GCP/RAF/271/FIN-TD/12 (En) August 1993

REPORTS OF TRAVEL 16-30 OF PROJECT GCP/RAF/271/FIN

by
George Hanek
(ed.)

FINNISH INTERNATIONAL DEVELOPMENT AGENCY

FOOD AND AGRICULTURE ORGANIZATION
THE UNITED NATIONS

Bujumbura, August 1993

PREFACE

The Research for the Management of the Fisheries on Lake Tanganyika project (Lake Tanganyika Research) 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).

This project aims at 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 will be also 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 buildup of effective coordination mechanisms to ensure full collaboration between the Governments concerned.

Prof. O.V. LINDQVIST
Project Scientific Coordinator

Dr. George HANEK
Project Coordinator

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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 working papers **(GCP/RAF/271/FIN-WP)** related to more specific field and thematic investigations 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)** or French **(Fr).**

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RESEARCH FOR THE MANAGEMENT OF THE FISHERIES ON LAKE TANGANYIKA
GCP/RAF/271/FIN

GCP/RAF/271/FIN/TRAM/16

Report of Travel to Rome, Italy (17-20.01.1993)

by

George HANEK
Project Coordinator

GCP/RAF/271/FIN.10

cc: Doeff, FIOA
Kapetsky, FIRI
Fitzpatrick/Turner, FIIT
Everett, FIP
Lindqvist/Mö1sä, Kuopio
Mannini, Kigoma
Plisnier, Mpulungu
Chrono
Diary:Hanek

1. INTRODUCTION

1.1 Objective

The objective of this short visit was to meet with Project's Operations Officer, Subject Matter officer and other officers in FAO/HQ in order to initiate and/or follow up on a number of technical and operational matters.

1.2 Itinerary

	Arrival	Departure
Nassau (from home leave)		16.01.93
Rome	17.01.93	20.01.93
Bujumbura	21.01.93	

1.3 Persons met

Dr. W. Krone, ADG a.i. FID
Dr. Y. Kato, Director, FIO
Mr. N. Doeff, SPOO, FIOA
Dr. J.M. Kapetsky, SFRO, FIRI
Dr. C. Newton, Chief, FIDI
Mr. B.F. Dada, Director, FIP
Mr. G.V. Everett, SFPO
Mr. T. Fitzpatrick, Chief, FIIT
Mr. J.N.M. Turner, FIO, FIIT
Mr. E. Schwela, Chief, FIDX
Ms. *S.* Antonini, Equipment officer, FIDX
Mr. M. Mancini, Accounting Clerk, FIDX
Mr. L. Bellucci, Personnel Assistant, FIDX
Mr. L. Mallory, Purchasing officer, AFSP
Mr. R. Peled, Purchasing officer, AFSP
Me. E. Flanagan, Personnel officer, APPE/GS Field
Mr. K.R. Boe, Managing Director, Simrad S.r.l.

2. RESULTS

2.1 Operational Matters

A number of operational matters was treated as follows:

* budgetary revision F (=FINNIDA funding) was discussed and proposed (see Appendix 1);

* timing and a number of pending matters re: Finnish consultants for the first six months of 1993;

* grading of project's GS personnel was discussed; this matters was taken further with Ms. Flanagan and

eventually agreed that the grades proposed by AFPE will be accepted;

* EOD of Kurki has been confirmed and arrangements made to ensure her briefing in both Bujumbura and Dar es Salaam; the need for additional APO's (one of whom should be francophone) has been stressed.

2.2 Technical Matters

Three main aspects were treated as follows:

* research vessel : two meetings with FIIT were held; it was agreed that all necessary documentation will be prepared and presented by FIIT at the upcoming meeting the FAO Contract Committee i.e. 22.02.1993. Project was directed to assist with obtaining (1) revised proposition of Chantier Naval du Burundi (see Appendix 2) and (2) statement showing that no other company is interested to proposed the same or similar alternative i.e. bare boat charter (see Appendix 3);

* acoustic equipment : were specified by consultant Mitson. Subsequently, a PR was prepared late in 1992 and sent to AFSP for processing. Thanks to Dr. Kapetsky's assistance (1) all pending matters were cleared with AFSP and (2) contact with Simrad S.r.l. Managing Director was made resulting in informing his home office that PR for acoustic equipment is to be placed; and

* GPS : specifications for GPS were prepared by Dr. Kapetsky and, through his contacts at Simrad, an appropriate model of GPS chosen.

3. CONCLUSIONS AND FOLLOW-UP

3.1 Modify project's budgetary revision F.
(Action: Project Coordinator)

3.2 organize programme and logistics for Finnish consultants.
(Action: Project Coordinator)

3.3 Provide FIIT with all required documentation for research vessel.
(Action: Project Coordinator)

3.4 Modify PR for acoustics equipment, including the required software.
(Action: Project Coordinator)

3.5 Place FPO for four GPS.
(Action: Project Coordinator)

GCP/RAF/271/FIN/TRAM/17

Report of Appointment Travel

to

Kigoma, Tanzania

through

Rome, Italy
(13.12 - 17.12.92)

Bujumbura, Burundi
(18.12 - 22.12.92)

Dar es Salaam, Tanzania
(15.01 - 22.01.93)

by

Piero Mannini
Fisheries Biologist

GCP/RAF/271/FIN.10

cc: Kato/Doeff, FIO
Kapetsky, FIRI
FAOR, Tanzania
Hanek, Bujumbura
Plisnier, Mpulungu
Lindqvist/Mölsä, Kuopio
Chrono
Diary: Mannini

1. INTRODUCTION

1.1 Objective

The purpose of the travel was the briefing on the previous assignment at RAF/87/099, and the entry on duty for GCP/RAF/271/FIN, Research for the Management of the Fisheries of Lake Tanganyika (hereafter 'LTR'), at the project sub-station in Kigoma (Tanzania). Therefore, briefings on technical and administrative matters related to LTR were held in Rome at FAO HQ, in Bujumbura at LTR HQ and, finally, in Dar es Salaam at FAO Representation, and Tanzania Fisheries Research Institute (TAFIRI).

1.2 Itinerary

	Arrival	Departure
Florence		13.12.92
Rome	13.12.92	17.12.92
Bujumbura	18.12.92	22.12.92
Kigama	22.12.92	15.01.93
Dar es Salaam	15.01.93	22.01.93
Kigoma	22.01.93	

1.3 Persons met

In Rome:

Mr. M. Doeff, SPOO, FIOA
Mr. L. Rijavec, POO, FIO
Mrs. B. Andrews-Tulli, Personnel Clerk, FIDX
Dr. J. Kapetsky, Senior Fishery Resources officer, FIRI
Mr. G. Padroni, Personnel officer, FIDX
Mr. L. Bellucci, Personnel Assistant, FIDX
Mr. F. Mancini, Accounting Clerk, FIDX
Mrs. G. Guidugli, Financial Officer, AFF
Mr. A. Bonzon, Fishery Planning officer, FIP
Mr. N. Bonucci, Legal Officer, LEG
Mr. M. Bellemans, Consultant, RAF/87/099
Mr. M. Lambeuf, FAO Expert, Fisheries Biologist
Mrs. J. Collins, Librarian, FIDI

In Bujumbura:

Dr. G. Hanek, Project Coordinator, GCP/RAF/271/FIM
Mr. E. Coenen, Biostatistician, GCP/RAF/271/FIN
Mr. R. Varayannis, Civil Engineer (SSA), GCP/RAF271/FIN
Mr. P. Kotilainen, APO-Fisheries Biologist, GCP/RAF271/FIN
Dr. D. Gréboval, Project Coordinator, RAF/87/099

Mr. G. Ssentongo, Fisheries Biologist, RAF/87/099

Mr. J. P. Marquet, CTA, BDI/89/019
Ms. T. Janssen, FAO Programme Officer
Mr. L. Risch, Project Manager, Project Belgium/CEGPL

In Dar es Salaam:

Mr. R. W. Fuller, FAOR
Ms. J. Backhouse, FAO Administrative Officer
Mr. J. Salminiitty, FAO Programme Assistant
Mr. J. Yonazi, FAO Programme Assistant
Mr. J. Bayona, Deputy Director, TAPIRI

In Kigoma:

Mr. K. I. Katonda, Director, TAFIRI Centre
All the TAFIRI Professional and Administrative Staff
Mr. G. Bowman, CTA, URT/066/NET
Mr. A. A. Kabeza, Manager, The National Bank of Commerce (NBC)
Mr. F. Barinakandi, Burundian Consul
Mr. S. Mturuya, Regional Immigration Officer
Mr. A. Shariff, Contractor

2. RESULTS

2.1 In Rome

Briefing was made on RAF/87/099 with the Project Operation Officer. Concerning the new assignment to GCP/RAF/271/FIN, administrative and personal matters were arranged. Mr. Doeff provided information about the present status of the project and Dr. Kapetaky on the recently finalized scientific work programme. Introduction to the imprest account system was made by Mr. Mancini.

2.2 In Bujumbura

Preamble to the LTR project dynamics was given by Dr. Hanek, project coordinator, covering its organization, the short and medium term work programme. Due to his departure on leave the briefing was completed by Mr. Coenen, project biostatistician. Various practical and operational aspects of LTR were discussed with special reference to the Kigoma sub-station.

The first shipment by boat from Bujumbura to Kigoma of the scientific equipment was organized. The second vehicle (Toyota Land Cruiser) assigned to the Tanzanian station was temporarily imported in Burundi and later transferred to Kigoma.

2.3 In Dar es Salaam

Due to the remoteness of the duty station from FAOR Office in Dar-essalaam many personal and administrative matters had to be sorted out once for all.

FAOR strongly discouraged to ship personal effects from Bujumbura to Kigoma by air via Dar es Salaam as being risky and very slow. Therefore, a new proper instructions were sent to AFS.

Concerning the imprest A/C to be opened at the NBC Branch of Kigoma, FAOR office had not yet received any instructions; consequently, an inquiry was sent to AFF. At the present, URT/066/NET is paying for basic running costs of the LTR sub-station. Main works (i.e. grid doors) have been done on credit by the local contractor.

TAFIRI Deputy Director, Mr. Bayona, was briefed on the present situation at the Kigoma centre. He was updated on the scientific equipment now available, the scientific work programme to be implemented, and on the forthcoming training sessions in Bujumbura and Kigoma (computer handling) for TAFIRI professional staff involved in the project activities.

Unluckily, no briefing was held with the Fisheries Department: the director, Mr. Maembe, was abroad and his deputy was on travel in the country.

2.4 In Kigoma

Personal installation in Kigoma has been up to now without too many problems. A few administrative matters were settled quickly. The small size of the town makes it easy to carry out the settling routine. shipment and safe delivery of personal effects is worrisome, also in consideration of the lack of many commodities in Kigoma.

Upon arrival of the first part of the scientific equipment, the required custom clearances were quickly sorted out. Temporary import permission was obtained for the new project vehicle whose national registration procedure has been now undertaken.

A meeting was held to introduce the FAO staff member to the professional counterparts. The work dynamics was proposed and the scientific programme and its requirements were outlined; several questions from TAFIRI staff were discussed.

In agreement with TAFIRI Centre direction the professional profiles of national staff were evaluated, and preliminary designation into the different sub-components of the scientific programme was made.

The security system at project station was checked in regard of the amount of valuable equipment to be installed, keeping in mind the past history of thefts of which the centre has been a regular target. When required, action was taken to improve the basic security (i.e. outside doors were equipped with iron grids, rehabilitation of external light system, etc.).

Burundian consul at Kigoma, Mr. F. Barinakandi, was briefed on the project and on the need of frequent travelling, between Tanzania and Burundi, of both the international and national

staff. Mr. Barikandi ensured his support to facilitate all administrative procedures concerning duty travels of the project personnel.

Finally, a very sad note has to be added. Mrs. C. S. Kajelelo, the Austria-trained national limnologist died on 3 February 1993. She was transferred from Kyela (Lake Nyassa) to join LTR Kigoma project station. Despite her 8 months difficult pregnancy and doctors' contrary advice, she decided to travel by car from Kyela via Dar es Salaam to Kigoma (more than

2,000 km of road most of which in bad condition). As soon as she arrived to Kigoma she was hospitalized to die a few days later. No words are enough to express the extreme sorrow which affected all LTR national and international staff.

3. CONCLUSIONS AND FOLLOW-UP

Short term activities can be scheduled as following:

3.1 To succeed in opening, as soon as possible, the imprest A/C at the National Bank of commerce (NBC) of Kigoma.

3.2 Completion of security improvement at TAFIRI premises.

3.3 Basic training of national staff on computer handling.

3.4 Installation of scientific equipment in the centre laboratories once they are equipped with external grid doors.

3.5 Visit to landing beaches neighbouring Kigoma for the purpose of commercial catch sampling.

3.6 Rearrangement of TAFIRI library.

3.7 Recuperation of various FAO-owned equipment still existing at TAFIRI or in care of URT/066/NET.

3.8 Selection and assignment for training of national staff in the subcomponents of the LTR scientific programme.

RESEARCH FOR THE MANAGEMENT OF THE FISHERIES ON LAKE TANGANYIKA
GCP/RAF/271/FIN

GCP/RAF/271/FIN/TRAM/18

Report of Travel

to

Lusaka, Zambia

and

Harare, Zimbabwe

(19.01.93 - 04.02.93)

by

Pierre-Denis Plisnier
Limnologist

GCP/RAF/271/FIN.10

cc: Kato/Doeff, FIOA
Kapetsky, FIR
Hanek, Bujumbura
Mannini, Kigoma
Lindquist/Mölsä, Kuopio
FAOR/Zambia
Chrono
Diary:Plisnier

GCP/RAF/271/FIN **February,1993**

1. INTRODUCTION

1.1 Objectives

The objectives of this mission were: in Lusaka - (I)to present the project GCP/RAF/271/FIN at the "Second Fisheries Research Officer's Seminar."; (2) to get the documents cleared from the customs for the two shipments of material sent to Mpulungu ; (3) to meet Dr. Mubamba to discuss on several projects matters (4) to buy material for project's contractor Sharrif and in Harare - (1) to give a presentation on limnology for the Technical Consultation of Project ALCOM on Small Waters Bodies.

1.2 Itinerary

	Arrival	Departure
Mpulungu		19.01.93
Mpika	19.01.93	20.01.93
Lusaka	20.01.93	24.01.93
Harare	24.01.93	31.01.93
Lusaka	31.01.93	03.02.93
Mpika	03.02.93	04.02.93
Mpulungu	04.02.93	

1.3 Persons met

in Lusaka

Mr. G.H. Mudenda, Director of Fisheries
Dr. R. Mubamba, Chief Fisheries Research Officer
Ms. N. Springer, Programme Officer, FAO/Zambia
Mr. B. Thomsen, Associate Programme Officer, FAO/Zambia
Mrs. V. Best, Administrative Officer, FAO/Zambia
Mr. P. van Zwieten, Fishery Biologist, DOF/Nchelenge
Ms. N. Aarnink, Rural Sociologist, DOF/Nchelenge
Mr. Milindi, Fisheries Research officer, Chilanga
Mr. Phiri, Fisheries Research officer, Mpulungu
Dr. E.Schwanck, Researcher, Chilanga
Mr. B. Chanda , Fisheries Research Officer, Lake Bangweulu
Mr. H. Ticheler, Biologist, Lake Bangweulu
Mr. P.C. Munandalu, Fisheries Research Officer, Lake Kariba
Mr. B. Musando, Fisheries Research Officer, Lake Kariba
Mr. M. Mbewe, Fisheries Research officer, Lake Itezhi-tezhi
Mr. C. Mpaka, Fisheries Research Officer, Lake Mweru-Wa-Ntipa

in Harare

Dr. J. Kapetsky, FIRI
Prof. 0. Lindquist, Kuopio

Dr. H. Mikkola, FAOR/Mozambique
Prof. D. Thys van den Audenaerde, Tervuren
Mr. A. Andreasson, ALCOM, Harare
Mr. A.H.Boyd, ALCOM, Harare
Ms. M. Mass, ALCOM, Harare
Ms. S. Sen, ALCOM, Harare
Mr. F. D. Silva, ALCOM, Harare
Mr. N. Mattson, ALCOM, Zomba, Malawi
Dr. B. Marshall, Harare
Dr. F. Vallet, Tripoli
Mr. H. van der Mheen, Harare
Dr. B.J. van Zyl, Namibia
Mr. A. Brooks, Mzuzu, Malawi
Mr. A. Fjaelling, Drottningholm,Sweden
Mr. W. Mhlanga, Kariba
Mr. D. Teerlinck, Harare

2. RESULTS

2.1 In Lusaka

- Presentation of the Project GCP/RAF/271/FIN at the "Second Fisheries Research Officer's Seminar." - a general presentation of the project has been given (general and long term objective of the project, realization and research Program. During the seminar, the participants have shown their interest in. Several persons know the project through its Newsletter which is well appreciated. Mr. Milindi has been met. He should replace soon Mr. Phiri in Mpulungu during the long absence of Mr Phiri who will probably attend a Master of Science program in Japan during 2,5 years.

