Thus, the survey of the DRC and Burundi sectors would follow the lines that have already been established for Tanzania and Zambia. This involves the use of three different survey forms to gather data related to fishing community features (Survey Form 1 -- Villages), the harvest sector (Survey Form 2 -- Fishers), and the post-harvest sector (Survey Form 3 -- Processors and Traders). Only the traditional and artisanal fisheries would be handled. The industrial fisheries (which are mostly concentrated in Mpulungu, Zambia) may be investigated at a later stage.

The morning session ended with a short summary of the preliminary discussions on coastline accessibility within the DRC and Burundi. In both countries, some areas along the coast line would not be monitored due to political unrest. Burundi presents the most restrictive situation, as there are only 5 sites that can be surveyed at present.

2.2 Wednesday afternoon

French translations of the three questionnaire forms and the enumerator guide already prepared for the Tanzanian and Zambian teams were distributed. (French translations by Ms. Gatungane in Word Perfect and Mr. Nikomeze in Excel under supervision of Ms. Paffen) Participants were asked to study them in the course of the afternoon. Ms. Paffen and Ms. Gatungane finalised the French versions of the sampling strategy tables and supervisor guidelines.

3. Thursday (03.07.97)

The strategy tables and supervisor guidelines on the sampling strategy in French were distributed to all workshop participants, and the sampling strategy was then reviewed in detail.

All remaining questions on the distributed enumerator guide and survey forms were discussed and both were adapted accordingly.

4. Friday (04.07.97)

The adapted survey forms were distributed to all participants and studied in detail under the direction of Ms. Paffen. Each information item was reviewed in consecutive order to ensure that participants understood the meaning of the questions being asked and the overall structure of the forms. Form 1 and part of Form 2 was handled in the morning. The balance of Form 2 and all of Form 3 were covered in the afternoon.

An effort was made to prepare the teams for difficulties to be expected in the field. The administration of Form 1 would be relatively easy in small villages, but difficult ones. On Form 2 it will be important to try to find fishers operating less common gear types such as long lines, lusenga nets and chiromilla seines. The importance of finding sufficient representatives in each distinguished category of fishermen was explained. For Form 3, it will be necessary to locate both processors and traders of both sexes. If possible; the sampling should be directed towards finding an equal number of representatives of each group.

All enumerators were asked to help with survey Form 2 as the sampling strategy was such that the number of fishers to be interviewed would be higher than the number of processors and traders to be covered with Form 3, and as the enumerators executing Form 1 would be able to collect data on the smaller villages in fairly short order.

5. Saturday (05.07.97)

The workshop participants arrived at Kadjaga beach close to Bujumbura at 06.00 hrs in the morning to conduct trial interviews. Enumerators were provided with copies of Forms 1, 2 or 3 according to their assigned specialisation. Enumerators handling Form 3 on traders/processors worked alone. (There were no processors found at Kadjaga beach where fish was traded fresh.) The enumerators handling Form 2 on fishers operated in groups of 2 or 3, each group interviewing as many different categories of fishers as possible. The team supervisors, Dr. Mulimbwa and Messrs. Kanyaru and Bashirwa, formed one team. After guiding the Form 2 and Form 3 teams, they carried out a trial run of Form 1 at Gatumba village.

Trial results were reviewed with all participants later in the afternoon, and further explanations of questionnaire items and procedures provided as necessary.

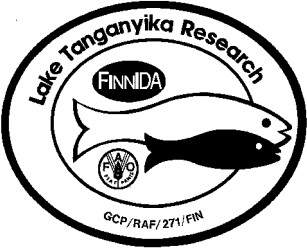
6. Sunday (06.07.97)

Review of survey trial results and coaching of individual participants continued throughout the morning. The afternoon was devoted to final clerical revisions of the strategy tables and forms by Ms. Paffen. The task of producing sufficient copies of the forms for the DRC and Burundi teams to start their fieldwork was then undertaken with the assistance of with Mr. Tumba.

7. Monday (07.07.1997)

Participants met for the closing workshop session in the morning. There was a general discussion and review of trial results and a final review of sampling strategies. Survey equipment was distributed and remaining logistical questions answered. Dr. Hanek officially closed the workshop, thanking participants for their attendance and wishing them success in the upcoming survey work, which he knew was being conducted under very difficult conditions.

ANNEX II/1

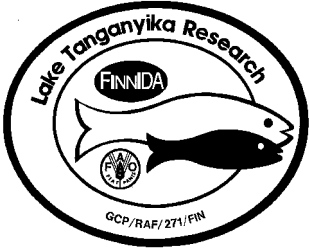
	<p>GCP/RAF/271/FIN RESEARCH FOR THE MANAGEMENT OF THE FISHERIES OF LAKE TANGANYIKA</p> <p>SOCIO-ECONOMIC DIMENSIONS OF LAKE TANGANYIKA FISHERIES: SURVEY PLANNING AND TRAINING WORKSHOPS BUJUMBURA WORKSHOP</p> <p>Department of Fisheries (DoF), Bujumbura, Burundi, 1-7 July 1997</p>	
<p>DocRef: LTR/SEC/Buja/02</p>	<p>LIST OF WORKSHOP PARTICIPANTS</p>	<p>Date: 2 July 1997</p>

NAME	DESIGNATION/STATION	ADDRESS
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4) Mr. F. Bashirwa	Researcher DoF/Bujumbura	Department of Fisheries Bujumbura, BURUNDI

