

RESEARCH FOR THE MANAGEMENT
OF THE FISHERIES ON LAKE
TANGANYIKA

GCP/RAF/271/FIN-TD/19(En)

GCP/RAF/271/FIN-TD/19 (En)

May 1994

REPORTS OF TRAVEL 31-45 OF PROJECT
GCP/RAF/271/FIN

by
George Hanek
(ed.)

FINNISH INTERNATIONAL DEVELOPMENT AGENCY

FOOD AND AGRICULTURE ORGANIZATION
OF THE UNITED NATIONS

Bujumbura, May 1994

The conclusions and recommendations given in this and other reports in the Research for the Management of the Fisheries on Lake Tanganyika Project series are those considered appropriate at the time of preparation. They may be modified in the light of further knowledge gained at subsequent stages of the Project. The designations employed and the presentation of material in this publication do not imply the expression of any opinion on the part of FAO or FINNIDA concerning the legal status of any country, territory, city or area, or concerning the determination of its frontiers or boundaries.

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) and the Arab Gulf Programme for United Nations Development Organizations (AGFUND).

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.

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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; and

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

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

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

GCP/RAF/271/FIN/TRAM/31

Report of Travel
to
Kigoma (Tanzania)
(28.08-01.09.93)

by

E. Coenen
Biostatistician

GCP/RAF/271/FIN.10

cc : Kato/Doeff/Blessich, FIO
Kapetsky, FIRI
Katonda, TAFIRI, Kigoma
Mannini, LTR, Kigoma
FAOR, Tanzania
Lindqvist/Mölsä, Kuopio
Plisnier, LTR, Mpulungu
Chrono
Trams

GCP/RAF/271/FIN

September, 1993

1. INTRODUCTION

1.1 Objective

The objective of this mission was to attend the first field coordinator I s meeting on the Scientific Sampling Programme (SSP) in Kigoma, planned to be held on 29 or 30.08.93 depending on the arrival of Dr. P.-D. Plisnier from Mpulungu by boat. P. Kotilainen, one of the field coordinators, arrived in Kigoma already a few days earlier to try to locate and lift the sunken thermistor chain off Kigoma.

1.2 Itinerary (by car)

	Arrival	Departure
Bujumbura		28.08.93
Kigoma	28.08.93	01.09.93
Bujumbura	01.09.93	

1.3. Persons met

- Mr.K.I. Katonda, Director, TAFIRI Center, Kigoma
- Mr.P. Mannini, Fisheries Biologist, LTR, Kigoma
- Ms.H. Kurki, APO,LTR, Kigoma
- Dr.P.-D. Plisnier, Limnologist, LTR, Mpulungu
- Mr.P. Kotilainen, APO, LTR, Bujumbura
- Mr.D.B.R. Chitamwebwa, TAFIRI, Kigoma
- Mr.A.D.B. Kihakwi, TAFIRI, Kigoma
- Mr.M.B.S. Kissaka, TAFIRI, Kigoma
- Mr.N.B. Challe, TAFIRI, Kigoma
- Mr.M. Chattha, TAFIRI, Kigoma

other TAFIRI staff, Kigoma

2. RESULTS

2.1. Lifting of thermistor chain

On Sunday morning 29.08.93, a first attempt to go out and lift the thermistor chain was cancelled due to the fact that the two auxiliary boats needed to lift the chain did not show up.

The next attempt was made on Tuesday 31.08.93: together with 2 auxiliary boats and the Kigoma LTR R/V Echo, the thermistor chain was located with the echosounder Simrad EY 500. The smallest boat remained stationary at the exact sunken chain location, using GPS. The other two boats towed a long rope, attached between them and made heavier with several 25 kg weights to sink to the bottom. The two boats, each on one side of the positioning boat, then towed the rope over the bottom and encircled the positioning boat, dragging for the sunken chain. Something was caught in the rope (the chain?), but when hauling the rope it suddenly broke! For various reasons, a second dragging attempt was cancelled.

2.2. Field coordinators' meeting

On Monday 30.08.93, from 8.00 to 16.00, the 5 scientific field coordinators held their first meeting on the SSP in the Conference Room at TAFIRI Center, Kigoma.

The objective of the meeting was to assess the progress of implementation of the scientific sampling programme (SSP), find ways of simplifying (reduce intensity and/or frequency of certain parameters to measure) and reducing the cost of the present and future programme (since extra activities will be added in the future e.g. carbon/energy budget, surface TO/chlorophyll a calibration for remote sensing, data analysis and reporting, etc.) and to find solutions for common practical/theoretical problems in the execution of the SSP.

The responsible officer of each station presented a general evaluation/assessment of the SSP in his station and afterwards each subcomponent was discussed in detail (limnology, fish biology, zooplankton, hydrodynamics, genetics, statistics, carbon/energy, remote sensing). Copies of all subcomponent's data gathered up to now per station were distributed to the field coordinators of other stations.

A final and important point of discussion was the question: "Who will analyze and report on the data collected?". The general impression was that the researchers at all stations are very much interested to participate in analyzing and reporting on the data collected.

The conclusions of the meeting served to update the document on the "General procedures of the Scientific Sampling Programme at all stations" which, for the moment, was only circulated to the field coordinators and Kuopio. A final version will be elaborated after the visit of Lindqvist/Mölsä (Kuopio) to the project around mid-October 1993.

3. **FOLLOW-UP**

Consider replacing sunken thermistor chains and/or making other attempts to lift them;

(Action: Project Coordinator, Huttula, Lindqvist/Mölsä)

- * organize regularly field coordinators meetings to assess progress of SSP;

(Action: Project Coordinator, Coenen, LTR Bujumbura)

- * organize mission of each field coordinator to the other stations to assess/standardize/solve problems related to his/her subcomponent (preferably by the end of 1993);

(Action: Project Coordinator, Coenen, LTR Bujumbura)

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FISHERIES ON LAKE TANGANYIKA
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GCP/RAF/271/FIN/TRAM/32

Report of Travel
to
Uvira, Zaïre (9.9.93) and to
Kigoma, Tanzania (14-15.9.93)

by

George Hanek
LTR Coordinator

GCP/RAF/271/FIN.10

cc: Doeff/Blessich, FIOA
Kapetsky, FIRI
Everett, FIPP
Fitzpatrick/Turner, FIIT
Lindqvist/Mölsä, Kuopio
FAOR/Zaïre
FAOR/Tanzania
Maembe/Bwathondi, Dar
Katonda, Kigoma
Bowman, URT/066/NET
Coenen/Kotilainen, Bujumbura
Mannini/Kurki, Kigoma
Plisnier, Mpulungu
Chrono
Diary:Hanek

GCP/RAF/271/FIN

September, 1993

1. INTRODUCTION

1.1 Objective

The objectives of these short missions were: in Uvira, Zaïre : to resolve the communication (=radio) problems; and in Kigoma: (1) to assess the damage to R/V Echo; (2) to resolve the communication (=radio) problem; and (3) to discuss LTR activities with LTR/Kigoma personnel.

1.2 Itinerary

	Arrival	Departure
Bujumbura		9.9.93
Uvira	9.9.93	9.9.93
Bujumbura		14.9.93
Uvira	14.9.93	15.9.93
Bujumbura	15.9.93	

1.3 Persons met

in Uvira:

Dr. Gashagaza Masta Mukwaye Director of CRSN/Uvira

in Kigoma:

Mr. I.K. Katonda Director, TAFIRI/Kigoma
Mr. P. Mannini Fisheries Biologist, LTR
Ms. H. Kurki APO/Fisheries Biologist, LTR
Mr. G. Bowman CTA, URT/066/NET

+ all others at TAFIRI/Kigoma

2. RESULTS

2.1 in Uvira

One of the most frustrating problems has been resolved as the communication between CRSN/Uvira and LTR's HQ has been finally established. This is thanks to mainly to Mr. J-P. Kayonde, a highly qualified Burundese technician, who was willing to accompany me to Uvira and who made CRSN's radio 'compatible' with ours, thus saving the project some \$6,000.

It was agreed that there will be three regular contacts a week i.e. on Mondays, Wednesdays and Fridays, from 8:45 a.m. to 9:00 a.m. using frequency 4486 KHZ and, using the same frequency, our LTD HQ's radio will be on all the other days in case of emergency. Secondly, it was found that a new crystal has to be ordered for CRSN radio (12130 KHZ) in order to assure the communication with Kinshasa.

2.2 in Kigoma

The following aspects were treated during this visit as follows:

- * radio communications - we have also experienced 'communication problems' with LTR/Kigoma. Consequently, Mr. Kayonde accompanied me also to Kigoma, and, as in Uvira, resolved our problems there. To facilitate our communication between LTR/Bujumbura and LTR/Kigoma a number of intermediate frequencies was tested; two were selected and 'registered'. These are 7000 KHZ and 8750 KHZ. Both work very well, even in the afternoon, and also seem to work very well between LTR/Kigoma and LTR/Mpulungu.
- * R/V Echo - the main reason to Visit LTR/Kigoma was to assess the damage of our R/V Echo. Preamble: it was agreed that LTR provides logistical support, at cost, to the members of evaluation mission of URT/066/NET (Messrs. Roest and Moore). As they were hard at work, evaluating the chimpanzees in Gombe National Park., R/V Echo's propeller shaft bracket broke... Upon my arrival to Kigoma this embarrassing situation was already under control. R/V Echo was on dry dock and its propeller shaft bracket was been replaced. The broken one was brought to Bujumbura for repairs. URT/066/NET will be billed accordingly.
- * 24 hours sampling - my visit coincided with our second 24 hour sampling cycle; it was carried out as scheduled, using boat of Kigoma police this time. This very difficult tasks was carried out exclusively by the personnel of TAFIRI/Kigoma.
- * URT/066/NET - once again this project is to finish, apparently end of October 1993 this time. A very brief meeting was held with the members of the evaluation mission upon their arrival to Bujumbura. Subsequently, I have met, also very briefly, Mr. G. Bowman, this project's CTA. It should be recalled that LTR contributed some \$10,000 towards the purchase of a Landrover several years ago. This car has been used sporadically from November 1991 (=Reynolds consultancy) by LTR since its operating costs are prohibitive (note: Reynolds took possession of this car with some 150, 000 km + on it..) . Since URT/066/NET is now using another Landrover (it is a Defender, a very good one) it was suggested that it should be transferred to us. But since there is already strong request from the Government it is suggested that the due funds are recovered from the funds which are apparently still available on this project.
- * Shariff Construction Ltd. - has rehabilitated our facilities in Kigoma and Mpulungu. There are some minor problems with the installations at LTR'B guesthouse, wash rooms in the main office building, etc. It was agreed that since LTR still has not settled with Shariff Construction Ltd. the funds required to make these repairs (=waterheater, etc.) will be withheld. Should Shariff Construction Ltd. not make these changes within the next two weeks LTR/Kigoma will do it using somebody else and the corresponding charges deducted from the

final bill. Lastly, it was stressed that regular maintenance of all LTR/Kigoma facilities and equipment is a must.