On the way back to Lusaka from Harare: the followings activities have been carried on:

- Getting documents cleared from the customs for two shipments of material sent to Mpulungu- - finally, those documents have been obtained. The CUSTOMB in Mpulungu wanted them back before any future shipment. Since then, the documents have been forwarded through agency Zamcargo in Mpulungu.

- Meeting with Dr. Mubamba - several project matters have been dealt
with:

Some of the constructions in Mpulungu are stopped due to the nonavailability of the truck bringing material from Lusaka since 6 weeks. Dr. Mubamba told me that new tires were being bought very soon and the truck should proceed soon to bring material needed by Project's contractor Sharrif to complete the work.

Mr. Milindi will probably replace Mr. Phiri in Mpulungu. Mr. Mwape will come in Mpulungu as soon as the truck goes to

his actual station of Lake Mweru-wa-Nti a to move his shi ent to M lun u. A laboratorian will be probably hired. A solution must be found with Mr. Ndonna for the housing of this laboratorian in Mpulungu.

Dr. Mubamba will try to finish his report on historical data (meteorology, limnology, fish biology) of Lake Tanganyika before end of February. He will ask mr Lupikisha to do the Bame.

Others practical matters have been dealt with Dr. Mubamba (material to send to Mpulungu, radio, installation of extra lights for security, work permit for Sharrif...).

- Buying material for Mpulunqu's constructions - material needed has been brought to Mpulungu to allow Project's contractor Sharrif to continue his work (electricity mainly).

2.2 In Harare

Particiloation at the Technical Consultation on the enhancement of Small Waters Body Fisheries in southern Africa - after a request from the FAO Project ALCOM (GCP/INT/SEW GCP/RAF/277/BEL), a presentation has been prepared : "Aspects of Small Water Body morphometrics and limnology". During this technical consultation, useful contacts have been made with researchers Of several countries of southern Africa. It has also been possible to meet longer Dr. Kapetsky and Dr. Lindqvist to discuss in more on the research work of the LTR. Dr Lindquist provided several sampling bottles, papers and first prints Of satellites pictures of Lake Tanganyika; those were brought back to Mpulungu.

3. CONCLUSIONS AND FOLLOW-UP

Explanation on the project have been provided to the Fisheries Officers of Zambia. High interest has been shown by numerous persons of DOF.

The participation and presentation of a paper to a technical meeting in Harare has been made. Informal and useful contacts have been possible thanks to this meeting with persons directly involved with LTR Project (Dr. Kapetsky, Dr. Lindqvist) as well as with other persons involved with related lake ecosystems studies in Africa.

Concerning the follow-up of the contacts made during this travel, it can be pointed out the following:

3.1 Arrange moving and installation in Mpulungu of Mr. Milindi, Mr. Mwape and a probable laboratorian. This should be done as Boon as possible as the training programs are starting very soon (Action: Mr Ndonna, Dr. Mubamba)

3.2 Buy new tires and send the D.O.F. truck with material needed by Sharrif to Mpulungu (Action; Dr. Mubamba)

3.3. Provide historical data on meteorology, limnology, fish biology and fisheries statistics (Action: Dr. Mubamba, Mr. Lupikisha)

3.4 Contact Mr. Donna for the follow-up of the moving and installation of the new Fisheries Officers to come in Mpulungu (Action: Plisnier)

GCP/RAF/271/FIN/TRAM/19

Report of Appointment Travel

to

Kigoma, Tanzania

through

Rome, Italy
(06.-16.01.93)

Bujumbura, Burundi
(17.-24.01.93)

Dar es Salaam, Tanzania
(24.0l.-02.02.93)

by

Heini Kurki

APO-Biologist

GCP/RAF/271/FIN.10

cc: Kato/Doeff, FIO
Kapetsky, FIRI
FAOR, Tanzania
Hanek, Bujumbura
Plisnier, Mpulungu
Lindqvist/Mölsä, Kuopio
Chrono
Diary: Kurki

1. INTRODUCTION

1.1 Obiectives

1) in FAO Headquarters Rome, to meet the personnel of DDFR and administrative personnel of FIRI; to receive an introduction on activities of FAO headquarters and Fisheries Department on administrative and technical formalities and to be briefed on FAO staff member entitlements and duties;

2) in Bujumbura to be briefed on the activities of GCP/RAF/271/FIN project, Research for the Management of the Fisheries of Lake Tanganyika (hereafter 'LTR'), to meet the personnel of other regional and national projects cooperating closely with LTR;

3) in Dar es Salaam to meet FAO Resident Repsentative; to comply with all personnel formalities; to be introduced to TAFIRI and Fisheries Department Headquarters and Finnish Embassy;

4) in Kigoma to be introduced to TAFIRI personnel and activates of Kigoma substation for LTR.

1.2 Itinerary

	Arrival	Departure
Mikkeli		06.01.93
Helsinki	06.01.93	06.01.93
Rome	06.01.93	16.01.93
Bujumbura	17.01.93	24.01.93
Dar es Salaam	24.01.93	02.02.93
Kigoma	02.02.93	

1.3. Persons met

In Rome

Dr. Y. Kato, Director of Operations, FIO
Mr. M. Doeff, Senior Project Operations officer, FIOA
Dr. J. Kapetsky, Senior Fishery Resources Officer, FIRI
Mr. D. Die, Fishery Resources Officer, FIRI
Ms. L. Zappalenti, Recruitment Officer DDFR
Mr. R. Patterson, Programme Officer
Ms. I. Prince-Paraiballi; AGRIS-CARIS Coordinating Centre
Mr. G. Padroni, Personnel Officer, FIDX
Ms. A. Andrews-Ingretolli, Personnel Clerk, FIDX

Mr. L. Belucci, Personnel Assistant, FIDX
Ms. J. Collins, Librarian, Fisheries Branch Library
Ms. G. Guidugli, Officer, Financial Services Division

In Bujumbura

Dr. G. Hanek, Project Coordinator GCP/RAF/271/FIN
Mr. E. Coenen, Fishery Biostatistician GCP/RAF/271/FIN
Mr. A. Kiyuku, Director of Fisheries
Mr. P. Kotilainen, APO-Biologist GCP/RAF/271/FIN
Ms. M. Heinonen, Librarian GCP/RAF/271/FIN
Dr. L. Risch, Manager Project Belgium CEPGL
Dr. L. de Vos, Biologist Project Belgium CEPGL
Mr. J.P. Marquet CTA, BDI/89/019
Ms. E. Legrand, APO BDI/89/019

In Dar es Salaam

Mr. R. Fuller, FAOR
Mr. *S.* Najam, FAOR Deputy
Ms. J. Backhouse, FAO Administrative officer
Mr. J. Yonazi, FAO Programme Assistant
Ms. H Biseth, FAO APO-Programme Officer
Mr. J. Salminiitty FAO APO-Programme Officer
Mr. J. Bayona, Director of TAFIRI, Kunduchi
Mr. L. Nhwani, Acting Director of Research, TAFIRI, Kunduchi
Mr. T. Maembe, Director of Fisheries Department
Mr. R. Hoza, Fisheries officer, Fisheries Department
Ms. V. Mushi Fisheries Officer, Fisheries Department
Mr. W. Haule Senior Fisheries Officer, Fisheries Department
Mr. A. Rogers, Chief Technical Adviser, GEF-project
Mr. A. Nikandiwe, Head of the Department of Zoology, Univ of Dar es Salaam
Mr. K.Karanko, Finnish Ambassador in Tanzania, Embassy of Finland

In Kigoma

Mr. P. Mannini, Fisheries Biologist, GRP/RAF/271/FIN
Mr. K. Katonda, Director of TAFIRI
All the TAFIRI Professional and administrative staff
Mr. G. Bowman, CTA, URT/066/NET/

2. RESULTS

2.1. Briefing in FAO Headquarters, Rome

General briefing at FAO Headquarters included updating my personal file, obtaining visas for Laiseez-Passer, introduction to the services of David Lubin Memorial Library and introduction to FAO activities.

At the Fisheries Department of FAO I finalized my administrative and financial matters.

Dr. Kato welcomed me and pointed out the importance of the LTR. Mr. Doeff briefed me on the recent development of LTR and gave me the published reports of LTR. Dr. Kapetsky gave me a good overview of the project and briefed me on the living conditions in Kigoma. Upon Dr. Kapetsky's advice I went through several files of LTR.

Ms. Collins gave me an introduction on the services of Fisheries Branch library.

2.2. Briefing in Bujumbura

Upon arrival I was welcomed by Mr. Coenen, biOstatistician of LTR, who introduced me to Mr. Kiyuku, Director of Fisheries Department as well as two other fisheries projects (BDI/89/019 and Project Belgium/CEPGL) operating in Burundi.

I was as well introduced to the Documentation Centre of LTR.

Upon his arrival from leave the project Coordinator Dr. Hanek welcomed me to join LTR and briefed me about the circumctances in Kigoma.

During my stay in Bujumbura I went through various reports and scientific papers concerning different aspects of Lake Tanganyika ecosystem.

2.3. Briefing in Dar es Salaam

In Dar es Salaam FAO Representative Mr. Fuller welcomed me to join FAO in Tanzania. With Ms. Backhause I did the arrangements concerning the payment of my salary and clearance of my personal effects.

The Finnish Ambassador in Tanzania, Mr. Karanko, welcomed me to Tanzania and gave me some information of kiswahili courses held in Arusha.

I was introduced to Fisheries Department and TAFIRI and to the officers who had been dealing with the clearance of my papers.

I also met Mr. Rogers, the Chief Technical Advisor for GEF-project. Upon his advice I met Professor Nikundiwe at the University of Dar es Salaam, Department of Zoology. Unfortunately I could not meet the scientist involved in zooplankton studies due to his absence.

2.4. Briefing in Kigoma

Fisheries Biologist for LTR, Mr. Mannini, welcomed me to Kigoma and introduced me to the Director of TAFIRI, Mr. Katonda, and other personnel of TAFIRI. I was also briefed on the role and recent progress of the Kigoma station. I also met Mr. Bowman, CTA for the project URT/066/NET.

2.5. Initial duties performed

Together with TAFIRI staff we started sorting out and re-arranging the literature available at the station. Moreover I helped the national staff on computer handling. I made also practical arrangements for consultancy on hydrodynamics in Kigoma.

3. CONCLUSIONS AND FOLLOW-UP

3.1. Complete the work in the library together with TAFIRI staff.

3.2. Prepare the initial three months Arrival Report as required by DDFR.

3.3. Installation in Kigoma.
(Action: APO-Biologist)

RESEARCH FOR THE MANAGEMENT OF THE FISHERIES ON LAKE TANGANYIKA
GCP/RAF/271/FIN

GCP/RAF/271/FIN/TRAM/20

Report of Travel

to

Kigoma (Tanzania)

and

Mpulungu (Zambia)
(28.02. - 11.03. 1993)

by

Pekka Kotilainen
APO - Fisheries Biologist

GCP/RAF/271/FIN.10

CC. Kato/Doeff, FIO
Kapetsky, FIRI
Lindqvist/Mölsä, Kuopio
Chrono
Trams
Diary: Kotilainen/Huttula/Peltonen/Nieminen

GCP/RAF/271/FIN **April, 1993**

1. INTRODUCTION

1.1 Objectives

The objectives of the travel were: (1) to install anemometers an water level stations in Kigoma and Mpulungu field stations, (2) t install two under water thermistor chains on the lake; one in th northern and another one in the southern main basins of the Lake plu one combined weather station and thermistor chain attached to floating buoy, outside of Mpulungu and (3) to conduct preliminar hydrodynamic measurements with STD-sonde on the lake. The mission wa conducted on M/V Mathieu and on project's R/V Echo.

1.2 Itinerary

	Arrival	Departure
Bujumbura		28.02.93
Kigoma	29.02.93	03.03.93
Mpulungu	05.03.93	07.03.93
Kigoma	09.03.93	10.03.93
Bujumbura	11.03.93	

1.3 Persons met

in Kigoma

Mr. P. Mannini, Expert, Limnologist, GCP/RAF/271/FIN
Ms. H. Kurki, APO, Limnologist, GCP/RAF/271/FIN
Mr. I. Katonda, Director, TAFIRI Centre, Kigoma
Mr. D. Chitambwebwa, Scientist, TAFIRI
Mr. M. Mabula, Senior Meteorological officer, Meteorological Station of Kigoma Airport
Mr. V. Shayo, Director, Training School in Meteorology
Mr. N. Challe, Technician, TAFIRI
Mr. G. Mabalaza, Manager, Tanzanian Railway Corporation, marine Division

in Mpulungu

Dr. P.-D. Plisnier, Limnologist, GCP/RAF/271/FIN
Mr. C. Ndonna, Provincial Fisheries Development Officer
Mr. H. Phiri, Fisheries Research Officer
Mr. D. Kabakwe, Fisheries Development Officer
Mr. T. Milindi, Fisheries officer
Mr. M. Whiteson, Manager, Zambian Cargo Ltd.

2. RESULTS

2.1 Installations in Kigoma

During the first visit to Kigoma a suitable place for the automatic water level station was found in the compound of Tanzanian Railway Corporation and permission for installing the

station was obtained from there. The installation was conducted by the consultants and the place next to a pier in the restricted and well guarded area seems to be safe and very representative for measuring the changes in water level. Also an anemometer was installed on the roof of the project's guest house. Mr. Huttula introduced the preliminary sampling program for the current cylinder measurements and schedule in hydrodynamics i.e. temperature, and wind measurements (direction and speed) to the TAFIRI personnel in Kigoma. Before delivering the laboratory equipment to Kigoma Centre, customs declaration formalities were fulfilled. R/V Echo had to be left in Kigoma because of problems in the engine cooling system and non-availability of spare parts.

2.2 Installation of the thermistor chain outside of Kigoma

A one-day trip to the lake was conducted to install the underwater thermistor chain in the northern main basin. (The installation procedure is described in detail by Huttula, Peltonen and Nieminen (1993) in field manual FM/02 on hydrodynamics) . A diver and a small boat were hired. Fuel barrels for M/V Mathieu were loaded in Kigoma.

2.3 Installations in Mpulungu

After arrival in Mpulungu, laboratory equipment for the station was unloaded from M/V Mathieu and the customs declaration was started. An anemometer and a water level station were installed on the roof of the project's house and onto the pier of the project, respectively. Mr. Huttula introduced to the counterparts in Mpulungu the preliminary sampling program of the current cylinders measurements and a schedule in hydrodynamics i.e. temperature, and wind measurements. Also, discussions were held about the follow-up in the near future concerning the sampling and unloading the data of the combined weather station-thermistor chain during the next mission on the lake.

2.4 Installation of a thermistor chain in the southern main basin

On the way back to Bujumbura via Kigoma, the second thermistor chain was installed. No diver was needed. (The installation procedure is described in detail by Huttula, Peltonen and Nieminen (1993) in field manual FM/02 on hydrodynamics).

2.5 Activities in Kigoma

Before returning to Bujumbura, the expedition stayed one more day in Kigoma to discuss about the future program and repairing R/V Echo. Also, Mr. Huttula, Katonda, Mannini and Kotilainen visited the Meteorological station at Kigoma Airport. They were introduced to data collection procedures of the station and it was decided to establish some co-operation

between the Meteorological and the project's Kigoma stations. Through this co-operation valuable historical and up-to-date data should be available in the future. A visit was also paid to the Meteorology Training school in Kigoma.