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6) Mr. J.M. Tumba	Fisheries Assistant DoF/Bujumbura	Department of Fisheries Bujumbura, BURUNDI
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12) Mr. M. Bangirimana	Beach Enumerator DoF/Gitaza	Department of Fisheries Gitaza, BURUNDI
13) Mr. S. Hakizimana	Beach Enumerator DoF/Nyamugari	Department of Fisheries Nyamugari, BURUNDI
14) Mr. L. Sintuye	Beach Enumerator DoF/Kadjaga	Department of Fisheries Gatumba, BURUNDI
15) Mr. B. Kawasaki	Driver DoF/Bujumbura	Department of Fisheries Bujumbura, BURUNDI
<u>Uvira/Dem. Rep. of Congo</u>		
16) Dr. Mulimbwa	Head Economy Section Hydrological Research Center (HRC) HRC/Uvira	Hydrological Research Center Uvira, DEM. REP. OF CONGO
17) Mr. G. Kitungano	Research Assistant HRC/Uvira	Hydrological Research Center Uvira, DEM. REP. OF CONGO
18) Mr. E. Mukirania	Researcher Assistant HRC/Uvira	Hydrological Research Center Uvira, DEM. REP. OF CONGO
19) Mr. C. Bulambo	Researcher Assistant HRC/Uvira	Hydrological Research Center Uvira, DEM. REP. OF CONGO
<u>LTR/FAO</u>		

NAME	DESIGNATION/STATION	ADDRESS
20)Ms. P. Paffen	Associate Professional Officer LTR/Mpulungu	LTR -- Project GCP/RAF/271/FIN P.O.Box 55 Mpulungu, ZAMBIA Tel/Fax (+260) 04 455154
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ANNEX II/2

	<p>GCP/RAF/271/FIN RESEARCH FOR THE MANAGEMENT OF THE FISHERIES OF LAKE TANGANYIKA</p> <p>SOCIO-ECONOMIC DIMENSIONS OF LAKE TANGANYIKA FISHERIES: SURVEY PLANNING AND TRAINING WORKSHOPS BUJUMBURA WORKSHOP</p> <p>Department of Fisheries (DoF), Bujumbura, Burundi, 1-7 July 1997</p>		
<p>DocRef: LTR/SEC/Buja/02</p>	<p>WORKSHOP PROGRAMME</p>	<p>Date: 02 July 1997</p>	

DATE/TIME	ACTIVITY
<p>Tuesday -- 01.07.97</p>	
<p>Morning 8.30-12.00 hrs</p>	<p>Welcome of workshop participants Arrangements of workshop logistics Confirmation of accessibility of Burundian sites with Burundian delegates</p>
<p>Afternoon 14.00-16.30 hrs</p>	<p>Planning of sampling strategy with DRC team, taking into account accessibility of sites and necessary survey logistics.</p>
<p>Wednesday -- 02.07.97</p>	
<p>Morning 8.30-12.00 hrs</p>	<p>Official opening General introduction to the Socio-Economic Survey and review of the Kigoma Workshop proceedings and recommendations. Introduction of sampling strategies.</p>
<p>Afternoon 14.00-16.30 hrs</p>	<p>Distribution of enumerator guides. Introduction to survey forms. Self study.</p>
<p>Thursday --</p>	

DATE/TIME	ACTIVITY
03.07.97	
Morning 8.30-12.00 hrs	Summary of sampling strategies. Distribution of preliminary survey forms. Discussion of enumerator guide.
Afternoon 14.00-16.30 hrs	Adaptation of enumerator guide and survey forms.
Friday -- 04.07.97	
Morning 8.30-12.00 hrs	Familiarisation with survey Forms 1 and 2.
Afternoon 14.00-16.30 hrs	Familiarization with survey forms 2 and 3 Structuring of sampling teams.
Saturday -- 05.07.97	
Morning 8.30-12.00 hrs	Form 2 and 3 trials at Kadjaga beach near Bujumbura. Form 1 trial at Gatumba village near Kadjaga beach.
Afternoon 14.00-16.30 hrs	Separate control of results from each enumerator team and each enumerator by Paffen.
Sunday -- 06.07.97	
Morning 8.30-12.00 hrs	Separate control of results from each enumerator team and each enumerator by Paffen.
Afternoon 14.00-16.30 hrs	Adaptation of strategy tables and survey forms. Copying of forms (Secretariat).
Monday -- 07.07.97	
Morning 8.30-12.00 hrs	General discussion of trial results. Summary of sampling strategies. Distribution of survey equipment
Afternoon 14.00-16.30 hrs	Farewell social.

ANNEX 3

LIST OF WORKSHOP DOCUMENTS

DocRef:

LTR/SEC/Bur/01	Survey forms 1, 2 and 3 (french)
LTR/SEC/Bur/02	Enumerator guide on survey forms 1, 2 and 3 (french)
LTR/SEC/Bur/03	Maps 1 and 2 of the Burundian and Congolese shore line of Lake Tanganyika and a list of Congolese sites classified in March 1995 in the chosen areas
LTR/SEC/Bur/04	Strategy tables 1, 2 and 3 for the accessible Burundian, Sud-kivu and Shaba areas and sites (french)
LTR/SEC/Bur/05	Supervisor guide on sampling strategy and stragey tables 1, 2 and 3 (french)