* meeting with all LTR/Kigoma personnel - was held. Numerous aspects were discussed. The important ones were the following:

- Lusaka meetings - all personnel was fully briefed on the two important upcoming meetings;
- maintenance of LTR facilities and equipment - was stressed and proposed that one person be named to take care of this very important matter;
- participation of TAFIRI/Kigoma in sampling activities - is excellent so far. For obvious reasons, our system of Performance Related Allowance was the main topic;
- LTR Newsletter - contribution of Mr. Challe was acknowledged, two additional ones were received (by Messrs. Chitamwebwa and Kissaka) and future contributions solicited; and
- historical data - several contributions were prepared by TAFIRI staff last year. A heavy editing followed (by Coenen) and we are now at second or even third rewrites. It was agreed that this aspect will be resolved with after our Lusaka meeting i.e. end of October 1993.

* other matters - were dealt with LTR/Kigoma personnel and Mr. Katonda as follows: (1) LTR substation in Kipili - is working very well; it was agreed that Mr. Nzota is invited to LTR/Kigoma for one week for ,on-the-job-training in mid-October 1993; (2) up-date of Lake Tanganyika Fisheries Directory was completed for Tanzania; (3) duty travel schedule for LTR/Kigoma has been revised as follows: Mannini (Dar:16-27.9.93; Mpulungu: November, 1993); Kurki (Bujumbura: mid-October; Kipili and Mpulungu: end November or early December 1993); (4) HL schedule for LTR/Kigoma is as follows: Mannini: December,93 January 94 and Kurki: February-March 1994; (5) contract extension for Kurki: will be recommended once her progress report is submitted; (6) phone charges by Salminiitty: Mannini was directed to inform FAOR/Tanzania that this project will no longer accept these charges; (7) upcoming visit to Kigoma of Prof. Bwathondi was discussed; and lastly (8) proper channels of communications were once again explained.

3. CONCLUSIONS AND FOLLOW-UP

- 3.1 Prepare new schedule for radio communication among LTR stations.
(Action:LTR Coordinator)

- 3.2 Repair propeller shaft bracket and send it to LTR/Kigoma.
(Action:Roger Varayannis)
- 3.3 Ensure supervision and presence by LTR personnel of field work activities at LTR/Kigoma.
(Action: LTR Biostatistician)
- 3.4 Recover \$10,000 from URT/066/NET.
(Action:Project Operations officer)
- 3.5 Prepare detailed listing of construction/rehabilitation defects at LTR/Kigoma facilities.
(Action:Mr. K.I. Katonda)
- 3.6 Select one person to carry out regular maintenance of LTR/Kigoma facilities.
(Action:Mr. Mannini)
- 3.7 Finalize 'historical data' contributions from TAFIRI/kigoma personnel.
(Action:LTR Biostatistician)
- 3.8 Arrange one week 'on-the-job, training for Mr. Nzota at LTR/Kigoma.
(Action:Messrs. Mannini and Katonda)
- 3.9 Request TA's for Mannini and Kurki.
(Action:LTR Coordinator)
- 3.10 Propose contract extension for Heini Kurki.
(Action:LTR Coordinator)
- 3.11 Control project expenses incurred by FAO Representation.
(Action: Mannini)
- 3.12 Prepare visit of Prof. Bwathondi to Kigoma.
(Action: Messrs. Mannini and Katonda).

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GCP/RAF/271/FIN/TRAM/33

Report of Travel
to
Rome (Italy)
and
Bujumbura (Burundi)
(14.11 - 20.11.1993)
by
Petra Paffen
APO - Fisheries Biologist

GCP/RAF/271/FIN/10

cc: Blessich, FIOA
Kapetsky, FIRI
Lindquist/Mölsä, Kuopio
LTR, Kigoma
LTR, Mpulungu
Chrono
TRAMS
Diary: Paffen

GCP/RAF/271/FIN

December, 1993

1. Introduction

1.1 Objective

The objectives of this travel were: 1) to attend a general briefing at FAO Headquarters in Rome concerning the work of an APO; 2) to be briefed about the activities of project GCP/RAF/271/FIN; and 3) to proceed to my duty station in Bujumbura, Burundi.

1.2 Itinerary

	Arrival	Departure
Amsterdam		14.11.93
Rome	14.11.93	19.11.93
Bujumbura	20.11.93	

1.3 Persons met

in Rome

Dr. Y. Kato, Director, FIO
Mr. M. Doeff, SPOO, FIOA
Mr. M. Mann, SPOO, FIO
Dr. J.M. Kapetsky, SFRO, FIRI
Mrs. Ingretolli, PO
Mr. Padroni, FIDX
Mrs. L. Zappalenti, Recruitment RO, DDFR
Ms. G. Guidugli, Financial OFSD
Ms. D. Di Biase, Special Programmes Service LO, FPDD
Mr. T.E.C. Elliot, Language LT, PD
Mr. P.R. Janus, APR of the Netherlands to FAO

in Bujumbura

Dr. G. Hanek, LTR Coordinator, GCP/RAF/271/FIN
Mr. E. Coenen, Biostatistician, GCP/RAF/271/FIN
Mr. P. Kotilainen, APO-Fisheries Biologist, GCP/RAF/271/FIN
Mr. M.M. Congalves, Executive Assistant, GCP/RAF/271/FIN
Mr. M.H. Mafurugutu, Clerk, GCP/RAF/271/FIN
Ms. B. Baricako, Secretary, GCP/RAF/271/FIN
Ms. M. Bankumuhari, Receptionist, GCP/RAF/271/FIN
Mr. R. Kanyaru, Director, Département de la pêche et de la Pisciculture (DPP)
Mr. B. Nyakageni, Adviser, DPP
Mr. L. Kabandana, Fisheries Assistant, DPP
Mr. J.M. Tumba, Fisheries Assistant, DPP
Mr. E. Nikomezé, Fisheries Assistant, DPP
Mr. E. Gahungu, Fisheries Assistant, DPP
Mr. B. Ndimunzigo, Fisheries Assistant, DPP
Mr. P. Biabatantou, FAO Representative

Ms. T. Sibomana, Administrative Officer, FAOR
Mr. M. Sow, AR of Administration and Finance, UNDP
Dr. L. Risch, Project Coordinator, Project CEPGL/Belgium
Dr. A. Vandelannoote, Project CEPGL/Belgium
Dr. L. De Vos, Project CEPGL/Belgium
Mr. J.P. Marquet, CTP/CTA, PNUD/FAO/BDI/89/019

2. Results

2.1 in Rome

Several staff members of the Fisheries Department were met. They introduced the organizational structure of the Department, the LTR project's ongoing activities, operational matters in general, and provided reports prepared by the LTR project.

Members of other Departments updated my personal files, briefed me on financial matters, explained the FAO structure and its aims, the entitlements and duties of APO'S, and the reporting system.

The Alternate Permanent Representative of the Netherlands to FAO provided information concerning entitlements and career possibilities.

2.2 in Bujumbura

Dr. G. Hanek, Coordinator of the LTR Project, continued the briefing by providing additional information and by introducing me to the staff members of the LTR project, to the staff of the Burundian Fisheries Department, and to FAO and UNDP representatives. The staff of other regional and national projects which are collaborating closely with GCP/RAF/271/FIN were met. The reporting system of the LTR project was explained, and some initial duties and literature were given.

Mr. E. Coenen, LTR biostatistician, explained the basics of LTRIS Scientific Sampling Program (SSP) and briefed me on the fish biology and limnology subcomponents. He introduced me to the national counterpart staff and to the members of the Project CEPGL/Belgium.

Mr. P. Kotilainen provided an introduction to the computer system used and to the hydrodynamics/meteorology subcomponent of the LTR project.

All three provided guidelines concerning living conditions in Bujumbura.

3. Revised terms of reference

On 30.12.93, the progress and present status of LTR'S SSP was discussed. It was decided that the Bujumbura station will have two staff members responsible for each subcomponent. In case of absence of the first one (I), the second one (II) will take over responsibilities. This resulted in the following schedule of responsibilities concerning my work:

fish biology	(I)
genetics	(I)
fisheries statistics	(II)
zooplankton	(II)
hydrodynamics/meteorology	(II)
temperature/chl.a calibration	(II)

My revised terms of reference should therefore be read as follows:

" Under the general direction of the Project Coordinator, and in close collaboration with counterpart national research officers, and other international experts, the APO's duties at Bujumbura station will be:

1. the responsibility for the collection and processing of data on fish biology and genetics.
2. to assist in carrying out the fisheries statistics, zooplankton, hydrodynamics/meteorology, and temperature/chlorophyll a calibration subcomponents of the research program.
3. to contribute in providing training for counterpart when necessary (e.g. laboratory work, computer handling, data analysis, application of statistical methods).
4. to perform any other duties as required.

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GCP/RAF/271/FIN/TRAM/34

Report of Travel
to
Mpulungu, Zambia
(24.11.93-01.12.93)

by

Piero Mannini
Fisheries Biologist

GCP/RAF/271/FIN.10

cc: Doeff/Blessich FIOA
Kapetsky, FIRI
FAOR, Tanzania
FAOR, Zambia
Hanek, Bujumbura
Plisnier, Mpulungu
Lindqvist/Mölsä, Kuopio
Aro, Helsinki
TRAMS
Chrono
Diary: Mannini

GCP/RAF/271/FIN

December, 1993

1. INTRODUCTION

1.1 objectives

The objectives of the mission were: (1) to visit Lake Tanganyika Research (hereafter LTR) facilities in Mpulungu and to evaluate with LTR national and international staff the activities performed and results achieved during the first four months of implementation of LTR's scientific sampling programme; and (2) to propose and discuss the forthcoming changes in some of the LTR scientific sub-components, with special reference to fish biology.