2.6 Measurements during the mission

Some STD-sonde measurements (i.e. pressure, temperature, dissolved oxygen and conductivity) were conducted on the lake during the sailing. Malfunction of some sensors of the sonde was noticed. It was decided to send the sonde back to the manufacturer for the check-up and/or repairs.

3. RECOMMENDATIONS

3.1 Delivery of the current cylinders to the lake stations (Action: Expert and APO in Bujumbura or consultants in hydrodynamics).

3.2 Start the measurements in hydrodynamics (Action: Experts, APOs and counterparts in Bujumbura, Kigoma and Mpulungu).

3.3 Follow-up/supervision of the measurements (Action: Expert and APO in Kigoma, Expert in Mpulungu).

3.4 Send the STD-sonde back to manufacturer (*Action*: Personnel in Bujumbura).

3.5 Prepare the next mission in May (Action: Consultants in hydrodynamics, Personnel in Bujumbura and Kigoma).

Following improvements for the next mission in May should be considered:

i) An external winch instead of belt-drive winch, which is using the main engine power, to simplify the thermistor chain lifting process. Partly this is also a question of security on board;

ii) Instead of R/V Echo, a smaller or even two assistant boats (Zodiacs) are essential in searching and lifting process of the thermistor chains;

iii) A complete box of tools should be purchased;

iv) A diver capable to dive down to 30 m, should be available;

v) Because of the rather long distances between the ports and possibly time consuming work on the lake, more storing and cooling capacity for foodstuff is needed on the boat.

3.6 Check regularly the weather station and water level stations in Bujumbura, Kigoma and Mpulungu
(Action: Experts and APO in Bujumbura, Kigoma and Mpulungu).

3.7 Finalizing customs declarations for the equipment delivered to Kigoma and Mpulungu.
(Action: Expert and APO in Kigoma and Expert in Mpulungu).

RESEARCH FOR THE MANAGEMENT OF THE FISHERIES ON LAKE TANGANYIKA
GCP/RAF/271/FIN

GCP/RAF/271/FIN/TRAM/21

Report of Travel

to

Bujumbura, Burundi

by

Pierre-Denis Plisnier
Limnologist

GCP/RAF/271/FIN.10

cc: Kato/Doeff, FIO
Kapetsky, FIRI
FAOR, Tanzania
FAOR, Zambia
Hanek, Bujumbura Lindqvist/Mölsä, Kuopio
Trams
Chrono

1. INTRODUCTION

1.1 Objective

The purpose of the travel was to participate in a LTR's training course in plankton biology (third sub-component of the Project) together with counterparts and international LTR staff of Burundi, Tanzania, Zaïre and Zambia. The training was given by Dr.Ilpo Vuorinen.

1.2 Itinerary

	Arrival	Departure
Mpulungu		26.03.93
Kigoma	28.03.93	28.03.93
Bujumbura	29.03.93	12.04.93
Kigoma	13.04.93	14.04.93
Mpulungu	16.04.93	

1.3 Persons met

Dr. G. Hanek, Project Coordinator, GCP/RAF/271/FIN
Mr. E. Coenen, Biostatistician, GCP/RAF/271/FIN
Mr. R. Varayannis, Civil Engineer (SSA), GCP/RAF/271/FIN
Mr. P. Kotilainen, APO-Fisheries Biologist, GCP/RAF271/FIN
Ms. H. Kurki, APO-FisherieB Biologist, GCP/RAF271/FIN
Dr. E. Aro, Fish biology consultant
Dr. I. Vuorinen, Plankton biology consultant
Dr. F. Roest, Statistics consultant
Mr. J. P. Marquet, CTA, BDI/89/019
Dr. L. Risch, Project Manager, Project Belgium/CEPGL
Dr. A. Vandenlannoote, Limnologist, Project Belgium/CEPGL

2. RESULTS

During the course, theoretical and practical overviews of the main species of zooplankton in Lake Tanganyika were given by Dr. Vuorinen.

Concerning the theoretical aspects, different hypothesis explaining the presence or absence of some species were presented as well as the hypothesis for the vertical migration of zooplankton in Lake Tanganyika.

on the practical aspects of the training, we can mention: sampling on the lake with R/V Echo (up to 80 meters), analysis of the sample (qualitative and quantitative) with inverted microscope and binoculars.

A PC training was held (MS DOS, WINDOWS and EXCEL 4.0) and data were entered in EXCEL spreadsheet for processing.

Simultaneous translation of the english course was given to the french speaking participants as well as introduction to DOS, WINDOWS and EXCEL software.

Apart from the training exercices, a common program (provisional) between zooplankton sampling and limnology was set up with Dr. Vuorinen and myself. This program sampling is attached as appendix 1. It mainly includes weekly samples (up to 120 meters or more) and a monthly 24h cycle (up to 300 meters or more) to compare variation of hydrographical parameters. It will also allow the comparison between dry and rainy season, moon and no moon nights. Three repetitions for each combination should be done: the total number of 24 h cycles is 12 per year. More details will be provided in the limnology field manual.

This training exercise gave me the occasion to check the Hach Kit of Bujumbura. Several problems were found for the equipment received (missing pages in manual, (140 pages 1) , absence of french manual etc...) which are on the way to be solved. The main concern is the absence or low supply of some chemicals and the low accuracy of some methods (phosphates...

3. CONCLUSIONS AND FOLLOW-UP

3.1 Training has been provided and all information needed to start the sampling of zooplankton was given. Counterparts are ready to start the work when all necessary equipment (boat...) will be ready
(action: Roger Varyiannis).

3.2 A provisional program common for zooplankton sampling and limnology sampling has been drafted.

3.3 Hach kit has been checked for Bujumbura Station and several problems pointed out. Some have been solved. A list of supplementary reactive and equipment necessary for the limnological component will soon be available
(action: Limnologist)

GCP/RAF/271/FIN/TRAM/22

Report of Travel

to

Bujumbura, Burundi
(29.03.93-09.04.93)

by

Piero Mannini
Fisheries Biologist

GCP/RAF/271/FIN.10

cc: Kato/Doeff, FIO
Kapetsky, FIRI
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Hanek, Bujumbura
Plisnier, Mpulungu
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Aro, Helsinki
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Chrono
Diary: Mannini

1. INTRODUCTION

1.1 Objective

The purpose of the travel to Lake Tanganyika Research (LTR) HQ in Bujumbura was to attend and assist at the training course on fish biology, held by Mr. E. Aro, from 29 March to 9 April 1993. At the same time, a similar training on zooplankton biology, held by Dr. I. Vuorinen, took place. This aide-mémoire deals only with issues related to fish biology.

The training session mainly focused on the biology of lake Tanganyika pelagic fish stocks, i.e. the two clupeids: *Stolothrissa tanganicae* and *Limnothrissa miodon*, and the four centropomid species: *Lates stappersii*, *L. mariae, L. angustifrons*, and *L. microlepis*. Actually, these species make the bulk of the pelagic stock biomass and are the target species of LTR research work on fish population dynamics and biology.

An important result to be achieved during the course was to establish standard data collection systems for the four riparian countries (Burundi, Tanzania, Zambia and Zaïre) which participate in LTR project. This is the necessary starting point to acquire large amounts of comparable data in order to accomplish a comprehensive understanding of the lake's ecosystem dynamics.

1.2 Itinerary

	Arrival	Departure
Kigoma		29.03.93
Bujumbura	29.03.93	10.04.93
Kigoma	10.04.93	

1.3 Persons met

Dr. G. Hanek, LTR Coordinator
Mr. E. Coenen, Biostatistician
Mr. E. Aro, Consultant
Dr. I. Vuorinen, Consultant
Mr. F. Roest, Consultant
Dr. P.-D. Plisnier, Limnologist
Mr. P. Kotilainen, APO Fisheries Biologist
Mr. R. Varayannis, Civil Engineer (SSA)
All the training course participants

2. RESULTS

The main objective of the course was to train national biologists in data collection of fish populations from pelagic commercial catch. Data collection procedures were proposed by Mr. E. Aro, course leader, and eventually modified following the general discussion to fit better with the different field situations around the lake. Technical and operational details are reported in LTR field manual "Guidelines for sampling pelagic fish catches on Lake Tanganyika" (GCP/RAF/271/FIN-FM 04).

The expected results from data processing and analysis were outlined. The theoretical implications and assumptions, which are behind the methods, could not be properly developed and discussed due to time constraints for such a wide topic as fish population biology. This will call for on-job-training to provide a complete understanding of the methodologies on which the research work is based.

It is generally known in fishery science that data from commercial catch are affected by some bias but still, once such limitation is taken into account, they provide valuable information at low cost. Moreover, results from commercial catch sampling and analysis will be the necessary completion to the findings obtained by the execution of the foreseen regular experimental surveys.

While waiting for the start of the scientific fishing campaigns, the work on fish biology based on commercial catch sampling will allow the preliminary identif ication of trends and problems due to the biological characteristics of the pelagic stocks.

Regular lakewide data collection for the whole complex of scientific activities of LTR will start at the end of the present preparatory phase of the project (i.e. end of June - beginning of July 193). Therefore, it is considered necessary to carry out, in all the project stations, some trial sampling before that time. This will allow for testing the real work routine, avoiding mistakes, and identifying possible unexpected problems.

It is inevitable that the lake's extension determines deficiencies in the area coverage of commercial sampling. Such a gap can hardly be solved; lack of efficient communication systems around the lake, distances involved, constraints in means and trained personnel are major obstacles. However, an ef fort was made to increase the number of sampling stations to improve representativeness of the data collection scheme. Even if such stations will be in position of providing only some of the required data, at least, they will ensure basic weekly information on trends of catches and fish population structure.

3. CONCLUSIONS AND FOLLOW-UP

3.1 Perform preliminary trial sampling in order to attain efficient field and laboratory work routine. This activity has to be carried out for all the scientific subcomponents of LTR work programme.

3.2 Establish a sampling station in Kipili (south of Kigoma, Rukwa region). Action has already been taken and Fisheries Department staff locally available (Mr. N.A. Nzota) has been contacted. Basic training for Mr. Nzota has to be provided at Kigoma LTR station.

3.3 Harmonize of fish biology work at all the other LTR research activities to reach optimal use of means and laboratory facilities.

GCP/RAF/271/FIN/TRAM/23

Report of Travel to Kigoma and Rukwa Regions (Tanzania) (12-19.04.93)

by

E. Coenen
Biostatistician

GCP/RAF/271/FIN.10

cc : Kato/Doeff, FIO
Kapetsky, FIRI
Katonda, TAFIRI, Kigoma
Mannini, LTR, Kigoma
FAOR, Tanzania
Lindqvist/Mö1sä, Kuopio
Hanek: info
Chrono
Trams

1. INTRODUCTION

1.1 objective

The objectives of this mission were (1) to make arrangements for the statistical workshop (Bujumbura, 2630.07.93) on Lake Tanganyikafs fisheries statistics; (2) to meet and discuss with the Regional/District Fisheries Officers of Kigoma and Sumbawanga Regions about the operational aspects and problems encountered during collection/ compilation/analysis of fisheries statistics for Lake Tanganyika; (3) to check the possibility of having an additional project substation for sampling purposes at Kipili landing (Sumbawanga Region).

1.2 Itinerary

	Arrival	Departure
Bujumbura		12.04.93
Kigoma	12.04.93	14.04.93
Mpanda	14.04.93	15.04.93
Sumbawanga	15.04.93	16.04.93
Mpanda	16.04.93	17.04.93
Kigoma	17.04.93	19.04.93
Bujumbura	19.04.93	

Due to delays in the arrival of the ferry Mwongozo, the whole mission was done by project car. Mission members included the Director of TAFIRI in Kigoma, LTR's fisheries biologist based in Kigoma and myself.

A continuation of this mission to Lusaka and Mpulungu (Zambia) was cancelled due to two consecutive cancellations of flight connections with Zambia.

1.3. Persons met

- Mr. K.I. Katonda, Director, TAFIRI Centre, Kigoma
- Mr. P. Mannini, Fisheries Biologist, LTR, Kigoma
- Ms. H. Kurki, APO LTR, Kigoma
- Mr.J.M. Lukona, Regional Fisheries Officer, Kigoma Region,

In Kigoma
- Mr. R.S. Cherehani, Assistant, Regional Fisheries Office, Kigoma Region
- Mr. L. Nonde, Officer I/C Statistics, District Fisheries Office, Kigoma Region
- Mr. P.I.A. Mwakyusa, District Fisheries Officer, Mpanda, Sumbawanga Region
- Mr. B.T. Simba, Assistant, District Fisheries Office, Mpanda
- Mr. S.J. Lutenga, District Natural Resources Officer, Mpanda
- Mr. E.J. Katembo, Regional Fisheries Officer, Rukwa Region, Sumbawanga

- Mr. S. Mwambigija, Officer I/C Statistics, Regional Fisheries Office, Sumbawanga
- Mr. L.M. Mkumbija, District Fisheries Officer, Sumbawanga
- Mr. A.A. Mwasajone, Regional Development Director, Sumbawanga

2. RESULTS

Two administrative regions are bordering Lake Tanganyika in Tanzania: Kigoma Region (regional headquarters being Kigoma) in the north and Rukwa Region in the south (regional headquarters being Sumbawanga). Both regions possess 3 districts and 4 out of the six districts have beach recording stations (17 in total) on Lake Tanganyika:

- Kigoma Region:
  - Kigoma District: 11 stations
  - Kasulu District (not bordering the Lake)
  - Kibondo District (not at the Lake)
- Sumbawanga Region:
  - Mpanda District: 1 station
  - Nkansi District: 4 stations
  - Sumbawanga District: 1 station

Each Region has a Regional Fisheries Officer and (a) District Fisheries Officer (s) , most of the time with one or more assistants; and a number of supervisors and beach recorders at the different stations (37 in Kigoma Region; 9 in Rukwa Region).

Road connections in and between these two regions are very poor. The mission members travelled daily by road between 7 and 11 hours at an average speed of about 30 km/h and covered more than 1000 km of very bad roads.

The Regional and District Offices of Sumbawanga Region are located at several hours of drive by car from the nearest accessible landing site or station (Kasanga) at the Lake.

2.1. Kigoma Region

On 13.04.93, a meeting was held at TAFIRI, Kigoma, on the fisheries statistical system for Lake Tanganyika in Kigoma Region. Present were the Regional Fisheries Officer and his assistant, the Officer in charge for statistics of the Kigoma Fisheries District Office, the Director of TAFIRI Kigoma, LTR's Kigoma based fisheries biologist and myself (the Kigoma District Fisheries Officer apologized for his absence).

After a briefing on the project, a lengthy discussion was held on the fisheries statistical system in Kigoma Region. Subjects discussed comprised institutional aspects, the systems used in collecting/processing of annual frame and continuous catch/effort data, an assessment of these systems and the recent changes made, the problems encountered, and a briefing on the

planned workshop on fisheries statistics coordination and standardization next July.

LTR's newsletters and publications were distributed for info/comments and the need for close collaboration in the future was stressed. The Officers were also requested to correct/update the information of the 1992 Fisheries Directory for Lake Tanganyika.

In the afternoon, urgent operational and administrative matters for LTR's Kigoma station were dealt with and preparations were made for the trip to Sumbawanga.

2.2. Rukwa Region

2.2.1 Mpanda District

On 14.04.93, in the early morning, the mission left Kigoma by road for an 11 hours trip through Uvinza to Mpanda, where one of the 3 Fisheries District Offices is situated. The next morning, before leaving to Sumbawanga (7 hours trip), a meeting similar to the one in Kigoma (see 2.1) was held with the Mpanda District Fisheries Officer and his assistant, responsible for only 1 beach recording station (Karema), manned by 2 beach recorders collecting fisheries statistics at Ikola and Karema landing beaches. The mission also paid a courtesy call to the Mpanda District Natural Resources Officer, before taking the road southwards through Nkansi District up to the final destination, Sumbawanga.

2.2.2 Nkansi District

This District possesses 4 beach recording stations (Kirando, Kipili, Kizumbi, Kala). Due to time constraints, the District Fisheries Office in Namanyele, nor the Kipili station could be visited.

2.2.3 Sumbawanga District

On 16.04.93, in the morning, a meeting similar to the ones in Kigoma and Mpanda (see 2.1 and 2.2.1) on the prevailing fisheries statistical system was held with the Regional Fisheries officer of Sumbawanga Region, his Officer in charge of statistics, the Sumbawanga District Fisheries Officer and the mission members. The Regional Fisheries Officer was invited to attend the Workshop on Fisheries Statistics in Bujumbura from 2630.07.93. It was also agreed that the project would write an official request to the Regional Development Director of Sumbawanga to obtain the approval to use Mr. Nzota, based at Kipili station, to be involved in the project's sampling program for Rukwa Region at Kipili station. This matter was also raised during a courtesy call to the Regional Development Director of Sumbawanga.

At 11.00 hours, the mission left for the return journey to Kigoma, where they arrived on 17.04.93 in the evening hours.

3. CONCLUSIONS AND FOLLOW-UP

3.1 Conclusions

During this first mission concerning fisheries statistics for Lake Tanganyika in the Kigoma and Rukwa Regions (Tanzania), the following major conclusion can be drawn:

Although the theoretical concert of the f isheries statistical systems (Frame and Catch Assessment Surveys) are rather well designed (adaptations from Bazigos, 1973), the Practical execution of the surveys however shows a lot of def iciencies and these are mainly due to lack of financial means/logistics; to a complicated administrative system; to communication problems at all levels; to lack of supervision and of proper training for beach recorders; to lack of feedback from the Fisheries Headquarters in Dar es Salaam; etc.

The characteristics of the above mentioned deficiencies of the present statistical system can be summarized as follows:

- financial constraints are noticeable at all levels : no working budgets; low salaries, very often paid with several months of delay; non payment of any kind of allowances (mission, transport, overtime, etc.);

- lack of logistics : no boats for supervision or frame survey execution; no cars/motorbikes/bicycles (except for 2 motorbikes at the Regional Fisheries Office and a few bicycles at certain stations) ; lack of statistical forms, weighing scales, raincoats, boots, etc.;

- complicated administrative system : the Regional Fisheries Office and its staff are part of the Central Government (Fisheries Division) while the District Offices and beach stations'staff belong to the Local Governments (District Councils). So, the Director of Fisheries has power over the Regional Fisheries Of f icers but not over the District Of f ices or below. On top of that, District and Town Councils oblige the fisheries staf f of the District Of f ices and beach stations to collect all kinds of taxes;

- bad communication system not only because of the complicated administrative system but also due to big distances on bad roads; no transport means (public or service vehicles) ; no transport allowances, etc. It is therefore not astonishing that monthly statistical reports are sometimes delaying two to f our months bef ore arriving at the District or Regional Of f ices and even more before arriving at the Fisheries Statistics Headquarters in Dar es Salaam where all the national fisheries statistics are processed by computer.

- lack of supervision at all levels, due to absence of transport means, transport allowances and bad roads, is probably one of the main reasons that the practical execution of the statistical surveys is inefficient; especially the beach recorders (very often primary school leavers) , who are supposed to collect I

real I data, are appointed without receiving hardly any training in fisheries statistics. Add to that the fact that nobody hardly ever visits their station for any kind of supervision and it will therefore astonish nobody that the practice of inventing or produce 'cooked' data is rampant, the final result being that final estimates of catch, effort, etc. are far from reliable.

- lack of feedback from the Fisheries Headquarters is probably also one of the main reasons that the field staff is demoralized and demotivated; even the Annual Fisheries Statistics Reports, which are produced with several years of delay, are rarely distributed among the field offices.

A detailed assessment of the statistical systems in the four countries bordering Lake Tanganyika will be given in one of the future LTR's Technical Documents.

3.2 Follow-up

write letter to the Regional Development Director of Sumbawanga to obtain approval for Mr. N.A. Nzota of Kipili station to be involved in LTR's sampling programme; after approval, organize training in fish biology sampling and data analysis for him in LTR Kigoma station;

(Action: Mannini and Katonda, LTR Kigoma)

prepare workshop on fisheries statistics coordination and standardization next July (send workshop announcement to respective Directors of Fisheries; contact Mr. Lupikisha (Chilanga, Zambia) with detailed instructions on preparatory work for above workshop);

(Action: Coenen, LTR Bujumbura)

continue collection of information on present fisheries statistical systems of four riparian countries of Lake Tanganyika in view of preparation LTR Technical Document on assessment of their statistical systems.

(Action: Coenen, LTR Bujumbura)

GCP/RAF/271/FIN/TRAM/24

Report of Travel

to

Bujumbura, Burundi

29.03.-10.04.1993

by

Heini Kurki

APO-Biologist

GCP/RAF/271/FIN.10

cc: Kato/Doeff, FIO
Kapetsky, FIRI
FAOR, Tanzania
Hanek, Bujumbura
Plisnier, Mpulungu
Lindqvist/Mö1sä, Kuopio
Vuorinen, Turku
Chrono
Diary: Kurki

1. INTRODUCTION

1.1. Objectives

The objectives of this mission to Bujumbura Lake Tanganyika Research (LTR) HQ were: (1) to attend on a course on zooplankton biology for national researchers from four stations (Uvira, Zaire; Bujumbura, Burundi; Kigoma, Tanzania and Mpulungu, Zambia); (2) assist the course leader, consultant Dr. Vuorinen, in conducting the training course; and (3) discuss the zooplankton sampling programme with Dr. Vuorinen. At the same time the course in fish population biology was held but this travel report deals only with zooplankton training.

1.2. Itinerary

	Arrival	Departure
Kigoma		29.03.1993
Bujumbura	29.03.1993	10.04.1993
Kigoma	10.04.1993	

1.3. Persons met

Dr. G. Hanek, LTR Coordinator
Dr. I. Vuorinen, Consultant - Zooplankton
Mr. E. Aro, Consultant - Fisheries Biology
Mr E. Coenen, LTR Biostatistician
Dr. P.-D. Plisnier, LTR Limnologist
Mr. P. Kotilainen, APO-Fisheries Biologist
All the course participants from all four LTR stations

2. RESULTS

According the research done previously on lake Tanganyika *Cyclopoida* and *Calanoida* crustaceans are the main pelagic zooplankters. Several hypothesis have been produced to explain this simplicity in species composition as well as vertical migration of zooplankton.

Trainees took the zooplankton samples using Limnos-bottle sampler and 50 um plankton net. samples were taken daytime from two locations at intervals of ten meter up to 80 m depth. Cyclopoida copepods and their nauplius stages were the most abundant in the samples studied. Due to lack of time it was not possible to count all the samples.

After finishing the course the trainees were able to determine *Cyclopoida* and *Calanoida* copepods and their nauplius, copepodite and adult stages. The trainees know now also the sampling procedures: both qualitative and quantitative zooplankton sampling on the lake, sample preparation for counting, counting and data input using Excel-programme.

In discussions with LTR Coordinator, Dr. Vuorinen and Dr. Plisnier it was emphasized and decided that zooplankton sampling should be linked closely with hydrographic sampling in order to get synchronized data and to save time, manpower and funds. Consequently the zooplankton sampling will conducted at the same time in all the stations on the lake.

The regular sampling programme will start towards the end of June 1993. Before that it is important that the LTR personnel responsible for research on zooplankton continue with trial sampling in each LTR station so that both the quality and quantity of zooplankton sampling are at required level once the regular zooplankton sampling starts.

3. CONCLUSIONS AND FOLLOW-UP

3.1. Train the local researchers on zooplankton sampling.

3.2. Start preparations for regular zooplankton sampling.

GCP/RAF/271/FIN/TRAM/25

Report of Travel
to
Rome, Italy
(15-22.05.1993)

by

George Hanek
Project Coordinator

GCP/RAF/271/FIN.10

cc: Doeff/Blessich, FIOA
Kapetsky, FIRI
Fitzpatrick/Turner, FIIT
Kambona/Ssentongo, FIP
Everett, FIP
Coenen/Kotilainen, LTR-Buja
Plisnier, LTR-Mpulungu
Mannini/Kurki, LTR-Kigoma
Lindqvist/Mölsä, Kuopio
Chrono
Diary:Hanek

1. INTRODUCTION

1.1 Objectives

The objectives of this mission were: (1) to facilitate and expedite the finalisation of the contract for provision of a research vessel; (2) to discuss the modalities of collaboration with the University of Kuopio; (3) to participate in preparatory meeting for the forthcoming session of CIFA Sub-Committee for Lake Tanganyika; and (4) to discuss a number of LTR operational and technical matters with project's POO and SMO.

1.2 Itinerary

	Arrival	Departure
Bujumbura		15.05.93
Brussels	15.05.93	16.05.93
Rome	16.05.93	21.05.93
Bujumbura	22.05.93	

1.3 Persons met

Prof. O.V. Lindqvist, LTR Scientific Coordinator
Mr. H. Mölsä, LTR Deputy Scientific Coordinator
Dr. Y..Kato, Director, FIO
Mrs. D. Blessich, POO, FIOA
Dr. J. Kapetsky, SFRO, FIRI
Dr. C. Newton, Chief, FIDI
Mr. B.F. Dada, Director, FIP
Mr. G.V. Everett, SFPO
Mr. **J.** Fitzpatrick, Chief, FIIT
Mr. J.M.M. Turner, FIO, FIIT
Mr. E.J. de Boer, SFTO, FIIT
Mr. D.G. James, SFIO, FIIU
Mr. G. Politis, Chief, AFSC
Mr. E. Schwela, Chief, FIDX
Mr. F. Mancini, FIDX
Mr. P. Belanga, Personnel Officer, FIDX
Mr. J. Galletti, Finance Officer, FIDX
Ms. *S.* Antonini, Equipment Officer, FIDX
Mr. M. Mancini, Accounting Clerk, FIDX
Mr. L. Bellucci, Personnel Assistant, FIDX
Ms. *J.* Collins, FIDI

2. RESULTS

2.1 Contract for research vessel - was the main reason to visit HQ. I have accompanied Messrs. Hadjiandreau and Philipou to Rome. The first two days were entirely devoted to this complicated matter; Appendix 1 details all major issues.

2.2 Modalities of cooperation with the University of Kuopio third day was devoted to this aspect; details are now given in Appendix 2.

2.3 Preparation of 6th Session of CIFA Sub-Committee for Lake Tanganyika - first meeting on this subject was held; provisional agenda and provisional list of documents were prepared and are now attached as Appendix 3. Further it has been proposed that the 6th session of CIFA Sub-Committee for Lake Tanganyika will follow LTR's 2nd Joint Meeting of Coordination and International Scientific Committees which will be held in Lusaka from 14 to 15.10.1993.

2.4 Other matters - other matters were treated with number of HQ officers as follows:

* AA No.7/1993 (FINNIDA) has been proposed;

* replenishment of Bujumburals FBU imprest a/c has been arranged;

* replenishment (AGFUND) for computer purchases has been arranged;

* FPO for plankton samplers was prepared (it was handcarried by Mr. M61sd to suppliers);
APO situation:

- request for extension of **Kotilainen's** contract should be done early August through LTR POO (together with his Progress Report);

- extra travel budget for **Kurki -** travel plan for the rest of 1993, and its costing, should be prepared first;

- **Burma -** Government acceptance was requested on 24.04.1993;

- **Verburg** and **Paffen -** recruitment of both is under way;

* GS contracts (both at G-VI level) were proposed for

Marc **Gonçalves** (LTR Administrative Assistant) and
Mervi **Heinonen** (LTR librarian);

* all required information for R/Vls Echo, Silver Shoal and Sangala were given to FIIT in order to arrange for insurance for all three vessels effective 01.07.1993;

* arrangements were made so that LTR can receive the standard documentation regarding the operation of fisheries research vessels; and lastly

* a considerable number of documentation material was pouched back to LTR.

3. CONCLUSIONS AND FOLLOW-UP

3.1 Prepare duty travel to Zambia; objectives: (1) specify inputs of FAOR and DOF/Chilanga for 6th Session of CIFA Sub-Committee f or Lake Tanganyika and LTR 2nd Joint Meeting of Coordination and International Scientific Committees; (2) arrange for excursion visit to Kariba Fisheries Research Institute; (3) 'speed up' Gov't acceptance of APO Burma, and (4) to accompany Amb. Rantakari on visit to LTR-Mpulungu.

(Action:LTR Coordinator)

3.2 Prepare travel plan for remainder of 1993 for APO-Kurki, cost it, and request additional funds.
(Action: Kurki/Mannini, LTR Coordinator and POO)

3.3 Telex residency details of Marc Gongalves and request GS contract.
(Action: LTR Coordinator, POO)

3.4 In order to secure GS contract for Mervi Heinonen request FAOR/Burundi to certify that : (1) there is no other person in Burundi with qualifications in library sciences like Mervi Heinonen; (2) that if affected to LTR will work under completely different TOR and in different office that her husband.
(Action: LTR Coordinator and FAOR)

Summary Record of Meeting held on 17 May 1993 with representatives of the Chantier Naval Tanganyika, Messrs. Elef Hadjiandreou and Costa Philipou

Present: Fitzpatrick, FII, chairman; Blessich, FIOA; de Boer, FIIT; Hanek, Project Manager GCP/RAF/271/FIN; Kapetsky, FIRI; Kato, FIDO; Mölsä, scientific coordinator, University of Kuopio, Finland; Politis, AFSC; Turner, FIIT

The meeting was organized to facilitate and expedite drawing of the contract for provision of a research vessel to the project GCP/RAF/271/FIN "Research for the Management of Fisheries on Lake Tanganyika". The award of the contract to Chantier Naval Tanganyika (CNT) had been approved by the Contracts Committee meeting on 22 March 1993.

This meeting examined the contractual aspects, while definition of outstanding technical aspects would be discussed in a subsequent meeting with the responsible technical divisions.

The draft contract was reviewed in detail, and the following salient points emerged.

Mr. Hadj iandreou informed the meeting that his company could obtain the required bank guarantee from Banque Belgoulaise, which represents in Burundi the Societe G6ndrale de Belgique. This was feasible in view of the World Bank's allocation of US$ 700,000 in the context of their development fund for Burundi. The vessel construction work would be closely monitored by the bank surveyors in all its phases (imports, technical progress, financial disbursements, etc.). The level and options of guarantee modalies were discussed. Against an anticipated total value of US$ 432,000 for the contract charter and maintenance elements, agreement was reached for downpayment of US$ 414,000, following signature of the contract, into an excrow account. The amount represented the total charter fee for not less than 36 months at a monthly fee of US$ 11,500. This lump-sum disbursement would be automatically covered by the bank guarantee, and the bank would also ensure its gradual decrease as of the start of the vessel charter. It would be up to the Organization to advise the bank of such date. Mr. Hadjiandreou would be visiting the bank HQs in the next days and would communicate the wording proposed by the bank in this respect. He would also communicate the exact definition of the Contractor entity, as the bank would most likely require that CNT be converted into a company of which the builder will be the major share holder.

DB
GCP/RAF/271/FIN.5

cc: all present
Fi Reg 2
Kato/FIOA
Bleessich
Doeff diary

Mr. Hadjiandreou requested that the bank be shown as the insurance beneficiary. FAO, who would be the policy holder for this joint insurance, would provide instructions to the underwriter for such designation, and article 11 (c) would be amended accordingly. Mr. Hadjiandreou would be provided with a copy of the insurance conditions for his advance information, renewal date for all FAO policies being the 15th of September of each year.

The amount of total loss was to be established and endorsed by the bank. This would be reviewed each year for vessel depreciation.

The yard representatives were informed of the UN obligation for FAO humanitarian interventions. It was further clarified that "demise" charter gave FAO full control and responsibility of the vessel during the charter period, as well as the option to carry out research activities in collaboration with or for other associates programmes on a cost-sharing basis of operational costs, as long as the vessel would not be used for financial gain. This point would be included in the contract section dealing with "Obligations of the organization". An article would be added to secure FAO option for renewal of the charter for two additional periods of one year each with a notice to the yard of 6 months.