1.2 Itinerary (by boat)

	Arrival	Departure
Kigoma		24.11.93
Mpulungu	26.11.93	29.11.93
Kigoma	01.12.93	

1.3 Persons met

Dr. P-D. Plisnier, Limnologist, LTR
Ms. E. Bosma, APO-Biologist, LTR
Mr. P. Verburg, APO-Biologist, LTR
Mr. G. Milindi, Researcher, DOF Mpulungu
Mr. D. Kabakwe, Fisheries Officer, DOF Mpulungu
Mr. L. Mwape, Researcher, DOF Mpulungu
Mr. W. Chomba, Fisheries Assistant, DOF Mpulungu
Mr. M. Mwenda, Fisheries Assistant, DOF Mpulungu
Mr. M. Syapila, Fisheries Assistant, DOF Mpulungu

2. RESULTS

Dr. Plisnier, LTR limnologist, demonstrated the station facilities and the organization of the work routine.

Fish biology data, previously processed and analyzed by the sub-component's field coordinator, have been evaluated and discussed.

The whole work routine on fish biology, as carried out by the station staff, has been examined. Sampling scheme adjusted to better conform with local commercial fishery patterns which are remarkably different from the rest of the Lake.

Possible forthcoming changes in fish biology work, mainly concerning some additional biological data to be collected, have been proposed. The feasibility and sustainability by the station team of such expansion of the work has been assessed.

Present implementation of the scientific sampling programme in Kigoma and Mpulungu LTR stations was compared. Major difficulties, common to both stations, were stressed, i.e. (1) primary production data and oxygen-depth profiles are not yet

collected due to unavailability of proper equipment; and (2) insufficient computer facilities, as local counterparts get more acquainted and trained in computer handling and scientific subcomponents increasingly call for data management and processing.

3. CONCLUSIONS AND FOLLOW-UP

Overall, LTR Mpulungu station now has sufficient staff which was recently further strengthened by the arrival of two new APO biologists.

The fish biology research team consists of two graduate researchers (one national and one APO) and three fisheries assistants. Their skill in laboratory work is very good to properly implement the activities of the sub-component. At this station, further expansion of data collection work can be sustained without excessive problems.

Some minor problems have been noted during the first four months of data collection; they can be easily solved once:

- (1) Data collection routine should follow the guidelines given in Arols LTR Field Manual 04 and subsequently updated in Mannini's office Memorandum dated 12.06.93 and in Field Manual 08. This is for the sake of achieving good standardization of sampling procedures in all LTR stations.
- (2) Data collected need to be regularly checked for mistakes before forwarding them to the field coordinator. Indeed, the data cross-check system established at the station, once implemented, is very effective.
- (3) More skill in file management is required as, especially in case of fish biology, the number of records and files is very large.

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GCP/RAF/271/FIN/TRAM/35

Report of Travel
to
Kuopio and Tampere (Finland),
(09.09.1993, 02-05.11.1993)

Horten (Norway)
(03-16.10.1993)

and

Rome (Italy)
(06-10.11.1993)

by

Pekka Kotilainen
APO - Fisheries Biologist

GCP/RAF/271/FIN.10

CC: Kato/Doeff/Blessich, FIO
Kapetsky, FIRI
Lindqvist/Mölsä, Kuopio
LTR, Kigoma
LTR, Mpulungu
Diary: Kotilainen
chrono, LTR, Bujumbura
Trams, LTR, Bujumbura

GCP/RAF/271/FIN

November, 1993

1. INTRODUCTION

1.1 Objectives

The objectives of the duty travel during my home leave were: (1) to take part in a LTR meeting in Kuopio, to meet LTR's Scientific Coordinator, his deputy and finnish consultants; 2) to take part in a course in hydroacoustics in Norway; 3) to analyze the data collected in hydrodynamics for preparing a technical document; and, on the way back to my duty station; 4) to meet FAO HQ's staff in charge of LTR's operation and administration.

1.2 Itinerary

	Arrival	Departure
Bujumbura		05.09.93
Helsinki	05.09.93	08.09.93
Kuopio	09.09.93	09.09.93
Helsinki	10.09.93	03.10.93
Horten	03.10.93	16.10.93
Helsinki	16.10.93	02.11.93
Tampere	02.11.93	05.11.93
Helsinki	05.11.93	07.11.93
Rome	07.11.93	10.11.93
Bujumbura	11.11.93	

1.3 Persons met

in Kuopio and in Tampere

Dr. O. Lindqvist, Project's Scientific Coordinator, Kuopio University
Mr. H. Mölsä, Project's Deputy Scientific Coordinator, Kuopio University
Mr. E. Aro, Scientist, FGFRI, Finland
Ms. L. Kuusipalo, Scientist, Joensuu University
Mr. T. Huttula, Scientist, National Board of Waters and Environment, Water and Environment District of Tampere
Mr. K. Salonen, Scientist, Biological Station of Helsinki University
Dr. J. Sarvala, Scientist, Turku University
Dr. I. Vuorinen, Director of Research Institute of Archipelago, Turku University
Ms. A. Peltonen, Scientist, National Board of Waters and Environment, Water and Environment District of Tampere
Mr. V. Podsetchine, Scientist, National Board of Waters and Environment, Water and Environment District of Tampere
Mr. V. Tuomainen, Scientist, Technical High School of Lappeenranta

in Horten

Mr. R. Brede, Director of Department, SIMRAD
Mr. E. Stenersen, Sales Manager, SIMRAD
Mr. H. Solli, Engineer, SIMRAD
Mr. R. Nielsen, Engineer, SIMRAD

Mr. E. Ona, Fish biologist, Institute of Marine Research, Bergen

in Rome

Mrs., D. Blessich, POO, FIO
Mr. M. Doeff, POO, FIO
Dr. J. Kapetsky, FIRI
Dr. I. Venema, FIRI
Mr. J. Turner, FITT
Mr. A. Smith, FITT
Mr. F. Manchini, FIDX
Mr. F. Criscuolo, FIDX
Ms. A. Ingretolli, FIDX
Ms. M. Mansueti, FIDX

2. RESULTS

2.1 Meeting held in Kuopio 09.09.1993

The meeting was held in the Department of Applied Zoology, at Kuopio University. Firstly Dr. Lindqvist welcomed all the participants to Kuopio and presented the Agenda of the meeting.

Agenda

1. Second Joint Meeting of the LTR's Coordination and International Scientific Committees in Lusaka, 14-15.10.1993;
2. LTR's scientific activities in 1993;
3. LTR's scientific programme for 1994;
4. Plans of Publications and Master Theses;
5. Miscellaneous.

1. Dr. Lindqvist introduced the schedule of the meeting in Lusaka. The participants from Finland were Dr. Lindqvist, Mr. Mölsä and Dr. Sarvala.

2. LTR's finnish consultants gave a summary of the progress of their subcomponents and presented some initial results. Mr. Podsetchine and Mr. Tuomainen presented respectively some preliminary results in hydrological modelling and remote sensing. The progress in fish genetics, fish biology and zooplankton biology were presented by Ms. Kuusipalo, Mr. Aro and Dr. Vuorinen, respectively. It was agreed that Dr. Sarvala and Mr. Salonen will prepare a sampling programme for future carbon energy budget research.

Dr. Lindqvist promised to make a presentation during the meeting in Lusaka about LTR's scientific activities, based on the presentations by the consultants and on Dr. Hanek's Progress Report.

A discussion about already implemented and future LTR consultancies for 1993 took place, and it was proposed that Mr. Huttula, Aro and Dr. Vuorinen would probably visit LTR in November-December, within the limits of the project's budget.

3. The scientific programme for 1994 was the next subject. Concerning hydrodynamics, the continuation of the development of a hydrodynamic model in 1994 and possibilities to order additional recording equipment (meteo stations for Mpulungu and for Kigoma, additional lake meteo station and current meters) were discussed.

Concerning limnology, the ground truth data measurements for the satellite picture calibration in remote sensing were discussed. I asked the schedule of satellites for timing the measurements.

Concerning zooplankton biology, it was proposed to continue the sampling, and in addition to start population growth rate studies on zooplankton in 1994.

Concerning fish genetics, Mölsä promised to contact LTR to send the genetic fish samples after the meeting in Lusaka to Ms. Kuusipalo, so that she would be able to start the work without any delay. She had tested already the RAPID method and assured us that the method is suitable for fish genetic analysis of our Lake Tanganyika target species.

Concerning fish biology, it was proposed to start some additional sampling: fish fecundity; stomach analysis; and, connected to zooplankton biology, possible survival of zooplankton eggs through fish intestines.

When starting the carbon energy budget studies in 1994, two possibilities were proposed: primary production or decomposition measurements. Dr. Sarvala and Mr. Salonen explained that decomposition could be measured through oxygen consumption and/or bacterial production, but not without carefully conducted preliminary studies on these topics. Sarvala and Salonen promised to prepare a presentation for the carbon/energy studies to be presented in the meeting in Lusaka.

The meeting also discussed about the main vessel and decided that the requirements for equipment on board for each subcomponent should be prepared as soon as the drawings of the vessel are available.

Lastly, the proposals for m/m of consultations for 1994 were proposed. Dr. Lindqvist and Mr. Mölsä compiled the proposals and promised to present it in Lusaka to Dr. Hanek and to LTR's operational staff in FAO HQ, Rome.

4. Publication policy and possibilities to do Master theses was the fourth subject. Dr. Lindqvist and Mölsä stressed that any publication for international series or bulletins should be sent first to Rome and Kuopio for approval. Dr. Lindqvist told us about the possibilities to let students from Kuopio

University do their Master theses in LTR on some special topics.

5. The importance of regular contacts between LTR personnel and the consultants was stressed.

2.1 Course in Hydroacoustics in Horten, Norway 4.-15.1993

The course in hydroacoustics in Horten lasted two weeks. The first one consisted of theory lessons in hydroacoustics and the second week of hydroacoustical measurements and calculation exercises in practice on R/V Simrad in Oslo fjord. During the course probable problems in hydroacoustics in installation of equipment as well as in conducting a survey on lake Tanganyika were discussed with personnel of Simrad. Mr. Solli gave me a cable and a plug to connect the project's echo sounder to the GPS. I discussed with Rolf Nielsen about the installation of the hull-mounted transducer for LTR's main vessel. He promised me to give advice for the installation of the transducer, once a copy of the drawings of the vessel will be delivered to Simrad. On the last day certificates were given to all participants by Mr. Raymond Brede.