Mr. Mölsä expressed satisfaction with the general arrangements and with the involvement of the World Bank, and informed the meeting that FINNIDA would consider a project extension through end 1996 favourably.

Should the contract be awarded, the yard was ready to start works in mid July, subject to timely obtention of the necessary clearances in Burundi - the country administration will soon be paralized by elections in June. The standard transmission letter of the contract to the FAO Representation would be adjusted to add a request for intervention by the representation to facilitate and expedite the process. The yard could similarly request a facilitating intervention by the local World Bank representative.

Appendix 2

Summary record of meeting held with Messrs. Hanek, Project Coordinator, GCP/RAF/271/FIN, and Prof. Mölsä, on 18 May 1993

Present: Belanga, Personnel Officer, FIDX; Blessich, POO, FIOA; Galletti, Finance Officer, FIDX; Schwela, Chief, MSU, FIDX

The meeting was held to discuss modalities of collaboration with the University of Kuopio, the official entity entrusted with execution of a large scientif ic research component in the project implementation. For the purpose, the University had been registered in the FAO roster of companies.

At project inception, the Director of Central Personnel had agreed to the formula of Reimbursable Loan Agreement (RLA) for recruitment of consultants f rom the University. Recruitment had not always been a smooth process, and frequent and last minute changes in schedules and financial arrangements had also required a considerable effort from all parties involved. The meeting emphasized the need for the University to present requests for recruitment to FIO allowing adequate processing time - in the range of one month.

Mr. Belanga explained the main rules governing RLAS, detailing the broad categories these could cover being honorarium and related overheads, daily subsistence allowance and persons' transportation. Incidentals could be exceptionally be accommodated for limited amounts. This form of contract had the added limitation of requiring that multidisciplinary teams perform one task with identical terms of reference.

FIDX had advised Operations Service to consider the alternative arrangement of "Contract Service Agreement", which FIO had drafted and discussed with Prof. M61si. The latter explained that the University of Kuopio collaborated with the project at scientific level through the Section of applied geology, headed by Prof. Lindqvist, while all administrative issues were dealt with by the Centre for Training and Development. He believed the Contract Service Agreement would be acceptable, and would discuss the details with the Centre of Training and Development.

The meeting agreed that in principle that RLA was proper for the recruitment of consultants visiting the project to carry field work in Lake Tanganyika. To facilitate recruitment procedures Mr. MdlsH agreed to provide on behalf of the University the names and curricula of the consultants usually engaged for the task, specifying on a yearly basis their
respective category fees. All other services (provision, calibration, and transport of equipment) and the related activities carried out at the University or connected entities in Finland (analyses of samples, laboratory tests, modelling etc.) should rather be covered by a Contract Service Agreement on the basis of the programme of research articulated on a yearly

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GCP/RAF/271/FIN.7
cc: all present
Fi Reg 2
Blessich
Doeff diary

basis. CSA would specify services to be rendered, outputs expected, and a schedule of payments. These would be effected in Finnish Markkas upon

certification of satisfactory completion of the services without presentation of invoices. The University would though provide the Operations Service with adequate information and details of costing to enable definition of compensation fees.

Contract Service Agreements are charged against the budget contracts component. Budget coverage in this line exists, but funds for the purpose would be transferred from the Personnel to the Contracts component in the next budget revision.

Clarification on the University obligation to secure adequate insurance coverage for his or associated staff was provided, FAO having no liability in this respect in both the arrangements (RLA and CSA).

Appendix 3

CONMTTEE ON INLAND FISHERIES OF AFRICA

SUB-COMMTTEE FOR LAKE TANGANIKA

Lusaka, Zambia, 14-19 October 1993

PROVISIONAL AGENDA

1. Opening of the Session.
2. Election of Chairman and Vice-Chairman.
3. Adoption of the Agenda and arrangements for the Session.
4. Action on recommendations of the Fifth Session of the Sub-Committee.
5. Development and Management of Lake Tangayika Fisheries.
6. Progress of the Lake Tanganyika Fisheries Research Project.
7. GEF Programme for Lake Tanganyika.
8. Any other matters.
9. Date and place of the Seventh Session.
10. Adoption of the Report.

SIXTH SESSION OF CIFA SUB-COMMITTEE FOR LAKE TANGANYIKA

Lusaka, Zambia, 14-19 October 1993

PROVISIONAL LIST OF DOCUMENTS

Document	Title	Responsibility and deadline
CIFA:DM/LT/93/1	Provisional Annotated Agenda and Timetable	Ssentongo, FIPL 31 May 1993
2	Actions on recommendations of the Fifth Session of the Sub-Committee.	Ssentongo, FIPL 15 June 1993
3	Development and Management of Lake Tanganyika Fisheries.	Everett, FIPP 30 June 1993
4	Summary of Conclusions and Recom-mendations of the LTR Workshop on Fisheries Statistics Bujumbura Burundi, 19-23 July 1993.	Coenen 30 July 1993
5	rogress Report of the Lake Tanganyika Fisheries Research Proj ect	Hanek 30 July 1993
6	Report of the Joint Meeting of the LTR Coordination and Scientific Committees, Lusaka, Zambia,14-15 October 1993	Hanek/Coenen At Session
7	Present Status of -GEF Programme for Lake Tanganyika	Kapetsky, FIR1 30 June 1993
Information Documents		
CIFA:DM/LT/93/lnf.3	List of documents.	Ssentongo, FIPL 31 May 1993
Inf.2	List of participants.	Ssentongo, FFPL At Session
Inf.3	Report of the Fifth Session of the CIFA Sub-Committee for Lake Tanganyika, Bujumbura , Burundi,	Available
Inf.4	Report of the Ninth Session of CIFA Cairo, Egypt, 20-24 October 1990.	Available
Inf.5	Report of the LTR Workshop on Fishery Statistics 30 July 1993	Coenen
CIFA:DM/LT/93/CS-1	Burundi	
2	Tanzania	
3	Zaïre	
4	Zambia	

The Outline of the Country Statements to be prepared by the Secretariat.

GCP/RAF/271/FIN/TRAM/26

Report of Travel

to

Kigoma (Tanzania)

and

Mpulungu (Zambia)
(11.05. - 24.05. 1993)

by

Pekka Kotilainen
APO - Fisheries Biologist

GCP/RAF/271/FIN.10

cc: Kato/Doeff, FIO
Kapetsky, FIRI
Lindqvist/Mö1sä, Kuopio
Huttula/Peltonen/Nieminen
Mannini/Kurki, LTR-Kigoma
Plisnier, LTR-Mpulungu
Chrono
Diary:Kotilainen

1. INTRODUCTION

1.1 Objectives

The objectives of the travel were: (1) to check the installations of anemometers and water level stations in Kigoma and Mpulungu field stations; (2) to unload the data recorded by these units since last hydrodynamic mission in March; (3) to change the data storing units of the three under water thermistor chains on the lake, of which one was attached to a surface buoy; (4) to leave an automatic wind measurement unit with installing instructions in Kigoma where it is to be installed; (5) to reinstall some software to LTR computers in Kigoma and Mpulungu; (6) to conduct hydrodynamic measurements with STD-sonde and current cylinders on the lake; and (7) to deliver current cylinders to both LTR field stations. The mission was conducted on M/V Mathieu and on the project's R/V Echo. Finally, R/V Echo was left in her home port in Kigoma, to carry on LTR sampling activities there in the future.

1.2 Itinerary

	Arrival	Departure
Bujumbura		11.05.93
Kigoma	12.05.93	14.05.93
Mpulungu	19.05.93	20.05.93
Kigoma	22.05.93	23.05.93
Bujumbura	24.05.93	

1.3 Persons met

in Kigoma

Mr. P. Mannini, Expert-Fisheries Biologist, GCP/RAF/271/FIN
Ms. H. Kurki, APO-Limnologist, GCP/RAF/271/FIN
Mr. I. Katonda, Director, TAFIRI Centre, Kigoma
Mr. D. Chitambwebwa, Scientist, TAFIRI
Mr. *N.* Challe, Technician, TAFIRI
Mr. M. Kissaka, Scientist, TAFIRI
Mr. A. Kalangali, Scientist, TAFIRI
Mr. M. Chatta, Fisheries Assistant, TAFIRI

in Mpulunqu

Dr. P.-D. Plisnier, Limnologist, GCP/RAF/271/FIN
Mr. D. Kabakwe, Fisheries Development Officer
Mr. T. Milindi, Fisheries Officer
Mr. S. Sichivu, Fisheries Assistant
Mr. L. Makasa, Fisheries Assistant

2. RESULTS

2.1 Activities in the northern main basin and in Kigoma

In Kigoma the automatic water level station recording unit was unloaded and the software used in the project for establishing the databases was installed. TAFIRI personnel was brief ed on the software and the primary wind data, which had been collected in Kigoma, were stored in files. An automatic wind recording unit was left for installation in Kigoma and instructions of that and the unit were given to the personnel. Fuel for M/V Mathieu was loaded.

The main objective was to locate and lift the under water thermistor chain of f Kigoma and to change its data storing unit. Several trials were made to lift it. The thermistor chain was approximately located with receiver unit on the basis of the signal the chain transmits, but despite all efforts the chain could not be found, mainly because of the malfunction of the thermistor chain releasing unit and the project's echosounder. Finally, because of the tight schedule, it was decided to continue the mission to the south. On the way from Bujumbura to Kigoma and to Mpulungu several STD-sonde profiles were measured and plankton samples were taken.

2.2 Activities in the southern main basin

In the southern main basin one of the aims was to lift up the thermistor chain and to change the data storing unit to get the data that was collected since the installation of the chain, in March 1993. The chain was approximately located as the chain outside of Kigoma, but because of the same kind of problems mentioned above and fairly strong winds, which were disturbing the work all the time, the chain could not be found either here. Another goal was to change the surface buoy data storing unit outside of Mpulungu. It was conducted with no problems. STD and current measurements were made as frequently as the weather conditions allowed to. On the way to Mpulungu several plankton samples were taken.

2.3 Activities in Mpulunqu

Dr. Plisnier was briefed on the problems in finding the thermistor chains. Current cylinders and some software were left in there. The replacement data storing unit reader, which was ordered from Aanderaa, Norway, before departure from Bujumbura to be delivered to Mpulungu, was received. The consultants stayed in Mpulungu to continue later on to Lusaka and back to Finland. They were supposed to install the software, to train the counterparts on the software and to establish the database in hydrodynamics.

M/V Mathieu left for Bujumbura the day after her arrival to Mpulungu.

2.4 Activities in Kigoma

Before returning to Bujumbura, the expedition had to stay one day in Kigoma because of M/V Mathieu engine problem. The current cylinders were left in Kigoma to conduct the current

measurements. R/V Echo stayed at her home port, Kigoma, to carry on the project's sampling program there.

3. RECOMMENDATIONS

3.1 Evaluate the possibilities of conducting a small scale survey with local experts to find the thermistor chain outside of Kigoma. First possible time should be in July after elections in Burundi. (Action: LTR Personnel in Bujumbura and Kigoma)

3.2 Follow-up/supervision of the measurements. (Action: Expert and APO in Kigoma, Expert in Mpulungu)

3.3 Contact SIMRAD and request replacement or reparation of the echosounder EY 500, if it is impossible to get it functioning in Bujumbura. (Action: Project Coordinator, APO in Bujumbura)

3.4 Prepare next mission for autumn 1993 (Action: Consultants in hydrodynamics, LTR Personnel in Bujumbura and Kigoma)

3.5 Deliver the broken data storing unit reader back to Aanderaa. (Action: Project Coordinator)

GCP/RAF/271/FIN/TRAM/27

Report of Travel
to
Lusaka and Mpulungu (Zambia)
(16-23.06.1993)

by

George Hanek
LTR Coordinator

GCP/RAF/271/FIN.10

cc: Rantakari, Lusaka
Doeff/Blessich, FIOA
Kapetsky, FIRI
Everett, FIP
Kambona/Ssentongo, FIPL
Lindqvist/Mölsä, Kuopio
de Castro/Springer/Jere, FAO/Lusaka
Mudenda/Mubamba, Chilanga Machena, Kariba
Maembe, Dar es Salaam
Bwathonde, Kunduchi
Kasereka, Kinshasa
Gashagaza, Uvira
Kiyuku/Nyakageni, Bujumbura
Coenen/Kotilainen, Bujumbura
Plisnier, Mpulungu
Mannini/Kurki, Kigoma
Chrono
Diary:Hanek

1. INTRODUCTION

1.1 Objective

The objectives of this mission were: (1) to make initial arrangements for the 2nd Joint Meeting of LTR Coordination and International Committees and the 6th Session of CIFA sub-committee for Lake Tanganyika; (2) to accompany H.E. the Ambassador of Finland to Zambia for inauguration of LTR facilities in Mpulungu; and (3) to deal with other project business.

1.2 Itinerary

	Arrival	Departure
Bujumbura		16.06.93
Lusaka	16.06.93	20.06.92
Mpulungu	20.06.93	21.06.93
Lusaka	21.06.93	23.06.93
Bujumbura	23.06.93	

1.3 Persons met

in Lusaka

Mr. I. Rantakari, Ambassador of Finland to Zambia
Mr. **G.** Mudenda, Director of Fisheries
Dr. R. Mubamba, Acting Assistant Director of Fisheries
Ms. N. Springer, FAO Programme Officer
Ms. V. Best, FAO Admin. Officer
Mr. B. Thomsen, FAO Programme Officer
Ms. D. Jere, FAO Assistant Programme officer
Mr. N. J. Phiri, Manager, Inter-Continental Lusaka
Ms. J. Chimuka, PR Officer, Mulungushi Int. Conference Centre

in Mpulunqu

Dr. P-D. Plisnier, LTR Limnologist
Mr. C. Ndola, Regional Fisheries Development Officer, Mbala
Mr. D. Kabakwe, officer-in-charge, DOF/Mpulungu
Mr. L. Mwape, Research officer, DOF/Mpulungu
Mr. G.M. Milindi, Research Officer, DOF/Mpulungu
Mr. C. Blignaut, Managing Director, Samaki Ltd.
Mr. L. Kamwale, Branch Manager, Standard and Chartered Bank

2. RESULTS

2.1 Arrangements for October 1993 meetings in Lusaka
Two back to back meetings will be held in Lusaka in October 1993; an excursion to the Kariba Fisheries Research Institute has been also organized. The following arrangements were made:

2nd Joint Meeting of LTR Coordination and International Scientific Committees

Dates:14-15.10.1993

Venue:Nalikwanda Room
Inter-Continental Hotel, Lusaka

- special rates were negotiated with Inter-Continental (US$ 80 forsingle room and US$ 90 for double room) NOTE: DSA in Lusaka $176; 20 single rooms were tentatively reserved (firm confirmation must be made by the end of September);

- Nalikwanda Room is made available to us at no charge; hotel's charge for coffee/tea and biscuit will be K850/person + 10% service charge. overhead project and blackboard will be also available, at no charge;

Other arrangements: LTR's Scientific Coordinator and LTR's Coordinator will offer cocktail, at time and venue to be determined later. FAO Representation offered to provide one secretary as well as to arrange for the preparation of the signs for both meetings. Hotells photographer will be available.

Excursion to Kariba Fisheries Research Institute, Kariba, Zimbabwe

Dates:16-17.10.1993

Programme:

Saturday, 16.10.1993:

1300 hrs : departure from Inter-Continental, Lusaka with Ministry of Agriculture, Food and Fisheries minibus (minibus provided free of charge by the Ministry, LTR will pay for fuel and cover driver's expenses)

1500 hrs : arrival to Kariba; special rates ($40/single room) were obtained in Carribia Bay Lodge which is just opposite to Kariba Fisheries Research Institute (KFRI);

NOTE: all participants must have valid visa for Zimbabwe; those who wish can provide LTR with photocopies of their passports by the end of September 1993 and LTR, together with the KFRI, will arrange for visa upon arrival to the border

2000 hrs :excursion with KFRI research vessel to observe night fishing for *Limnothrissa miodon*

Sunday, 17.06.1993:

1000 hrs : visit to KFRI; Dr. **C.** Machena, Director of KFRI, agreed to organize this visit;

1300 hrs : departure from Kariba

1800 hrs : arrival to Inter-Continental, Lusaka

6th Session of the CIFA Sub-Committee for Lake Tanganyika

Dates: 18-19.10.1993

Venue: Committee Room No. 4 Mulungushi International Conference Centre, Lusaka;

- reason: portable interpreter's booths are not available in Zambia; however, the Mulungushi International Conference Centre has several Committee room equipped with 'fixed' interpreter's boots; the smallest one i.e. Committee Room No. 4 was reserved. The charge is K90,000/day which includes one additional office; tea/coffee + biscuits charge is K380/person;

Transport: minibus of the Ministry of Agriculture, Food and Fisheries will ensure shuttle service between the Inter-Continental and the Mulungushi Conference Centre (=2 km distance);

Liaison Officer: Mr. **E.** Chilimunda of DOF/Chilanga has been already named;

Other arrangements: Mr. G. Mudenda, Director of Fisheries, Chilanga, who will be serving as the chairman for both meetings, will offer a cocktail for the participants. FAO Representation will provide one secretary.

2.2 Visit to Mpulungu

Two days visit to LTR/Mpulungu followed. I have accompanied H.E. the Ambassador of Finland to Zambia, Mr. Ilari Rantakari, Dr. R. Mubamba, Acting Assistant of Fisheries, Mr. B. Thomsen, FAO Programme Officer and two Zambian journalists.

Mr. Ambassador has inspected LTR's rehabilitation and construction works in Mpulungu and inaugurated our facilities on 21.06.1993. In his inauguration address he has expressed his satisfaction with our efforts since this job was completed, under very difficult circumstances, in record time. He also noted that R/V Silver Shoal rehabilitation was also completed and thus all required infrastructure and equipment is now in place. Following inauguration ceremonies Mr. Ambassador visited our new facilities while P-D. Plisnier provided detailed explications on how our MpulungU station functions.

2.3 Other business

The following matters were also dealt with:

* problems re: Gov't acceptance of APO-Bosma have been resolved and the Director of Fisheries informed that a candidature of yet another APO (=Verberg) will be proposed shortly; it was explained that these persons were selected and endorsed by Mr. Frits Roest as well as explained that, due to LTR's research programme complexity, more persons will be required;

* changes re: LTR limnological training schedule were explained; as a result Dr. Plisnier left with me to Bujumbura where he will conduct this course for our Burundese and Zairoise colleagues; he will than leave to do the same thing in LTR/Kigoma before returning to his duty station;

* several ideas for articles for our Newsletter were proposed;

* a number of aspects was discussed with Mr. Shariff, our contractor; it was agreed that the final payment will be issued once LTR civil engineer is fully satisfied;

* progress with editing papers by Dr. Mubamba for our 1992 symposium was verified; one more week is needed to complete this task; and

* arrangements were made to transport R/V Silver Shoal back to her home port.

3. CONCLUSIONS AND FOLLOW-UP

3.1 Provide Amb. Rantakari with video and photos of LTR/Mpulungu inauguration ceremony + express thanks for his generous hospitality

(Action: LTR Coordinator)

3.2 Provide FAO/Lusaka Admin. Officer with LTR Report FM/No. 5
(Action: LTR librarian)

3.3 Prepare official request to the Director of Fisheries for the use of Ministry of Agriculture, Food and Fisheries' minibus during 16-20.10.1993
(Action: LTR Coordinator)

3.4 Inform Lusaka's Inter-Continental Front Office Manager re: number of single and double rooms required and provide the ETA for all participants
(Action: LTR Coordinator)

3.5 Confirm the number of excursion participants to the Director of KFRI

(Action: LTR Coordinator)

3.6 Design the signs for the meetings and request Mrs. Jere to arrange for their preparation
(Action: LTR Coordinator)

GCP/RAF/271/FIN/TRAM/28

Report of Travel

to

Bujumbura, Burundi

and

Kigoma, Tanzania

by

Pierre-Denis Plisnier
Limnologist

GCP/RAF/271/FIN.10

cc: Blessich, FIOA
Kapetsky, FIRI
FAOR, Tanzania
FAOR, Zambia
Hanek, LTR-Bujumbura
Coenen/Kotilainen, LTR-Bujumbura
Mannini/Kurki, LTR-Kigoma
Lindqvist/Mölsä, Kuopio
Trams
Chrono
Diary: Plisnier

1. INTRODUCTION

1.1 Objective

The purpose of the travel was to give a training course in limnology to the local counterparts of Burundi and Zaire in Bujumbura and Tanzania in Kigoma.

1.2 Itinerary

	Arrival	De-parture
Mpulungu		21.06.93
Lusaka	21.06.93	23.06.93
Bujumbura	23.06.93	28.06.93
Kigoma	28.06.93	04.07.93
Bujumbura	05.07.93	07.07.93
Mpulungu	09.07.93	

1.3 Persons met

in Bujumbura:

Dr. G. Hanek, Project Coordinator, GCP/RAF/271/FIN
Mr. E. Coenen, Biostatistician, GCP/RAF/271/FIN
Mr. R. Varayannis, Civil Engineer (SSA), GCP/RAF/271/FIN
Mr. P. Kotilainen, APO-Fisheries Biologist, GCP/RAF/271/FIN
Dr. L. Risch, Project Manager, Project Belgium/CEPGL
Dr. A. Vandenlannoote, Limnologist, Project Belgium/CEPGL

in Kigoma:

Mr. P. Mannini, Fisheries Biologist, GCP/RAF/271/FIN
Ms. H. Kurki, APO-Fisheries Biologist, GCP/RAF271/FIN

2. RESULTS

Thanks to the equipment sent by Kuopio and to the reception of Hach chemicals, the training could finally be realised. The following persons took part: in Buiumbura:

E. Coenen
P. Kotilainen
B. Nyakageni
S. Kimbadi
M. Gahungu
G. Bampoye

in Kigoma:

P. Mannini
H. Kurki
N. Chitamwebwa
N. Lyoba
I. Muhoza
B. Kalangali

in Mpulungu:

L. Mwape
C. Lukwessa
S. Sichivu
E. Chipulu
L. Makassa
R. Shapola
K. Kaoma
M. Mwenda

At all stations the training course in limnology was realised as follows:

1. Preparation of chemicals and apparatus

2. Theoretical presentation on limnology

3. Presentation of equipment and preliminary measurements

4. Sampling on the lake (in connection with zooplankton sampling)

   4.1 Sampling of type A (regular weekly sampling)

   4.2. Sampling of type B (intensive 24 hours cycle sampling)

5. Analysis on the lake

6. Analysis in the laboratory

7. Presentation of limnological form on computer and graphics

8. Summary of program and conclusions.

On the lake, the following parameters have been measured: transparency, temperature, pH and conductivity.

In the laboratory, the parameters that have been measured were: Total phosphorus, phosphates, nitrates, nitrites, ammonium, iodine, total hardness, calcium hardness, alkalinity, chloride, sulphate and turbidity.

Following the training, it appears that in order to allow vertical haul when the lake is rough, a floating anchor should be available for the boats to avoid the drift as much as possible. The weight of the sampling bottles should also be heavier. The same remark can be done for the zooplankton sampling net which needs a weight to allow vertical haul.

Several french versions of the Hach manual are still missing and have been ordered as well as some handy laboratory equipment (burette, pipet of 50, 100 ml ...).

Concerning the program for the beginning of the sampling (the first few weeks), particualrly in the view of the fact that some equipment ordered through HACH has not arrived yet (a few chemicals are missing as well as cylinders with stoppers for example), it will not be possible to perform all the analysis of sampling A and B type (weekly and 24 hour). But sampling and analysis of type C (seasonal) is now possible. It has been recommended then that this sampling type C could be done at the beginning (in July) together with all those tests for sampling A and B for which the chemicals are available.

3. CONCLUSIONS AND FOLLOW-UP

3.1 Limnological training has been provided and teams are able to perform analysis in each station around the lake.

3.2 Equipment has been checked in each station (conductivity-meter, pH meter, spectrophotometer and turbidity-meter).

3.3 Some improvement of the equipment to sample vertically should be done: floating anchor against drift, adding weight to sampling tubes and nets

(Action: Project coordinator, persons in charge of limnology in each station).

3.4 Preliminary manuals in English and French were distributed. Definitive versions will soon be completed and distributed to each station
(Action: limnologist)

GCP/RAF/271/FIN/TRAM/29

Rapport de Voyage

à

Kalemie, Moba and Bukavu
(Zaïre)

par

Mambona Wa Bazolana

GCP/RAF/271/FIN. 10

cc: Blessich, FIOA
Kapetsky, FIRI
FAOR/ Zaïre
Lindqvist/Mölsä, Kuopio
Trams
Chrono
Diary : Mambona

1. INTRODUCTION

1.1 Instructions

Les objectifs de cette mission étaient: (1) décrire le cadre institutional pour la collecte et l'analyse des statistiques de pêche pour le lac Tanganyika; (2) décrire et évaluer les systèmes utilisés pour la collecte des données, leur fonctionnement et les problèmes rencontrés; (3) définir les priorités d'intervention possible par RLT; et (4) définir les besoins possibles d'amélioration et de standartisation des systèmes utilisés.

1.2 Itinéraire

	Arrivée	Départ
Uvira		14.04.93
Kalemie	15.04.93	22.04.93
Moba	23.04.93	26.04.93
Kalemie	27.04.93	30.04.93
Kabimba	30.04.93	03.05.93
Uvira	04.05.93	19.05.93
Bukavu	19.05.93	23.05.93
Uvira	23.05.93	

1.3 Personnes rencontrées

Zone de Kalemie

Dr. Seundi Mbondi	Coordinateur sous-régional ECNT, s/région du Tanganyika, Kalemie
M. Mastaki Nyembo	Commissaire s/régional, s/région du Tanganyika, Kalemie
M. Kalamata Kibi	Superviseur de zone, ECNT
M. Chalula Lumbwe	Chef de cellule, ECNT, s/région du Tanganyika
M. Detsimas Demetre	Pêcheur industriel
M. Mwelwa Shamfumu	Chef de cellule, ECNT, zone
M. Kamwanga mwanangoyi	Moniteur et agent de Pêche, ECNT
M. Ngongo Masudi	Agent de pêche
M. Kasongo Kyungu	Agent de pêche
M. Kabange Wa Nkulu	Agent de pêche
M. Ndakala Manioka	Agent de pêche
M. Kalima Lukuba	Agent de pêche
M. Nkulu Ndala	Agent de pêche
M. Mukonga Yuma	Agent de pêche
M. Assa—Bu Bin M.	Président de la COOPEMU
M. Kasanda Essesa	Président de la COOPEKA

M. Harumani Kibawa	Président de la SOCOPEKA
M. Sadiki Tambwe	Président de 1’ UPETA
M. Mavinga	Représentant de l’ILFEC

Zone de Moba

M. Kapolo Bondo	Commissaire de zone de Moba
M. Ilunga Kapungubila	Superviseur de zone, ECNT
M. Nchimbu Mulunda	Chef de cellule, ECNT
M. Mukonsi Mwamba	Agent de pêche
M. Kamwanya Kabasumani	Agent de pêche
M. Kapita Wa Ngelaka	Agent de pêche
M. Panda Lulu Wa Nyembo	Agent de pêche
M. Mpweto Kabalika	Agent de pêche
M. Banza Ngoy	Agent de pêche
M. Mwika Bulanda	Agent de pêche
M. Mundanda Faray	Agent de pêche
M. Kibimbi Ngoyi	Agent de pêche
M. Mwini Amisi Aruna	Président de la COOPAGRIPECHE

Zone d’Uvira

M. Mongbomola Emina	Chef de bureau de zone
M. Mihigho Rwandika	Superviseur de zone, ECNT
M. Kungwa Assani	Services généreaux, ECNT
M. Mateso Nyiringabi	Chef de secteur cité d’ Uvira, ECNT
M. Nkala Ndosimau	Garde de pêche
M. Kwibe Lyango	Garde de pêche

Zone de Fizi

M. Sinawaka Wa Mulondani	Superviseur de zone, ECNT
M. Mpanda Wa Makulu	Président de la Socoodefi/Kazimia
M. Mwassa Apita	Chef d’attenne de la Socoodefi/Uvira
M. Tukilinda Mwassa	Aide conducteur du bateau NO 3 de la Socoodefi/Kazimia.

Ville de Bukavu

M. Lomami Ilunga Mulo	Coordinateur régional de l’ECNT, région du Sud-Kivu
M. Mutokambali Bojaka	Chef de bureau conservation de la nature, ECNT, région du sud-Kivu
M. Kulia Lubungusi	Ingénieur technicien en foresterie, ECNT, région du Sud-Kivu

2. RESULTATS

2.1 Brève historique

Bien avant l’indépendance, la secteur de la pêcha au Zaïre était placé sous la Direction des Eaux et Forêts (DECNT,1984). C’est en 1949 que fut créé au sein de cette direction une division appelée Division des Pêches et Pisciculture composée en majeure partie des agents de pêche. Cette division était chargée d’encadrer les pêcheurs, de les assister techniquement et socialement, et enfin d’assurer l’application de la

réglementation en matière de pêche.

Peu après, cette division a été transférée au sein du Département de l'Agriculture jusqu'en 1976. Au courant de cette même année, la Direction des Eaux et Forêts et ses trois composantes (Forêt, Chassa et Pêcha) a été placée sous l'autorité du Département de l'Environnement, Conservation de la Nature et Tourisme (DECNT). Mais avant cala il fut créé en 1974 l'Office National de Pêche (ONP) doté d'une personnalité juridique àcaractère industriel et commercial.

Les autorités de cet office furent suspendues par la suite à cause d'une mauvaise gestion dans le Cadre de la zaïrianisation et ensuite l'office a été cédé peu après au Centre National de Développement de la Pêche à Kinkole (CNDPK) créé en 1969 par ordonnance présidentielle.

Mais en avril 1975, le CNDPK disparaissait à son tour et ses activités étaient à nouveau confiées à l'ONP dont les nouvelles attributions fixées en 1978 étaient essentiellement de s'occuper de l'encadrement des pêcheurs, de la promotion du développement de la pêche et de la recherche et aussi de la collecte des statistiques de pêche. Mais cette tâche revenait aussi à la Division de Pêche qui oeuvrait au sein du DECNT. Cependant, cas 2 services étaient paralysés par manqua de moyens matériels et financiers. Cette dernière situation a rendu difficile leur travail.

C'est ainsi qu'en 1991 l'ONP fut aboli par suite de ce déséquilibre financier. Pour cette raison, depuis 1982 la gestion du secteur de la pêche était laissée à la seule responsabilité de la Division de Pêche du DECNT, actuellement MECNT[1]. Même le Service National pour la Promotion et le Développement de la Pêche (SENADEP), créé en 1987 au sein de ce ministère, ne disposait pas d'un budget propre pour son fonctionnement (Muganda, 1991).

2.2 Organisation

Le MECNT est le seul responsable du secteur pêche pour l'ensemble du pays.

Au niveau national ce ministère est organisé en 4 Directions et la Division de Pêche relève de la compétence de la Direction de la Gestion des Ressources Naturelles Renouvelables. Cette division a comme fonction: (i) de donner des conseils techniques sur l'aménagement et le développement de la pêche; (ii) de promouvoir et planifier le développement de la pêche; (iii) de protéger les ressources; et enfin (iv) de collecter las statistiques de pêche.

Mais par manque de moyens matériels et financiers, les rôles dévolus à cette Division de Pêche se réduisant actuellement àl'octroi des permis de pêche, au prélèvement des taxes et à la collecte des statistiques de pêche.

Au niveau régional, les coordinateurs régionaux s'occupent aussi bien de la gestion des forêts et de la chasse que de la pêche.

Au niveau de la Sous—région, les coordinateurs sous—régionaux ont un seul bureau qui s'occupe de toutes les activités relatives aux rôles que doit jouer le ministère, y compris la pêcha.

Au niveau de la Zone, les Superviseurs de Zone gèrent toutes les activités du ministère dans leur rayon d'action.