2.3 Tampere

During my stay in Tampere, I visited LTR's consultants in the Water and Environment District of Tampere. We went through a pile of analyzed data in hydrodynamics and started to compile the first results for preparing a technical document. Huttula explained me that a data analysis software for hydrodynamics is being created and will be sent to Bujumbura early next year. In the future, LTR's personnel and counterpart can start the data analysis in hydrodynamics in Bujumbura.

2.4 Rome

During the first day of my visit at FAO headquarters, I had a discussion with Mrs. Blessich and Mr. Doeff about project's operational matters and the Lusaka meetings.

Later on, I visited FITT, where I met Mr. Turner and Mr. Smith. Subject of discussion was the construction of LTR's main vessel and its equipment. Mr. Turner showed me the drawings of the vessel and we made a list of proposals of improvements of the vessel's security and fishing facilities. Navigational equipment and a trawl sonde for pelagic trawling were also discussed. Simrad's proforma for the trawl sonde was found to be too expensive and too sophisticated for our needs. It was agreed to contact our Finnish consultant in fish biology, Mr. E. Aro, for trying to find another option, more suitable for our needs. I also briefed Mr. Turner about the discussion with Rolf Nielsen in Horten and proposed him to send the drawings of the vessel to Norway to get instructions for installing the hull-mounted SIMRAD ES120-7 split beam transducer for the main vessel.

3. CONCLUSIONS AND FOLLOW-UP

I found the meeting in Kuopio were useful and also LTR's consultants shared my opinion. The course in Horten was informative and gave me better understanding of SIMRAD's hydroacoustical equipment and how to conduct a hydroacoustical survey on Lake Tanganyika in the future.

- 3.1 Shipment of the first fish genetic samples to Ms. Kuusipalo
(Action:Deputy Scientific Coordinator, Kuopio)
- 3.2 Schedule for the satellite overflights
(Action:Tuomainen)
- 3.3 Prepare a TD of the preliminary results in hydrodynamics
(Action:LTR's APO in Bujumbura and consultants in hydrodynamics)
- 3.4 Send the drawings of LTRIB main vessel to SIMRAD
(Action:Turner, FAO, Rome)
- 3.5 Inform Mr. Aro to find other options for the trawl sonde of the pelagic trawl for LTR's main vessel
(Action:Turner, FAO, Rome)
- 3.6 Inform the constructor of LTR's main vessel about the proposed changes for construction of the vessel
(Action: Turner, FAO, Rome)

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

GCP/RAF/271/FIN/TRAM/36

Report of Appointment Travel

to

Mpulungu, Zambia

(01.11.93 - 07.12.93)

by

E. Bosma and P. Verburg
APO Fisheries Biologists

GCP/RAP/271/FIN.10

cc: Kato/Doeff/Blessich, FIO
Kapetsky, FIRI
FAOR, Zambia
Hanek, LTR, Bujumbura
LTR, Kigoma
LTR, Mpulungu
Lindqvist/Mölsä, Kuopio
DGIS, The Hague
Janus, Alternate Perm. Repres. of the Netherlands to FAO
Prillewitz, Mission of The Netherlands to FAO
Chrono
Trams
Diary: Bosma
Diary: Verburg

GCP/RAF/271/FIN

January, 1994

1. INTRODUCTION

1.1 Objectives

The purpose of this travel was to be introduced to the FAO activities, to the staff of the Fisheries Department of FAO, Rome and finally to proceed to our duty station in Mpulungu, Zambia. Personnel and administrative matters were also taken care of in FAO, Rome.

Further introduction to the Lake Tanganyika Research Project GCP/RAF/271/FIN (hereafter mentioned as LTR) had to take place in Bujumbura, Burundi. Briefing on the different research components were to be done by the concerning field coordinators in the field stations of Bujumbura, Kigoma and Mpulungu. In Lusaka and Chilanga, meetings were arranged to meet respectively the FAO Representative and the officers in charge of the Fisheries Department of Zambia.

1.2 Itinerary

	Arrival	Departure
Groningen		1.11.93
Amsterdam	1.11.93	3.11.93
Rome	3.11.93	13.11.93
Bujumbura	14.11.93	18.11.93
Kigoma	18.11.93	24.11.93
Mpulungu	26.11.93	1.12.93
Lusaka	1.12.93	3.12.93
Chilanga	3.12.93	3.12.93
Lusaka	3.12.93	7.12.93
Mpulungu	7.12.93	

1.3 Persons met

In Rome:

Mr. M. Doeff, SPOO, FIOA
Prof. Dr. O.V. Lindqvist, LTR Scientific Coordinator, Kuopio
Mrs. D. Blessich, POO, FIOA
Mr. P. Kotilainen, APO Fisheries Biologist
Mrs. A. Ingretolli-Mendico, Personnel Clerk, FIDX
Dr. J. Kapetsky, Senior Fishery Resources Officer, FIRI
Mr. G. Casper, AFSD
M.J. Mann, Sen. Officer (Trust Funds), FIDO
Mr. P. Lanni, Personnel Assistant, FIDX
Mrs. L. Zappalenti, Recruitment Officer, DDFR
Mrs. D. Di Biase, APO Programme Liaison Officer, DDFR
Mr. T.E.C. Elliott, Language Training, AFPR
Mr. G. Padroni, Personnel Officer, FIDX
Mrs. G. Guidugli, Financial officer, AFF
Mrs. J. Collins, Librarian Fisheries Library, FIDI
Mr. P. Janus, Alternate Permanent Repres. Netherlands to FAO

In Bujumbura:

Dr. G. Hanek, Project Coordinator, GCP/RAF/271/FIN
Mr. E. Coenen, Fishery 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
Mr. M. Gonçalves, Executive Assistant, GCP/RAF/271/FIN
Mr. R. Kanyaru, Director Burundi Fisheries Department
Mr. B. Nyakageni, Advisor Burundi Fisheries Department
Dr. M. M. Gashagaza, Director, CRSN, Uvira, Zaire
Mr. S. Kimbadi, Chief, Limnology Section, CRSN, Uvira, Zaire
Mr. N. Mulimbwa, Research Officer, CRSN, Uvira
Mr. B. Kakogozo, Technician, CRSN, Uvira
Mr. J.-P. Marquet, CTA, BDI/89/019
Dr. L. Risch, Project Manager, Project Belgium/CEGPL
Dr. A. Vandelannootte, Limnologist, Project Belgium/CEGPL

In Kigoma:

Mr. K. Katonda, Director, TAFIRI Centre
All TAFIRI Professional and Administrative Staff
Mr. P. Mannini, Fisheries Biologist, GCP/RAF/271/FIN
Mrs. H. Kurki, Fisheries Biologist, GCP/RAF/271/FIN

In Lusaka:

Mr. G. Mburathi, FAO Resident Representative
Ms. V.M. Best, FAO Administrative Officer
Mrs. D. Jere, FAO Programme Assistant
Mrs. M. Chisanga-Chibesakunda, Senior Secretary
Ms. R. Kaluba, Administrative Secretary
Ms. L. Vahdat, Administrative Clerk

In Chilanga:

Mr. G.H. Mudenda, Director of Fisheries

In Mpulungu:

Dr. P-D. Plisnier, Limnologist, GCP/RAF/271/FIN
Mr. D. Kabakwe, Officer in charge, Fisheries Development Officer
Mr. L.M. Mwape, Fisheries Research Officer
Mr. G. Milindi, Fisheries Research Officer All DOF Professional and Administrative Staff

2. RESULTS

2.1 In Rome

Introduction to FAO's organisational and operational aspects was done by Mrs. Zappalenti, Mrs. Di Biase and Mr. Mann. We were briefed on the FAO staff member duties and entitlements. Mr. Doeff and Dr. Kapetsky provided information about the project. We were also briefed concerning the reporting system. Administrative and personal matters were arranged. Travel arrangements were made, visa and laissez-passers obtained. We were introduced to the services of the

David Lublin Memorial Library and of the Fisheries Branch Library. Technical documents produced by Project GCP/RAF/271/FIN were consulted. We were briefed on medical procedures and received a medical kit. The forwarding to Lusaka and insurance of personal effects were arranged. The permanent mission of the Netherlands to FAO was visited.

2.2 In Bujumbura

We were welcomed by the Project Coordinator, Dr. G. Hanek and the LTR staff members upon our arrival. Dr. G. Hanek discussed with us about our Letter of Instruction, the job descriptions and our future work plan. We were introduced to the Scientific Sampling Programme (SSP) of the LTR project and to the practical aspects of several subcomponents (fish sampling and hydrodynamics). Beach seine fish samples were collected and analysed in the laboratory. The meteo station was visited and data recorder unloading discussed and demonstrated. Flow measurement techniques were explained. We were also introduced to the Documentation Centre of LTR.

2.4 In Kigoma

We met the LTR and TAFIRI personnel and were introduced to and received training regarding the remaining SSP subcomponents zooplankton and limnology. A sampling trip on the Lake was made. Artisanal fish samples were collected at the beach and analysed in the laboratory.

2.3 In Chilanga

We met and were briefed by Mr. G.H. Mudenda, Director of Fisheries. Unfortunately, no briefing was held with the Dr. M. Mubamba, Chief Fisheries Research Officer of the Fisheries Department, because he was on leave.

2.4 In Lusaka

Due to the remoteness of the duty station from FAOR Office in Lusaka, many personal and administrative matters had to be sorted out once and for all. The FAO Resident Representative, Mr. Mburathi was met when he arrived from a trip in the country. A successful attempt was made to speed up the forwarding of our personal effects to Mpulungu by the carrier agent. We were registered as residents both at UNDP and at the Dutch Embassy.

2.4 In Mpulungu

At the duty station, we were welcomed by Dr. P-D. Plisnier, the LTR expert at this LTR station. He briefed us during the period before his home leave (19 Dec.), both on the scientific programme and on administrative matters. Within the first few weeks, several trips on the Lake were made with the project vessel, both for the regular weekly sampling and the intensive sampling. Lab analysis and data entry for all the SSP components were performed. Flow measurements (hydrodynamics subcomponent) were also performed. Fish were sampled from industrial fishing units, artisanal units and at night on board

of an industrial unit. The coastal monitoring buoy was visited, cleaned of algae up to 10 m depth by divers, and the data of the recording unit were offloaded. Ample data analysis was performed and graphical representations produced for the hydrodynamic parameters measured in July 1993. A start was made in the improvement of lab facilities. The project vessel was supplied with a medical kit.

Several meetings were held with the Zambian counterparts in the station, both with the responsables of components and with all staff. The respective responsibilities for the SSP programme components of LTR's APos at the duty station were decided upon as follows:

- Zooplankton/Limnology: Bosma;
- Fish Biology/Hydrodynamics: Verburg.

Following the above task distribution, our Terms of Reference were revised as follows:

A. Revised TOR for Els BOSMA:

"Under the general direction of the Project Coordinator and the station expert, and in close collaboration with counterpart national staff, and with other international experts, the APO will be responsible for the following duties:

1. to assist in the implementation of the project's scientific sampling programme (SSP), particularly regarding collection and processing of data for the zooplankton and limnology subcomponents;
2. to provide on-the-job training for national counterparts in computer handling and application of statistical methods for data analysis;
3. to perform any other duties as required."

B. Revised TOR for Piet VERBURG:

"Under the general direction of the Project Coordinator and the station expert, and in close collaboration with counterpart national staff, and with other international experts, the APO will be responsible for the following duties:

1. to assist in the implementation of the project's scientific sampling programme (SSP), particularly regarding collection and processing of data for the hydrodynamics and fish biology subcomponents;
2. to provide on-the-job training for national counterparts in computer handling and application of statistical methods for data analysis;
3. to perform any other duties as required."

3. CONCLUSIONS AND FOLLOW-UP

Planned short term activities can be summarized as follows:

- 3.1 Execute the regular Scientific Sampling Program, according to the second update of the general SSP procedures (Action: Zooplankton/ Limnology-> Bosma; Fish Biology/Hydrodynamics inc. Meteo -> Verburg).
- 3.2 Replace temporarily the station expert during his home leave, especially regarding operational and administrative matters (Action: Bosma/Verburg).
- 3.3 Establish APO offices and refurnish laboratories on the premises of DOF Mpulungu (Action: Bosma/Verburg).
- 3.4 Give basic training to national staff regarding computer handling and data analysis (Action:Bosma/Verburg).
- 3.5 Hold a meeting in January with Dr. M. Mubamba, Chief Fisheries Research Officer of DOF, Chilanga (Action: Bosma/Verburg).
- 3.6 Try out a new device to concentrate the zooplankton of the B-samples (Action: Bosma).
- 3.7 Repeat analyses of the zooplankton A-samples taken before December 1993 (Action: Bosma).
- 3.8 Improve the efficiency of the limnology analyses, especially of the samples taken during the intensive sampling cycle (Action: Bosma).
- 3.9 Reassess the accuracy of the ammonia analysis technique used by LTR (Action: Bosma).
- 3.10 Install a winch on the research vessel "Silver Shoal" (Action: Verburg).
- 3.11 Find and prepare a more suitable location for the water level meter (Action: Verburg).
- 3.12 Compare the different buoys in use during the flow measurements (Action: Verburg).

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

GCP/RAF/271/FIN/TRAM/37

Report of Travel
to
Rome (Italy)
and
Bujumbura (Burundi)
(01.12 - 11.12.1993)
by
Victor Langenberg
APO - Fisheries Biologist

GCP/RAF/271/FIN.10

cc: Kato/Blessich, FIO
Kapetsky, FIRI
Lindqvist/Mölsä, Kuopio
Biabatantou, FAOR, Bujumbura
LTR, Kigoma
LTR, Mpulungu
Mr. P.R. Janus, APR, Rome
Chrono
TRAMS
Diary: Langenberg

GCP/RAF/271/FIN

January, 1994

1. Introduction

1.1 objectives

The objectives of this travel were: 1) to attend a general briefing at FAO Headquarters in Rome concerning the work of an APO; 2) to be briefed about the activities of project GCP/RAF/271/FIN; and 3) to proceed to my duty station in Bujumbura, Burundi.

1.2 Itinerary

	Arrival	Departure
Amsterdam		01.12.93
Rome	01.12.93	10.11.93
Bujumbura	11.12.93	

1.3 Persons met

in Rome

Dr. Y. Kato, Director, FIO
Dr. J.M. Kapetsky, SFRO, FIRI
Ms. D. Blessich, POO, FIO
Mr. M. Doeff, SPOO, FIOA
Mr. M. Mann, SPOO, FIO
Mrs. Ingretolli, PO, FIDX
Mr. P. Lanni, FIDX
Mr. G. Padroni, FIDX
Mrs. L. Zappalenti, Recruitment RO, DDFR
Ms. G. Guidugli, Financial OFSD
Ms. J. Collins, librarian (GI), FIDI
Mr. P.R. Janus, APR of the Netherlands to FAO

in Bujumbura

Dr. G. Hanek, LTR Coordinator, LTR
Mr. E. Coenen, Biostatistician, LTR
Mr. P. Kotilainen, APO-Fisheries Biologist, LTR
Mr. M.M. Gongalves, Executive Assistant, LTR
Ms. B. Baricako, Secretary, LTR
Ms. M. Bankumuhari, Receptionist, LTR
Mr. R. Kanyaru, Director, Département de la Pêche et de la Pisciculture (DPP)
Mr. B. Nyakageni, Adviser, DPP
Mr. L. Kabandana, Fisheries Assistant, DPP
Mr. J. Tumba, Fisheries Assistant, DPP
Mr. E. Nikomeze, Fisheries Assistant, DPP
Mr. E. Gahungu, Fisheries Assistant, DPP
Mr. B. Ndimunzigo, Fisheries Assistant, DPP
Mr. P. Biabatantou, FAO Representative
Ms. T. Sibomana, Administrative Officer, FAOR
Mr. M. Sow, AR of Administration and Finance, UNDP

Dr. L. Risch, Project Coordinator, Project CEPGL/Belgium
Dr. A. Vandelannoote, Project CEPGL/Belgium
Dr. L. De Vos, Project CEPGL/Belgium
Mr. J.P. Marquet, CTP/CTA, PNUD/FAO/BDI/89/019

2. Results

2.1 in Rome

Several staff members of the Fisheries Department were met. They introduced the organizational structure of the Department, the LTR project's ongoing activities, operational matters in general, and they provided reports prepared by the LTR project.

Members of other Departments updated my personal files, briefed me on financial matters, explained the FAO structure and its aims, the entitlements and duties of APO'S, and the reporting system.

The Alternate Permanent Representative of the Netherlands to FAO provided information concerning entitlements and career possibilities.

2.2 in Bujumbura

Dr. G. Hanek, Coordinator of the LTR Project, continued the briefing by providing additional information and by introducing me to the staff members of the LTR project, to the staff of the Burundian Fisheries Department, and to the FAO and UNDP Representatives. The staff of other regional and national projects which are collaborating closely with GCP/RAF/271/FIN were met. Furthermore, the reporting system of the LTR project was explained, and some initial duties and literature were given.

Mr. E. Coenen, LTR's biostatistician, explained the basics of LTR's Scientific Sampling Programme (SSP) and briefed me on the limnology subcomponents. He introduced me to the national counterpart staff and to the members of the Project CEPGL/Belgium.

Mr. P. Kotilainen provided an introduction to the computer system used and to the hydrodynamics/meteorology subcomponent of the LTR project.

All three also provided guidelines concerning living conditions in Bujumbura.

3. Revised terms of reference

On 30.12.93, the progress and present status of LTR's SSP was discussed. It was decided that Bujumbura station will have two staff members responsible for each subcomponent. In case of absence of the first one (I), the second one (II) will take over responsibilities. This resulted in the following schedule of responsibilities concerning my work:

limnology	(I)
temperature/chl.a calibration	(I)
carbon energy-budget	(I)

Therefore, it is proposed that my terms of reference should be revised as follows:

"Under the general direction of the Project Coordinator, and in close collaboration with international and counterpart research officers, the APO Fisheries Biologist's duties at Bujumbura station will be:

1. to be responsible for the collection, computer data entry and processing of Scientific Sampling Programme (SSP) data for the limnology, temperature/chl.a calibration and carbon energy budget subcomponents;
2. to assist, when required, in carrying out all the other SSP subcomponents, especially the hydro-acoustic and integrated sampling surveys with the main research vessel
3. to provide on-the-job training for counterparts in laboratory/sampling methodology (technical, and chemical), computer handling, data analysis, application of statistical methods, etc.;
4. to perform any other duties as required.

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

GCP/RAF/271/FIN/TRAM/38

Report of Travel
to
Rome, Italy
(10-13.01.1994)

by

George Hanek
Project Coordinator

GCP/RAF/271/FIN.10

cc: Blessich, FIOA
Mann, FIO
Kapetsky, FIRI
Fitzpatrick/Turner, FIIT
Maine, FIIT
Kambona/Ssentongo, FIP
Everett, FIP
Coppola, FIRM
LTR-Bujumbura
LTR-Kigoma
LTR-Mpulungu
LTR-Finland
Chrono
Diary:Hanek

GCP/RAF/271/FIN

January, 1994

1. INTRODUCTION

1.1 Objectives

The objective of this short visit to HQ (return from home leave) was to discuss a number of LTR operational and technical matters with project's POO and SMO and other technical officers.