Mais dans la pratique, ces organisations travaillent d'une façon quasi—indépendante de l'organisation nationale en se limitant à accomplir que las tâches considérées comme primordiales par les responsables régionaux, sous—régionaux et de Zone.

Malgré tous las problèmes qui existent, les rapports arrivent au bureau central basé à Kinshasa par le circuit suivant:

Agents ou Gardes de pêche (sur les plages)
||
Chefs de Secteur ou de Cellule (sur les plages principales)
Superviseurs (dans les Zones)
||
Coordinateurs Sous—régionaux (dans les Sous—Régions)
||
Coordinateurs Régionaux (dans les Régions)
||
Directeur de pêche (MECNT à Kinshasa)

2.3 Systeme des collectes des statistiques de pêche

Au départ, la collecte des statistiques de pêcha a été organisée au Zaïre afin de pouvoir répondre à un impérieux problème au niveau des régions, particulièrement celui de contrôle de paiement des taxes et permis de pêche que tout propriétaire d'unité de pêche doit payer. Ainsi, au fur et àmesure que des agents ont été placés sur les lieux de débarquement des unités de pêche, d'autres informations très nécessaires ont commencé à être recueillies, notamment les données sur las prises, le nombre des pêcheurs, les types d'embarcations, d'engins, etc... Malgré l'existence dans certaines plages des agents ou gardes—pêche, les données récoltées sont peu fiables car ces derniers effectuant très souvent des travaux relatifs aux forêts, à la chasse et àd'autres activités personnels et donnant moins d'importance à la pêche. D'ailleurs les visites dans les plages voisines sont très rares, ce qui conduit à la non fiabilité des statistiques récoltées. Aussi, par manque d'instructions précises, les méthodes de collecte des statistiques ainsi que le type de données récoltées diffèrent d'une région à une autre, d'une zone à une autre voir même d'une plage à une autre.

Actuellement il existe des statistiques de pêche pour certaines années, mais les séries chronologiques sont souvent très incomplètes et présentent des variations qui échappent à des explications logiques.

La non fiabilité des statistiques disponibles à ce moment a des causes multiples:

— l'inexistence d'un système national standardisé pour la collecte des statistiques de pêche,
— la manque de coordination et d'intégration de la pêche au niveau central, régional, sous—régional voire de Zone.
— le manque de moyens matériels et financiers,
— l'absence du personnel qualifié.

Telles sont les principales causes qui freinent grandement le rôle que devrait jouer les statistiques de pêche dans la planification du développement de la pêche au Zaïre et les rendent ainsi inutilisables pour pouvoir mieux évaluer l'effet de la pêche sur les stocks des poissons.

2.4 Le lac Tanganyika

2.4.1 Cadre institutionnel et système des statistiques de pêche utilisé

Le lac Tanganyika fait partie intégrante du même cadre institutionnel et du même système statistique comme tous les plans d'eau du pays. Donc il n'y a pas un cadre exceptionnel ou un système spécifique des statistiques pour le lac Tanganyika.

Nous avons souligné plus haut les difficultés de donner une image précise de la situation actuelle des statistiques àcause de la nature extrêmement imprécise et peu fiable des données officielles disponibles. Il n'y a pas de système efficace et uniforme de collecte de statistiques de prise et effort de pêche, couvrant toute la côte (Reynolds, 1992).

Les gardes—pêche qui se rendent sur les plages de débarquement des pêcheurs tout le long du lac, ne se limitant qu'à des estimations simples des captures de la pêche au vu de l'oeil. Ainsi les captures zaïroises du lac Tanganyika ne sont pas bien connues. D'ailleurs depuis 1979-1980, la Division des pêches basée à Kinshasa au DCNT, ne reçoit plus des statistiques régionales (Villegas, 1984).

Concernant les Enquêtas Cadres (EC), à part les 2 enquêtes qui ont au lieu dans la partie nord du lac, dont le premier en juin 1984 par M. Villegas, expert de la FAO, qui avait couvert la région située antre Uvira et Baraka, environ 100 km (1/7 de la côte zaïroise du lac) et le second en janvier 1991 (Maes *et al*, 1991) allait de la frontière burundaise à Kazimia. La partie couverte s'étendait sur quelques 250 km. Toujours est—il qu'il faut souligner qu'une autre enquête du même genre a été menée en 1988 par M. D. Ali Lunianga du projet Ressources Pêches de l'A.C.D.I. dans la même partie du lac. Malheureusement les résultats de ce travail ne nous sont jamais parvenus.

Ainsi, tous les travaux antérieurs ont au lieu uniquement dans la partie nord du lac. Auparavant aucune enquête cadre n'avait eu lieu au Zaïre dans la partie centrale et sud du lac.

Cependant, RLT vient de faire tout récemment 2 enquêtes cadres aériennes couvrant tout le lac et dont le but était de vérifier la longueur de la côte du lac Tanganyika, la nombre et type des unités de pêcha, la densité des unités de pêche, la classification des lieux de débarquement des pêcheurs, le type et l'étendue des principaux substrats, et enfin de compléter avec plus détails les enquêtas antérieures réalisées par certains auteurs.

Aussi toute la côte zaïroise du lac Tanganyika n'a jamais fait l'objet d'aucune Enquête d'Evaluation des Captures (EEC).

2 .4.2 Stratification

Pour faciliter l'organisation administrative en général et la gestion du personnel en particulier, la stratification du lac Tanganyika a été faite suivant la répartition administrative des réglons ou zones. C'est ainsi que nous avons:

- **pour la partie nord du lac:**

  la région administrative du Sud-Kivu, qui ne possède plus des sous—régions après le dernier découpage, comprend la zone d'Uvira (frontière burundaise à Makobola 1) et la zone de Fizi (Makobola 2 à Mukungu), et s'étend sur environ 300 km de côte. Les cités d'Uvira et Baraka, respectivement pour la zone d'Uvira et Fizi, sont les grands centres administratifs bornant le lac Tanganyika.

— **pour la partie sud du lac:**

  la région administrative du Shaba, dont la sous—région du Tanganyika est côtière au lac, comprend la zone de Kalemie (Mukoko à Katondo) et la zone de Moba (Sikisimba à la frontière Zambienne), a une longueur de la côte d'environ 495 km. Les 2 principaux centres, Kalemie et Moba, bornent aussi le lac.

Ainsi, la collecte des données statistiques est facilitée en plaçant les agents de pêche sous la responsabilité des chefs suivant cette stratification administrative.

2.4.4 Visite des zones de Kalemie et Moba

Au cours des dernières années et même dans le passé, les zones septentrionales du lac Tanganyika qui comprennent les zones d'Uvira et Fizi ont été étudiées à l'aide d'enquêtes cadres et des statistiques de pêche, tandis que les zones méridionales englobant les zones de Kalemie et de Moba n'ont pas été étudiées. C'est ainsi que nous nous sommes rendu sur le terrain pour recueillir les informations précises concernant cette région sud du lac. Vous trouverez en annexe III (3.1—3.2) les différents documents provenent de cette région.

Zone de Kalemie

A. Méthode de collecte des données

Plus haut, nous avons déjà souligné les grandes difficultés qui ne permettent pas de connaître l'image réelle des statistiques de pêche à cause de la non fiabilité des données disponibles.

Durant la dernière décennie, tous les opérateurs tant industriels qu'artisanaux ont opté pour un changement considérable de leur effort de pêche en se déplaçant des côtes septentrionales vers le sud, faisant de Kalemie la base principale de pêche (Reynolds, 1992).

Les statistiques des prises continuent à être recueillies journalièrement tout au long du lac sur une distance d'environ 205 km de côte et cela pour toutes les unités tant industrielles, artisanales que coutumières qu'on préfère appeler ici "individuelles" opérant dans cette zone. Ces données de prise sont récoltées par las agents ou gardes de pêche postés sur les plages de débarquement les plus importants et qui contrôlent le reste de la côte du lac. Cette zone comprend 5 plages principales et 65 lieux de débarquement des pêcheurs.

D'après les superviseurs des zones, les enquêteurs sur terrain essaient tant bien que mal d'atteindre toutes les plages même après une semaine. Alors qu'on sait que la plupart des pêcheurs débarquent au petit matin, les gardes pêche brillent par leur absence à certains lieux de débarquement. Des postes de terrain étant vacants, las relevés des plusieurs endroits ne sont pas pris ou sont négligés. Les enquêteurs sont supposés d'inscrire dans leur cahier des relevés statistiques pour chaque unité, les détails sur la capture de poissons par espèce et par genre de pêche. Un agent est chargé uniquement pour les captures concernant la pêche industrielle. Les détails sur las autres aspects tels que le nombre d'équipage, le nombre de coups de filets, la valeur de la capture etc.. ne sont pas prélevés. Le recensement des pêcheurs, qu'on peut considérer comme une enquête cadre partielle, se fait 2 fois par an. Il s'agit là d'un dénombrement pur et simple des pêcheurs, de leur bateaux, du matériel et équipement de pêche.

Donc il n'y a pas un modèle unique ou formulaire d'enregistrement des données quotidiennes ou mensuelles. A la fin de chaque mois, l'agent de pêche fait parvenir à son chef de cellule le rapport mensuel par personne interposée ou arrive lui même au bureau de l'ECNT à Kalemie car le problème de transport et de communication se pose avec acuité. Le chef de cellule rassemble les rapports mensuels des agents qui sont placés sous son autorité et essaie de dresser un rapport unique et l'envoie chez le superviseur de zone. Ce dernier prépare un rapport trimestriel pour toute la zone sous son autorité. Ce rapport parvient directement au coordinateur sous—régional qui doit le transmettre au coordinateur régional. Le rapport annuel est préparé et compilé au bureau de la coordination sous—régional pour être envoyé enfin, au chef lieu de la région, au bureau du

coordinateur. Ainsi la compilation finale ainsi que le traitement et l'analysa sont supposés être effectués à Kinshasa, pour les rares rapports qui parviennent à atteindre la destination . Pour les pêcheries de Kalemie, des Enquêtes Cadre proprement-dit (EC) et d'Evaluation des Captures (EEC) ne sont pas encore entreprises jusqu'à ce jour.

Quant à la collecte des données de longueur/fréquence, elle n'est pas d'application.

Il est à noter qu'une autre activité de la production des poissons du lac Tanganyika est celle de l'exploitation des poissons d'aquarium. Avant, 4 sociétés s'exerçaient cet activité à Kalamie. Leurs produits étaient exportés vers l'Europe. Mais en raison de la situation actuelle dans le pays, 2 sociétés avaient interrompu leurs activités (Zaïre Cichlids et Aqua-Oasis), 1a repris timidement ses activités (ILFEC) et une autre s'est déplacée et s'est établie à Uvira (Tropical Fish-Zaïre).

B. Données disponibles

Les données disponibles concernant les captures de poissons et le recensement des pêcheurs sont difficilement trouvables dans las archives des bureaux de l'environnement à Kalemie. L'inexistence de certains archives est dû aux facteurs suivants: l'instabilité des cadres administratifs à la tête de leur entité, las pluies torrentielles du mois d'avril 1989 qui ont emporté plusieurs paperasses des bureaux et au pillage du mois d'octobre
1991.

Malgré cela, certaines données sont disponibles mais incomplètes et ne présentant pas une chronologie pour donner une explication logique des tendances au cours des années. Ces données, qui seront publiées dans un rapport récent intitulé "Rapport sur les données historiques des statistiques et économie de pêche de la partie zaïroise du lac Tanganyika" concernent la production des poissons par espèce et par type de pêche, le recensement des unités de pêche, la commercialisation des poissons et enfin les statistiques sur l'exploitation des poissons d'aquarium.

Concernant les données de commercialisation des poissons, des enquêteurs chargés de procéder aux relevés de cas données le font par l'intermédiaire des associations des coopératives des pêcheurs pour las pêcheurs artisanaux et directement avec les pêcheurs industriels.

Zone de Moba

A. Méthode de collecte des données

Comme pour la zone de Kalemie, les données de capture continuent à être collectées quotidiennement tout au long du lac sur une distance d'environ 285 km de côte. Les agents de pêche sont basés sur 4 plages principales et contrôlent près de 78

lieux de débarquement des pêcheurs. Chaque agent tout en prélevant les statistiques, essaie de se déplacer d'une plage àl'autre pour accomplir le même travail. Cependant, les informations recueillies de la sorte doivent être considérées comme une estimation indicative plutôt que représentative. Un tel système est plutôt dynamique que statique.

Actuellement, à part les 5 unités industrielles et les 4 unités artisanales (catamarans) recensées, la plupart d'unités de pêche sont des individuelles et utilisent les filets maillants, les lignes de fond et les cannes à pêche. Cependant, la production de cas dernières échappe au contrôle des agents de pêche car ces unités sont dépourvues des moteurs et très souvent terminent la pêche très tard dans la journée.

Le système d'échantillonnage des unités et le prélèvement des fréquences des longueurs n'ont jamais été appliqués. L'agent de pêche se limite seulement aux activités de routine (estimation de la capture et prélèvement des taxes).

Le recensement des unités de pêche et leurs équipements a lieu 2 fois l'an comme à Kalemie, L'Enquête Cadre proprement dite ainsi que l'Enquête d'Evaluation des Captures n'ont jamais au lieu dans cette zone.

Ici les données sur la commercialisation des produits de pêche sont plus faciles avec les industriels et les artisanaux qu'avec les individuels.

2. Données disponibles

Pour la zone de Moba, les données disponibles sont facilement trouvées dans quelques archives du bureau de l'ECNT, Toutefois, elles sont aussi incomplètes comme le cas de Kalemie. Elles seront aussi publiées dans le rapport historique sur les données historiques des statistiques et économie de pêche de la partie zaïroise du lac Tanganyika. Ces statistiques concernent l'évolution de la production des poissons, du nombra des pêcheurs et leurs engins de pêche et des poissons commercialisés. Les statistiques des produits commercialisés sont aussi fournis par les coopératives des pêcheurs.

3. CONCLUSIONS ET RECOMMANDATIONS

Ce rapport a examiné l'état actuel fondamental de l'administration des pêchas zaïroises en général et du lac Tanganyika en particulier. Il explique las différents systèmes de collectes des données statistiques dans les différentes zones visitées, leur état fragmentaire, leur non fonctionnement et, donne les causes majeures de la non fiabilité des données statistiques. Toutes les zones ont été visitées au cours de la mission entreprise dans le Cadre du Projet Recherche Tanganyika entre mai et juin 1993.

Autant que possible, des informations nécessaires et certaines données disponibles ont été obtenues lors de cette mission.

3.1 Organisation interne de la structure administrative

Dans l'organisation générale du service de pêche au Zaïre, il est souhaitable de réorganiser la Division de Pêche en lui dotant d'une structure cohérente à partir du niveau central jusqu'au niveau régional, sous—régional et des zones décentralisées. Le service des statistiques au niveau central doit pouvoir remplir le rôle qui est le sien: la récolte des données en utilisant des méthodes statistiques sur les captures/efforts de pêche, la composition d'espèce (taille, poids), le type d'embarcation, le lieu de pêche, le prix du poisson, etc..., le traitement et l'analyse des données et enfin la diffusion des résultats aux utilisateurs. Le service doit pouvoir bien garder les archives ainsi que la gestion d'une bibliothèque.

Au niveau régional ou s/régional qui englobe en son sein le personnel de terrain (agents de pêche, chefs de cellule et superviseurs), on doit veiller au contrôle de la collection des données, à l'établissement des rapports, leur expédition ainsi que la tenue des archives.

Pour le lac Tanganyika, RLT devrait, dans le cadre de son intervention, essayer d'améliorer les infrastructures fondamentales dans les bureaux de l'ECNT des zones côtières.
Il faut des classeurs, des rayonnages et des machines à écrire et à calculer.