1.2 Itinerary

	Arrival	Departure
Nassau (return from HL)		07.01.94
Rome	08.01.94	13.01.94
Bruxelles	13.01.94	14.01.94
Bujumbura	15.01.94	

1.3 Persons met

Dr. W. Krone, ADG/FI a.i.
Dr. Y. Kato, Director, FIO
Ms. D. Blessich, POO, FIOA
Mr. M.J. Mann, SPOO, FIO
Dr. J. Kapetsky, SFRO, FIRI
Dr. T. Petr, FRO, FIRI
Mr. M. Pedini, SAAD, FIRI
Mr. S.R. Coppola, FRO, FIRM
Mr. J. Fitzpatrick, Director/FII a.i.
Mr. J.M.M. Turner, FIO, FIIT
Mr. R.A. Maine, FIO, FIIT
Mr. B.F. Dada, Director, FIP
Mr. G.V. Everett, SFPO, FIPP
Dr. A. Bonzon, FPO, FIPP
Mr. G. Ssentongo, FLO, FIPL
Dr. C. Newton, Chief, FIDI
Ms. J. Collins, Librarian, FIDI
Mr. E. Schwela, Chief, FIDX
Mr. J. Galletti, Finance Officer, FIDX
Mr. F. Mancini, FIDX
Mr. P. Belanga, Personnel Officer, FIDX
Ms. L.A. Ingretolli-Mendico, PC, FIDX
Ms. I-L. Perttunen, Permanent Representative
of Finland to FAO
Mr. P.R. Janus, Permanent Representative
of the Netherlands to FAO
Mr. A. Collart

2. RESULTS

2.1 Operational matters - were treated with Ms. Blessich, LTR's Operations Officer. Specifically, the following ones were treated:

- * AA's, both FINNIDA (including those for 'security') and AGFUND, were already issued;
- * budget for 1994 - will be proposed once the exact expenditures for 1993 become available; (note: from AGFUND there is \$100,000 available for equipment - app. half is already committed);
- * extension of contracts for APO's Kotilainen and Kurki - FINNIDA will decide by the end of February 1994 but it appears that third year for Kotilainen is likely; the request for the same for APO-Kurki must be made to Bitar (DDF);
- * APO for LTR/Kigoma - so far no response; LTR 'friends' will be approached soon to assist with this matter;
- * GS/Field contracts for Gongalves and Heinonen should be finalized soon;
- * similarly, SSA's for Varayannis and Seppala will be finalized soon,-
- * involvement of nationals - although LTR 'associated' over 100 persons in the execution of its SSP it is felt that particularly the members of LTR International Scientific Committee should be involved more closely; apart of already authorized visits of Prof. Bwathondi to LTR/Kigoma and of Dr. Mubamba to LTR/Mpulungu the following actions should be initiated:
 - request CMTA's for Dr. Gashagaza and Dr. Nyakageni to visit LTR/Kigoma and LTR/Mpulungu (both could accompany LTR Coordinator on his visit to those stations in late February 1994);
 - the above mentioned members of LTR International Scientific Committee should prepare and/or coordinate the preparation of the detailed 'inventory' of scientists/specialists and/or scientific institutions in their respective countries for possible consideration for local consultations by LTR;
 - author contracts may be considered as well.
- * arrangements with University of Kuopio (reporting, inputs for 1994, etc.) were discussed in details; Prof. Mölsä was contacted by telephone; he was briefed on latest developments and requested to provide urgently needed data on equipment specifications, etc.

2.2 Technical aspects - those treated with Dr. Kapetsky, LTR's Subject Matter Officer (Fisheries Biology/Remote Sensing), were the following ones:

- First African Fisheries Congress - is due to be held in Nairobi from 1 to 5.7.1994. It was agreed that LTR should be represented. The following papers should be prepared: (1) methodology and results of our aerial frame survey (even tapes may be shown); (2) outline of LTR's SSP; (3) outline of remote sensing studies; (4) brief on LTR hydrological studies, etc.;
- SSP - it was agreed that while LTR will have to add further parameters to its SSP (carbon energy, etc.) there is a limit to its sampling scope and frequency. Thus the tendency of most subcomponent leaders to maximize the inputs and sampling frequencies for their respective sub-components must be controlled and a reasonable and technically satisfactory medium' must be reached. This will finally allow LTR scientific staff to devote appropriate time for analytical work. It was also agreed that apart of forthcoming visit to HQ by Piero Mannini, P-D Plisnier too should visit HQ;
- it was also agreed that once the initial technical reports from our Finnish colleagues on fisheries biology, zooplankton, remote sensing, hydrology and fish genetics become available their technical assessment will be carried out 'in house'; and
- it was agreed that the presentation of LTR scientific results during the Third Joint Meeting of LTR Coordination and International Scientific Committees must be considerably more substantial, and perhaps a form of mini-seminars may be envisioned;

Other technical matters were treated as follows:

- with Mr. J.M.M. Turner (FIIT) - timing and programme for the forthcoming visit to Bujumbura were discussed and agreed upon;
- with Mr. G.V. Everett (FIPP). - it was agreed that it is too early to organize the scheduled Workshop on Coordination, Planning and Management; instead, perhaps a short presentation of the principles of the Fisheries Commission for Lake Victoria could be presented as guidance' to the members of LTR Committees in October 1994;
- with Mr. G. Ssentongo (FIPL). - follow-up actions on the Sixth Session of the CIFA Sub-Committee for Lake Tanganyika were dealt with;

- with Messrs. S.R. Coppola (FIRM) and R.A. Maine (FIIT) - the possibility of ensuring for LTR the full capacity to produce LTR Newsletter were discussed.

2.3 Other matters - were treated as follows:

- meeting on cooperation between LTR and the forthcoming GEP project - was organized by LTR POO and attended by number of officers; also present was Ms. Perttunen, Deputy Permanent Representative of Finland to FAO. As stated before, there are several areas in which both project can cooperate but interagency agreement must be finalized first;

- Permanent Representatives of Finland and The Netherlands to FAO, Ms. Perttunen and Mr. Janus respectively, were fully briefed on LTR activities and accomplishments to date. Their support was solicited particularly with respect of obtaining additional funding for travel for LTR APOS;

- additions for LTR Documentation Centre - were kindly provided by Dr. Newton (FIDO), Ms. Collins (FIDO) and Dr. Petr (FIRI);

- Dr. Coulter's draft contribution for LTR Newsletter was discussed with Mr. M.J. Mann - it was agreed that heavy editing will be required prior publishing it. Mr. Mann agreed to prepare article on original 'Lady Alice'; and lastly

- a stop-over in Bruxelles was quite productive and very enjoyable as the preparation of several articles for LTR Newsletter by Mr. Alphonse Collart was discussed and agreed upon.

3. CONCLUSIONS AND FOLLOW-UP

3.1 Request third year contract for APO-Kurki.
(Action: LTR Coordinator)

3.2 Contact ILTR friends, to secure one more APO for LTR/Kigoma.
(Action: LTR POO)

3.3 Request CMTA for Drs. Gashagaza and Nyakageni and LTR Coordinator; reason: to visit LTR/Kigoma and LTR/Mpulungu by boat during second half of February 1994; duration: 10 days (note: this visit will be coordinated to allow to meet in LTR/Kigoma with Prof. Bwathondi and in LTR/Mpulungu with Dr. Mubamba so that any 'outstanding issues, (i.e. preparation of 'inventory' of national scientists & institutes, etc.) could be discussed by the members of LTR International Scientific Committee.
(Action: LTR POO and Coordinator)

3.4 Technical evaluation of documents by our Finnish colleagues.
(Action: LTR SMO(fisheries biology & remote sensing))

- 3.5 Prepare abstracts for the First African Fisheries Congress.
(Action: LTR Coordinator, Biostatistician,
Huttula/Kotilainen)
- 3.6 Brief Messrs. Mannini and Plisnier on LTR's SSP 'happy mix'.
(Action: LTR SMO)
- 3.7 Arrange for telex to Turner re: clearance to visit Burundi (security).
(Action: LTR Coordinator)
- 3.8 Contact Messrs. Coppola and Maine in order to finalize specification for equipment required for producing LTR Newsletter 'in house'.
(Action: LTR Coordinator)
- 3.9 Maintain close contact with the Permanent Representatives of Finland and The Netherlands to FAO.
(Action: LTR Coordinator and all LTR APO'S)
- 3.10 Acknowledge gifts to LTR Documentation Centre.
(Action: LTR Documentalist)
- 3.11 Edit Coulter's draft article and prepare a one on 'Lady Alice'.
(Action: Mr. Mann)
- 3.12 Prepare two articles for LTR Newsletter.
(Action: Mr. Collart)

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

GCP/RAF/271/FIN/TRAM/39

Report of Travel
to
Kigoma, Tanzania (16 and 23.02.94) and to
Mpulungu, Zambia (18-21.02.94)

by

George Hanek
LTR Coordinator

GCP/RAF/271/FIN.10

cc: Blessich, FIOA
Kapetsky, FIRI
Everett, FIPP
Fitzpatrick/Turner, FIIT
Nyakageni, DEPP/Bujumbura
Bwathondi, TAFIRI/Kunduchi
Gashagaza, CRSN/Uvira
Mubamba, DOF/Chilanga
FAOR/Tanzania
FAOR/Zambia
LTR/Finland
LTR/Bujumbura
LTR/Kigoma
LTR/Mpulungu
Chrono
Diary:Hanek

GCP/RAF/271/FIN

February, 1994

1. INTRODUCTION

1.1 Objective

The objectives of this duty travel were: (1) to accompany Dr. Gashagaza on visits to LTR/Kigoma and LTR/Mpulungu; (2) to meet other members of LTR's International Scientific Committee i.e. Prof. P. Bwathondi and Dr. Mubamba; (3) to carry out the initial internal evaluation of LTR stations; and (4) to deal with other operational matters as appropriate.

1.2 Itinerary

	Arrival	Departure
Bujumbura		15.02.94
Kigoma	16.02.94	16.02.94
Mpulungu	18.02.94	21.02.94
Kigoma	23.02.94	23.02.94
Bujumbura	24.02.94	

1.3 Persons met

in Kigoma:

Prof. P. Bwathondi	D.G. TAFIRI
Mr. I.K. Katonda	Director, TAFIRI/Kigoma
Mr. P. Mannini	Fisheries Biologist, LTR
<i>+ all other staff of LTR/Kigoma</i>	

in Mpulungu:

Dr. R. Mubamba	Assistant Director of Fisheries
Dr. P-D. Plisnier	Limnologist, LTR
Ms. E. Bosma	APO-Fisheries Biologist, LTR
Mr. P. Verburg	APO-Fisheries Biologist, LTR
Dr. Y. Takemon	visiting scientist
<i>+ all other staff of LTR/Mpulungu</i>	

2. RESULTS

2.1 Meetings with the members of the LTR International Scientific Committee

One of the recommendations of the Second Joint Meeting of the LTR Coordination and International Scientific Committees was to organize regular visits for the LTR International Scientific Committee members to their respective stations. Three of four members were able to take part (NOTE: Dr. Nyakageni was not able to participate) . At each station the Committee members were shown the premises and our SSP was demonstrated. Meetings with

all staff were organized at each station; numerous matters were treated.

All three members of our International Scientific Committee expressed their gratitude for the opportunity to visit their respective stations. Due to mainly logistical problems only Dr. Gashagaza was able to Visit all LTR stations. Consequently, the other members suggested that the next visit to LTR stations takes place towards the end of May 1994; all members should meet at LTR/Kigoma first (note: Drs. Nyakageni and Mubamba never visited Kigoma), hold their first official meeting there (objective: preparation for LTR's Third Joint Meeting) before proceeding, by boat, to LTR/Mpulungu.

Furthermore, the Committee member for Zambia also expressed his interest in: (1) participation in the LTR evaluation mission, now scheduled for 1995; and (2) in obtaining LTR financial support to pursue his study of French language.

Lastly, an extensive discussions were held on the form of presentation of LTR results for the Third Joint Meeting.

2.2 First internal evaluation of LTR stations

The first internal evaluation of LTR stations was carried out with the following results: (1) LTR/Kigoma; (2) LTR/Bujumbura and (3) LTR/Mpulungu.

There are many reasons why LTR/Kigoma was selected as the best LTR station; the main ones are the following: (1) the harmony in which Messrs. Katonda and Mannini work together; (2) the quality of the national scientists and technicians and their commitment to the effective execution of SSP ; and (3) the technical and particularly the human quality of our Ms. Kurki.

LTR/Bujumbura came second. This station serves also as LTR HQ and thus carries many additional tasks. Nevertheless, its effectiveness could still be higher once the quality and commitment of nationals are improved.

LTR/Mpulungu must improve its management style. Tasks must be delegated and full participation of nationals in decision making must be actively sought and eventually ensured. On positive side, it was pleasing to note the very fast and effective integration of recently arrived APOs Bosma and Verburg (NOTE: not only that they do not complain but they both actually like their duty station).

2.3 Other matters

Other matters were treated as follows:

* improvements of the Conference Room at LTR/Kigoma were specified;

these will be carried out immediately so that all is ready for the scheduled meetings, particularly the Third Joint Meeting;

- * logistics and inputs for the upcoming hydrological cruise were discussed and agreed upon; it was decided to include one person from each participating country. These are the following: from Burundi: Mr. J-M. Tumba; from Tanzania: Mr. D. Kihakwi; from Zaïre: Mr. Kakogozo Bombi; and from Zambia: Mr. L. Makassa;
- * 1994 duty + AL + HL travel plans for both stations were discussed and agreed upon ;
- * upcoming duty travel of APO-Kotilainen and Ms. Heinonen to LTR/Mpulungu was agreed upon;
- * it was also agreed to start LTR's data base of photo slides; categories to be covered: Lake Tanganyika-general, LTR, SSP activities, artisanal and industrial fisheries: gear, techniques, processing, marketing, etc;
- * finally we were able to obtain, through LTR/Mpulungu, reasonable quotes for Quicksilver Inflatable Boats and 25 HP Mariner Outboard Engines; it was agreed to purchase two of each for R/V Silver Shoal and R/V Echo. There is a need for echosounders for each of these vessels as well;
- * thanks to the contribution of DOF/Chilanga (=100 bags of cement) we will now be able to fix the Jetty at LTR/Mpulungu ;
- * briefing on R/V Tanganyika Explorer was provided at both stations; each should start to make the required arrangements to secure mooring facilities as well as fuel supply;
- * timing and objectives for LTR meeting to assess SSP were discussed; it was agreed to hold this meeting at LTR/Kigoma from 11-13.04.1994; all LTR's technical staff + 2 best nationals from each station will take part; and lastly
- * it was agreed that a form of 'mini-seminars' may be the best one to present our results to the Third Joint Meeting.

3. CONCLUSIONS AND FOLLOW-UP

- 3.1 Organize Second Meeting of members of LTR's International Scientific Committee at LTR/Kigoma towards the end of May 1994.
(Action:LTR Coordinator and POO)
- 3.2 Organize visits of LTR stations as follows: for Prof. Bwathondi to LTR/Mpulungu, for Dr. Mubamba to LTR/Kigoma and for Dr. Nyakageni for LTR/Kigoma and Mpulungu, all following May 1994 meeting.
(Action:LTR Coordinator and POO)
- 3.3 Obtain the tentative timing for evaluation Mission of LTR.
(Action: LTR POO)

- 3.4 Determine if LTR could fund the participation of Messrs. Mannini and Katonda, representatives of the best LTR station, at the seminar of UK/SADC Pelagic Fish Resource Assessment Project (Mr. Chitamweba' participation will be paid by UK/SADC project).
(Action:LTR Coordinator and POO)
- 3.5 Improve conference room at LTR/Kigama.
(Action:Messrs. Katonda and Mannini)
- 3.6 Prepare Travel Report on hydrological cruise and visit to LTR/Mpulungu.
(Action: P. Kotilainen)
- 3.7 Prepare Travel Report on visit to LTR/Mpulungu (=documentation).
(Action:Ms. Heinonen)
- 3.8 Start photo slides collection.
(Action:all staff of LTR)
- 3.9 Order two Quicksilver Inflatable Boats and two 25 HP Mariner Outboard Engines, one set for LTR/Mpulungu and the other for LTR/Kigoma).
(Action:P-D. Plisnier)
- 3.10 Supervise the reparation of LTR/Mpulungu jetty.
(Action:Messrs. Mwape and Plisnier)
- 3.11 Identify and secure mooring facilities for R/V Tanganyika Explorer in Kigoma and Mpulungu.
(Action:LTR/Kigoma and LTR/Mpulungu)
- 3.12 Prepare agenda for LTR April 1994 meeting in Kigoma.
(Action: LTR Biostatistician)

RECHERCHE POUR L'AMENAGEMENT DES
PECHE AU LAC TANGANYIKA
GCP/RAF/271/FIN

GCP/RAF/271/FIN/TRAM/40

Rapport de mission
à
Kigoma (Tanzanie) et Mpulungu (Zambia)
(15-24.02.1994)

par

GASHAGAZA MASTA MUKWAYA

GCP/RAF/271/FIN.10

cc: Blessich, FIOA
Kapetsky, FIRI
FAOR, Zaïre
LTR/Finland
LTR/Kigoma
LTR/Mpulungu
Directeur Scientifique, Lwiro
Chef de Dépt. d'Hydrobiol., Uvira

GCP/RAF/271/FIN

Février 1994

1. INTRODUCTION

1.1. Objectifs

Les objectifs de cette mission étaient: - visiter les stations de RLT à Kigoma et Mpulungu afin de prendre connaissance des infrastructures humaine et matérielle y existant, ainsi que du déroulement des activités de recherche dans ces stations; et - rencontrer mes homologues membres du comité Scientifique International de RLT et échanger avec eux des idées sur l'état d'avancement du programme scientifique initig dans le cadre du projet GCP/RAF/271/FIN.

1.2. Itinéraire

	Arrivée	Départ
Bujumbura		15.02.94
Kigoma	16.02.94	16.02.94
Mpulungu	18.02.94	21.02.94
Kigoma	23.02.94	23.02.94
Bujumbura	24.02.94	

1.3. Personnes rencontrées

A Kigoma:

Prof. P. BWATHONDI	Directeur Général, TAFIRI
M. K.I. KATONDA	Directeur, TAFIRI, Kigoma
M. P. MANNINI	Biologiste, RLT/Kigoma
M. CHITAMWEBE	Chercheur, TAFIRI
M. M.B.S. KISSAKA	Chercheur, TAFIRI
M. A.N.I. KALANGALI	Chercheur, TAFIRI

A Mpulungu:

Dr. R. MUBAMBA	Chief Fisheries Research officer, Zambia
Dr. P-D. PLISNIER	Limnologiste, RLT/Mpulungu
M. L. MWAPE	Directeur, Département des pêches, Mpulungu
M. G.M. MILINDI	Chef de Recherche,
M. D. KABAKWE	Chef de Station, MBALA

2. RESULTATS

2.1. Visite et échange de vues à KIGOMA

2.1.1. Visite

M. Piero MANNINI, le biologiste de RLT, a bien voulu nous faire visiter les bâtiments qui abritent les services administratifs ainsi que les laboratoires de RLT/Kigoma. J'ai noté avec plaisir, la bonne rehabilitation des locaux abritant le projet, la mise en place des équipements adéquats pour la

relance du programme de recherche ainsi que l'existence d'une équipe étoffée de chercheurs et techniciens oeuvrant au sein de cette station. Le traitement au laboratoire des échantillons recueillis sur le terrain ainsi que l'analyse préliminaire des données obtenues, par les chercheurs nationaux, sont à encourager.

2.1.2. Echange de vues

En date du 23.02.94, j'ai eu une séance de travail avec M. Piero Mannini, le biologiste de RLT. Notre discussion a porté sur:

- les éléments consignés dans le document "Note de terrain pour la biologie de poisson", préparé par lui et paru en novembre dernier; et
- les formulaires préparés pour améliorer l'échantillonnage des poissons, notamment par:
 - * l'analyse des contenus stomacaux à différents stades de croissance;
 - * l'étude de la croissance par examen des otolithes.

Ces formulaires font l'objet d'une étude visant à harmoniser nos avis quant à leur établissement définitif; c-à-d.: (1) Possibilité d'analyse des contenus stomacaux des poissons, pélagiques dans toutes les stations dotées d'un équipement adéquat pour le faire et d'une compétence voulue; et (2) Possibilité de confier l'étude "Early life history of pelagic species" au C.R.S.N./Uvira, compte-tenu de son expérience dans les études écologiques et morphologiques des larves de poissons pélagiques.

A cette fin, j'ai promis de préparer un document de travail qui sera présenté lors des réunions ultérieures.