3.2 Système de collecte des statistiques

Actuellement, aucune région du pays n'effectue d'une manière satisfaisante la collecte des données statistiques sur la pêche. A travers les observations et les sources indirectes, ont peut déduire que le travail d'enquêtes sur la pêche et l'établissement de rapports des résultats y relatifs sont encore plus problématiques au Zaïre (Reynolds, 1992). D'une manière générale, le système des statistiques fonctionne mal dans l'ensemble du pays à cause des raisons évoquées plus haut, à savoir: manque de contrôle et d'appui technique en matériel de terrain. Les transports et les voies de communications sont difficiles et souvent lentes. Les informations ne sont toujours

pas disponibles. Les informations existantes paraissent incomplètes tant pour évaluer le degré d'exploitation des ressources halieutiques que pour harmoniser la planification du développement. L'insuffisance du personnel et la non qualification de la grande partie de celui—ci, sont aussi les obstacles majeurs auxquels se heurte la mise au point des données statistiques. Il faut donc renforcer la prise des données avec un moyen humain et matériel adéquat, augmenter le contrôle sur les agents opérant sur le terrain. Il faut standardiser les informations statistiques recueillies par l'utilisation d'un formulaire unique pour l'ensemble des régions. Il faudra en plus traiter les données dès leur arrivée, préparer, publier et distribuer régulièrement un bulletin des statistiques de pêche pour permettre la circulation de l'information. La création d'une banque de données au niveau national est une nécessité impérieuse, car elle pourra servir aux utilisateurs sans qu'ils se déplacent pour chercher l'information de pêche sur le terrain.

Concernant les zones côtières du lac Tanganyika plus particulièrement, bien que les gardes pêche sont placés sur les sites de débarquement principaux et essaient de sillonner toute les plages environnantes, le système fonctionne aussi mal et n'est pas clairement défini. Les mêmes causes se font aussi remarquées ici. Pour cela, RLT devrait songer à la formation de ces agents du terrain, à la fourniture du matériel nécessaire pour l'accomplissement de leur tâches (bascule, balance, planche de mesure, calculatrice, etc...). Aussi, le système d'un plan d' échantillonnage des paramètres tels que unité de pêche, plages à contrôler et jours de collecte des données ne sont pas d' application, RTL devrait mettre un accent particulier sur cette façon de procéder car il réduit les difficultés en donnant un résultat estimatif à extrapoler pour l'ensemble. Aussi, les données sur las fréquences des longueurs n'étant pas prélevées, RLT devrait introduire ce système car il donna des informations nécessaires sur la biologie des espèces. En raison des distances entra les plages et de l'inaccessibilité par route, RLT devrait doter les services de l'ECNT de cas zones d'un petit canoe àmoteur (hors—bord) pour pouvoir chercher à améliorer la collecte des données, la surveillance des captures, le transport d'une plage à l'autre et permettre l'acheminement des données le plus vite possibles aux bureaux de zone ou de s/régions concernés. Ensuite, pour éviter les pertes des rapports et documents divers, il est souhaitable de créer au niveau du lac Tanganyika un centre parallèle de traitement et d'analyse des données en provenance des différents services de l'ECNT des régions côtière de ce lac. Pour cela RLT devrait poser et expliquer le bien fondé de cette suggestion aux autorités compétentes de notre pays. Une fois accepté, ce centre pourra être basé dans l'une des zones côtières au lac Tanganyika, de préférence à Uvira plus particulièrement au CRSN, institution s'occupant de la recherche sur la pêche. Et RLT pourra intervenir en dotant ce centre des moyens nécessaires pour cette nouvelle tâche. Enfin, comme le lac Tanganyika est partagé par 4 pays: Burundi, Tanzanie, Zaïre et Zambie il serait souhaitable que RLT puisse élaborer et proposer aux responsables zaïrois, une approche standardisée des collectes des statistiques et d'établissement des rapports à utiliser pour l'ensemble du lac.

GCP/RAF/271/FIN/TRAM/30

Report of Travel

to

Kigoma (Tanzania)

(11. 08.–14. 08. 1993)

by

Mervi Heinonen
Librarian

and

Marc Gonçalves
Executive Assistant

GCP/RAF/271/FIN.10

cc. Blessich, FIOA
Kapetsky, FIR
Collins, FIDI
Lindqvist/Mölsä, Kuopio
Katonda, TAFIRI, Kigoma
Mannini/Kurki, LTR, Kigoma
Chrono
Trains
DC-1

1. INTRODUCTION

1.1 Objectives

The objectives of the travel were:

(1.1.) to make an inventory check list of, and consequently
(1.2.) to mark all project equipment at Kigoma, and
(2.1.) to (re)organize TAFIRI library holdings,
(2.2.) to install ProCite library software on a projectcomputer and consequently
(2.3.) to instruct staff on use of the program

1.2 Itinerary

	Arrival	Departure
Bujumbura		11.08.93
Kigoma	11.08.93	14.08.93
Bujumbura	14.08.93	

1.3 Persons met

Mr. P. Mannini, Expert, Limnologist, GCP/RAF/271/FIN
Ms. H. Kurki, APO, Limnologist, GCP/RAF/271/FIN
Mr. I. Katonda, Director, TAFIRI Centre, Kigoma
Mr. D. Chitamwebwa, Scientist, TAFIRI
Ms. J. Mugasha, Librarian, TAFIRI Centre, Kigoma

2. RESULTS

2.1 Inventory of project equipment

An inventory check list was made of all project equipment found at Kigoma, and the information consequently entered into the project computer (for printout see annex I).

Each piece of equipment listed in the inventory check list was given a FAO/FINNIDA sticker with the pertaining inventory number.

2.2 Reorganization of library holdings

A cursory inventory of the holdings of the TAFIRI library was undertaken with Ms. Mugasha (in charge of the collection) and Ms. Kurki. Documents were organized according to the ASFIS Subject Category Classification used at project Documentation Centre at headquarters (HQ/DC). Further action concerning the arrangement and cataloguing of the holdings was discussed.

2.3 Installation of library software

ProCite library software was installed on the project computer

and running of the setup checked (including printer). An update of databases thusfar constructed at HQ/DC was provided as a beginning of the project's library network (for tentative network scheme see annex II).

A new database was also constructed for entering information of Kigoma holdings (excluding references concerning Lake Tanganyika).

2.4 Training

Ms. Mugasha, as well as Ms. Kurki and Mr. Mannini were instructed on the use of ProCite software and briefed on the database structure of the project library network.

3. CONCLUSIONS AND FOLLOW-UP

3.1 Keep up to date inventory check list of project equipment, and add number stickers to new acquisitions (Action: Mannini)

3.2. Send information of Kigoma library holdings to librarian at HQ/DC as follows:
— journals (name, vols./yrs., issues)
— FAO serials (name, numbers)
- Explor. Hydrobiol. Lac Tanganyika 1946-47 (vols., fasc.)
- maps (specifications to be given later)
(Action: Mugasha, Kurki)

3.3. Send materials needed to classify, catalogue and maintain library collection at Kigoma as follows:
— update of classification scheme
— nutshell instructions on use of ProCite for entering and searching of references
— list of journal acronyms for article entries to Kigoma database
— cardboard boxes and bookstands (Action: Heinonen)

3.4. Kigoma library is lacking established loan procedure. Make loan receipt original (to be photocopied) and consider purchase of shelf—markers to enable staff to take out documents on a self—service basis
(Action: Heinonen)

3.5. Several important L. Tanganyika documents lacking from HQ/DC were found at TAFIRI library. Make copies of these (Action: Heinonen)

INVENTORY CHECK LIST OF KIGOMA

FINNIDA GCP/RAF/271/FIN
GCP/RAF/221/AGF

QUANT	DESCRIPTION	RECEIVED	CONDITION	UTILISATION
	SCIENTIFIC EQUIPMENT			
1	REFRIGERATOR PHILIPS 307L	YES	A	C
1	WEIGHING SCALE SARTORIUS BA 210S	YES	A	C
1	WEIGHING SCALE SARTORIUS BA 6100	YES	A	C
1	HACH 2100A TURBITY METER	YES	A	C
1	HACH DR/2000 + ACCESSORIES	YES	A	C
2	WATER SAMPLER 2L	YES	A	C
2	WATER SAMPLER 7.4L	YES	A	C
1	SET OF PLANCTON NET	YES	A	C
1	CALORIMETER–THERMOMETER	YES	A	C
1	WILD M 3B MICROSCOPE	YES	A	C
1	WILD M 3B MICROSCOPE	YES	A	C
1	LEITZ LABOVERT FS MICROSCOPE	YES	A	C
1	WATER DISTILLATION MACHINE VEL	YES	A	C
1	HOT PLATE VEL	YES	A	C
1	MULTI CHANEL COUNTER/9V ADAPTOR	YES	A	C
1	FOLSOM SAMPLE SPLITTER	YES	A	C
1	VOLTAGE STABILISATOR MATSUNAGA	YES	A	C
2	ZOOPLANCTON COUNTING WHEEL	YES	A	C
3	PLANCTON CHAMBERS	YES	A	C
1	WEIGHINGS SCALE SARTORIUS 2100	YES	B	D
1	CALCULATOR SHARP EL 5100 S	YES	A	C
1	BLUE COOL BOX	YES	A	C
1	BIG TABLE + 6 STOOLS	YES	A	C
1	BIG TABLE	YES	A	C
1	AUT. WIND /WATER LEVEL RECORDER	YES	A	C
–	GLASSWARE	YES	A	C
–	CHEMICALS	YES	A	C
	OFFICE EQUIPMENT			
1	CANON FC–2 COPIER	YES	A	C
2	DESK LAMP MASSIVE	YES	A	C
1	TOOL SET	YES	A	C

DATE **SIGNATURE**

12 JULY 1993

QUANT.	DESCRIPTION	RECEIVED	CONDITION	UTILISATION
	COMPUTER EQUIPMENT			
1	PC COMPATIBLE 120 MB + COPROC	YES	A	C
1	PC COMPATIBLE 80 MB	YES	A	C
1	COLOR MONITOR	YES	A	C
1	COLOR MONITOR	YES	A	C
1	KEYBOARD	YES	A	C
1	KEYBOARD	YES	A	C
1	UPS ALINE	YES	A	C
1	PRINTER EPSON LQ 1070	YES	A	C
1	SPIKE PROTECTOR	YES	A	C
1	SPIKE PROTECTOR	YES	A	C
2	MOUSE + PAD	YES	A	C
	COMMUNICATION EQUIPMENT			
2	HIGH FREQUENCY RADIO KIGOMA (KIGOMA – KUNDUCHI)	YES	A	C
	BOAT EQUIPMENT			
1	GPS RAYTOR MODEL 390	YES	A	C
1	WINCH MARINE DEVICE	YES	A	C
1	SET OF SPARE MATERIAL – 2 IMPELLER KITS – 18 FUEL FILTERS – 8 OIL FILTERS – 2 COUROIES	YES	A	C
1	COMPAS	YES	A	C
2	BUYOS	YES	A	C
8	LIFE JACKETS	YES	A	C
	PROJECT HOUSE EQUIPMENT			
1	FRIDGE DOUBLE DOOR 240 L	YES	A	C
1	ELECTRIC COOKER	YES	A	C
2	BOILER	YES	A	C
	TRANSPORT			
1	TOYOTA LAND-CRUISER II	YES	A	C
1	LAND-ROVER 110	YES	B	C

DATE 12 JULY 1993

SIGNATURE

INVENTORY CHECK LIST

PROJECT HOUSE

REF.	QUANT.	DESCRIPTION	S/N
323	1	FRIDGE DOUBLE DOOR 240 L	8034–245–720
324	1	ELECTRIC COOKER	01310
325	1	BOILER	–
326	1	BOILER	

DATE: 12 JULY 1993

SIGNATURE:

INVENTORY CHECK LIST

COMMUNICATION

REF.	QUANT.	DESCRIPTION	S/N
315	1	HIGH FREQUENCY RADIO KIGOMA	36283
316	1	HIGH FREQUENCY RADIO KUNDUCHI	36396

DATE

12 JULY 1993

SIGNATURE

INVENTORY CHECK LIST

TRANSPORT

REF.	QUANT.	DESCRIPTION	S/N
317	1	TOYOTA LAND-CRUISER II	LJ79-0005577
318	1	LAND-ROVER 110 (SAUDHMC 7)	BA/3238
319	1	REHABILITATION OF R/V ECHO	-

DATE

12 JULY 1993

SIGNATURE

INVENTORY CHECK LIST

LABORATORY ROOM

REF.	QUANT.	DESCRIPTION	S/N°
327	1	REFRIGERATOR PHILIPS 307L	746969–479492
328	1	WEIGHING SCALE SARTORIUS BA 210S	20302846
329	1	WEIGHING SCALE SARTORIUS BA 6100	20504074
330	1	HACH 2100A TURBITY METER	920300022781
331	1	HACH DR/2000 + ACCESSORIES	920600020730
–	2	WATER SAMPLER 2L	–
–	2	WATER SAMPLER 7.4L	–
–	1	SET OF PLANCTON NET	–
–	1	CALORIMETER–THERMOMETER	–
332	1	WILD M 3B MICROSCOPE	–
333	1	WILD M 3B MICROSCOPE	–
334	1	LEITZ LABOVERT FS MICROSCOPE	520644/139553
335	1	WATER DISTILLATION MACHINE VEL	200864
336	1	HOT PLATE VEL	32/9303
337	1	MULTI CHANEL COUNTER/9V ADAPTOR	1021
–	1	FOLSOM SAMPLE SPLITTER	–
338	1	VOLTAGE STABILISATOR MATSUNAGA	SNC 1500N
–	2	ZOOPLANCTON COUNTING WHEEL	–
–	3	PLANCTON CHAMBERS	
339	1	WEIGHINGS SCALE SARTORIUS 2100	35120242
340	1	CALCULATOR SHARP EL 5100 S	7700079X
341	1	BLUE COOL BOX	–
342	1	BIG TABLE + 6 STOOLS	–
343	1	BIG TABLE	–
344	1	AUT. WIND /WATER LEVEL RECORDER	–

DATE

12 JULY 1993

SIGNATURE

INVENTORY CHECK LIST

COMPUTER ROOM

REF.	QUANT.	DESCRIPTION	S/N
305	1	PC COMPATIBLE 120 MB + COPROC.	RGA 82626
306	1	PC COMPATIBLE 80 MB	146020474
307	1	COLOR MONITOR	MC142011028
308	1	COLOR MONITOR	MC142022252
309	1	KEYBOARD	00470
310	1	KEYBOARD	00471
311	1	UPS ALINE	07525249C800
312	1	PRINTER EPSON LQ 1070	TF2522068
313	1	SPIKE PROTECTOR	–
314	1	SPIKE PROTECTOR	–
–	2	MOUSE + PAD	–

DATE

12 JULY 1993

SIGNATURE

INVENTORY CHECK LIST

APO ROOM

REF.	QUANT.	DESCRIPTION	S/N
304	1	DESK LAMP MASSIVE	–

DATE

12 JULY 1993

SIGNATURE

INVENTORY CHECK LIST

EXPERT BIOLOGIST ROOM

REF.	QUANT.	DESCRIPTION	S/N°
301	1	CANON FC-2 COPIER	RGA 82625
302	1	DESK LAMP MASSIVE	–
303	1	TOLL SET	–

DATE	SIGNATURE
12 JULY 1993	

INVENTORY CHECK LIST

BOAT EQUIPMENT

REF.	QUANT.	DESCRIPTION	S/N°
320	1	GPS RAYTOR MODEL 390	KN 30627
321	1	WINCH MARINE DEVICE	018
–	1	SET OF SPARE MATERIAL – 2 IMPELLER KITS – 18 FUEL FILTERS – 8 OIL FILTERS – 2 COUROIES	
322	1	COMPAS	–
–	2	BUYOS	–
–	8	LIFE JACKETS	–

DATE SIGNATURE

ANNEX II

LTR LIBRARY NETWORK
Tentative scheme

Station	**ProCite databases**
LTR-HQ/DC	Tanganyika 1) Buja 2) Maps 3) Datafiles 3)
Uvira	Uvira 2)
Kigoma	Kigoma 2)
Mpulungu	Mpulungu 2)

Notes:

1) Database contains all found references concerned with Lake Tanganyika with (not yet complete) information on availability for each station and eventually also keywords for each reference; kept up to date by HQ/DC

2) Databases contain non-L. Tanganyika documents physically available at each station; updated by each station

3) Databases contain compiled information on maps acquired by and unpublished data found at each station; updated by HQ/DC

4) All databases will progressively be made available to all stations