2.2. Visite et échange de vues à Mpulungu

2.2.1. Visite:

En compagnie du Dr. R. MUBAMBA délégué de la Zambie au comité Scientifique International du Projet et du Dr. G. HANEK Coordinateur du projet, nous avons visité les laboratoires de la station RLT/Mpulungu et avons reçu d'amples explications du programme de recherche initié dans le cadre du projet GCP/RAF/271/FIN

Nous nous sommes réjouis de la poursuite normale du programme d'échantillonnage et de l'encadrement adéquat fourni par les experts aux chercheurs et techniciens nationaux. Il est à noter que, hormis certains petits problèmes d'ordre administratif, toutes les infrastructures humaines et matérielles sont disponibles pour la réussite du programme d'échantillonnage actuel.

2.2.2. Echange de vues

Au cours d'une séance de travail avec le Dr. G. MUBAMBA, nous avons épinglé trois points importants inhérents A la réussite du programme de recherche, a savoir:

- (1) envisager la possibility de débiter l'étude sur le "Early life history of pelagic species" qui constitue une base importante des études sur la biologie de pêche;
- (2) incorporer beaucoup Plus étroitement les chercheurs nationaux dans l'analyse des données et l'élaboration des publications y afférent pour appuyer leur promotion scientifique; et (3) intéresser les membres du Comité Scientifique International l'élaboration du programme scientifique annuel ainsi qu'à des différentes notes techniques de terrain afin de mieux coordonner le suivi de leurs applications.

Il est a noter que nous nous sommes réjouis de la tenue, au courant du mois de Mai, d'une réunion regroupant aussi les membres du Comité Scientifique International; opportunity favorable à y apporter des plus amples réflexions.

3. CONCLUSIONS

- 3.1. Le programme d'échantillonnage se déroule tel que prévu et A la satisfaction de tous les coordinateurs de terrain.
- 3.2. Il serait souhaitable que certaines innovations telles que l'analyse des contenus stomacaux, l'examen des otolithes et l'étude des larves introduites dans la collection des données sur la biologie de poisson, se fassent dans toutes les stations du RLT. Au cas où ces études ne pourraient se faire dans toutes les stations, il est recommandé de confier les échantillons récoltés A des laboratoires dotés d'une infrastructure matérielle adéquate et d'un personnel compétent.

RECHERCHE POUR L'AMENAGEMENT DES PECHEES
AU LAC TANGANYIKA
GCP/RAF/271/FIN

GCP/RAF/271/FIN/TRAM/41

Rapport de Voyage
à
Kigoma, Tanzanie

et

Mpulungu, Zambie
(07 - 21.02.1994)

par

T. Varayannis
Ingénieur Civil (SSA)

GCP/RAF/271/FIN.10

cc: Blessich, FIO
FAOR, Tanzanie
FAOR, Zambie
Mubamba, DOF/Chilanga
Katonda, TAFIRI, Kigoma
Mannini, RLT/Kigoma
Plisnier, RLT/Mpulungu
Trams
Chrono
Diary:Varayannis

GCP/RAF/271/FIN

Février, 1994

1. INTRODUCTION

1.1 objectifs

Les objectifs de cette mission étaient (1) de réparer le bateau B/R ECHO et de faire son entretien A Kigoma; (2) de continuer à Mpulungu, Zambie pour faire constat des travaux effectués par l'entrepreneur Shariff; et (3) de faire l'entretien, et l'inspection complète du B/R SILVER SHOAL.

1.2 Itinéraire

	Arrivée	Départ
Bujumbura		07.02.94
Kigoma	08.02.94	12.02.94
Mpulungu	14.02.94	18.02.94
Bujumbura	21.02.94	

1.3 Personnes rencontrées

à Kigoma:

Mr. P. Mannini, Expert Biologiste, RLT
Mme Heini Kurki, Expert-Associé Biologiste, RLT
M. K.I.Katonda, Directeur, TAFIRI/Kigoma

à Mpulungu:

M. P-D. Plisnier, Limnologiste, RLT
Mlle E. Bosma, Expert-Associé Biologiste, RLT
M. P. Verbug, Expert-Associé Biologiste, RLT
M. R. Mubamba, Directeur Adjoint des Pêches

2. RESULTATS

Au cours de mon séjour à Kigoma, j'ai débuté les réparations du B/R ECHO: l'alignement de ligne d'arbre et la fixation du support de l'axe. Après avoir fait de's essais avec le bateau, j'ai fait l'entretien du moteur, changé toute les filtres et huiles et vérifié le serrage de tous les boulons (voir Annexe 1).

Au cours de mon séjour A Mpulungu, j'ai fait le constat de l'état des bâtiments. Après, j'ai fait l'entretien du B/R SILVER SHOAL. Toutes les filtres et les huiles ont été changés et le serrage des boulons a été vérifié (voir Annexe 2).

3. CONCLUSIONS ET RECOMMANDATIONS

Après avoir visits les b&timents, j'ai établi le bilan de l'état des bâtiments (voir copie en annexe).

1. le staff house et les bureaux du projet: j'ai recommandé A l'entrepreneur Shariff d'exécuter les réparations

nécessaires (voir Annexe 3) pour que la maison soit remise en bon état dans les plus bref delais.

2. les bateaux: un programme d'entretien pour les bateaux toutes les six semaines. L'huile de moteur doit être changé et le filtre à air doit être nettoyé. De plus, toutes les filtres doivent être changé tous les 3 mois ainsi que l'huile de la boîte inverseur. Le filtre à air doit être changé tous les 5 mois. Le serrage des boulons doit également être vérifié.

3. Deux listes des pièces à commander pour l'entretien des bateaux B/R ECHO de Kigoma et B/R SILVER SHOAL de Mpulungu ont été établies (Annexes I et 2).

ANNEXE 1

Pièces à commander pour le moteur marine du B/R ECHO

VOLVO PENTA

10 OIL FILTER	PART No. 4785974-9
12 FUEL FILTER	No. 466987-5
6 IMPELLER KIT	No. 875593-6
1 REPER KIT FOR	WATER POMP JAPSCO No. ?
6 AIR FILTER INSERT	No. 820655-9

ANNEXE 2

Pièces à commander pour le moteur marine du B/R SILVER SHOAL

IVECO AIFO 8361 SM 10

8 FILTERING ELEMENT No. 1901605
8 AIR CLEANER (ASSY) No. 8105547
8 OIL FILTERING ELEMENT No. 1903715
8 FILTERING ELEMENT No. 1901776
4 IMPELLER No. 8106234
8 FUEL FILTER TENOCAR RN-123 METRIC 14x1,5 No. 8107716
8 OIL FILTER FOR MARINE GEARBOX TYPE IPM 301 PI

RATIO 2,7/1 No. ?

ANNEXE 3

CONSTATS EFFECTUES A MPULUNGU

Février 1994

A. La maison de projet des APO

- | <u>1. Tôles de toit en Eternit cassées:</u> | <u>Coût en Kwacha</u> |
|--|-----------------------|
| - 39 sur 44 tôles sont cassées | |
| - 24 faites de toit en Eternit sont
fdldes cl'est-à-dire toutes) | 975,000.00 K |
|
<u>2. Plaque de plafond:</u> | |
| - 6 plaques environ sont à remplacer | 14,320.00 K |
|
<u>3. Fissures dans les murs de la maison:</u> | |
| - A deux ou trois endroits, des fissures
doivent être comblées. | |
|
<u>4. Plomberie déficiente:</u> | |
| - Des fuites sont constatdes a plusieurs endroits. | |
| - Deux robinets à bille de 1/2 pouces sont à remplacer. | |
| - Des traces d'humidité sont constatées à la
toilette et dans la salle de bain: à fixer | |
| - La chasse de la toilette présente des
fuites et doit gtre arrangée. | 150,000.00 K |
|
<u>5. Installation électrique déficiente:</u> | |
| - A vérifier et à arranger | 40,000.00 K |
|
<u>6. Moustiquaires mal fixées</u> | |
| - A arranger | |
|
<u>7. Vitres intérieures</u> | |
| - Au dessus de trois portes, elles sont
à placer (sont en dépôt). | |

B. Les Bureaux du Projet

- | | |
|--|-------------|
| - Des fissures doivent être arrangées et repeintes | |
| - Planches du sous-toit manquantes à placer | 20,000.00 K |
| - Quelques endroits non peints | 55,000.00 K |

C. Le Guest-House

- | | |
|---|-------------|
| - Fixer le réservoir de la chasse de la toilette | |
| - Placer les moustiquaires manquantes et améliorer
(de façon hermétique) celles qui existent | 20,000.00 K |

COÛT TOTAL: 1,284,320.00 K

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

GCP/RAF/271/FIN/TRAM/42

Report of Travel
to
Kigoma (Tanzania)
and
Mpulungu (Zambia)
(01-17.03.1994)
by
Pekka Kotilainen
APO - Fisheries Biologist

GCP/RAF/271/FIN.10

CC. Kato/Doeff/Blessich, FIO
Kapetsky, FIRI
Lindqvist/Mölsä, Kuopio
Huttula/Peltonen, Tampere
LTR, Kigoma
LTR, Mpulungu
Chrono,
LTR, Bujumbura
Trams, LTR, Bujumbura
Diary: Kotilainen

GCP/RAF/271/FIN

March, 1994

1. INTRODUCTION

1.1 Objectives

The objectives of the duty travel were: (1) to install a wind/water temperature station off Kigoma; (2) to study the stratification along and across the northern main basin of the Lake and the movement and the inflow of water during the rainy season in Rusizi and Malagarasi delta areas; (3) to train counterparts of all four countries in these matters; and 4) to evaluate and update the sampling program regarding the hydrodynamic subcomponent both in Kigoma and Mpulungu stations. one counterpart of each country and two consultants took part in the mission on the Lake.

1.2 Itinerary

	Arrival	Departure
Bujumbura		01.03.94
Kigoma	03.03.94	09.03.94
Mpulungu	11.03.94	14.03.94
Kigoma	14.03.94	14.03.94
Bujumbura	18.03.93	

1.3 Persons met

in Kigoma

Mr. Katonda, TAFIRI, Kigoma
Mr. Chitamwebwa, TAFIRI, Kigoma
Mr. Kissaka, TAFIRI, Kigoma
Mr. Kihakwi, TAFIRI, Kigoma
Mr. Challe, TAFIRI, Kigoma
Mr. Chattha, TAFIRI, Kigoma
Mr. Makasa, Department of Fisheries, Mpulungu, Zambia
Mr. Mannini, LTR, Kigoma

in Mpulungu

Dr. Plisnier, LTR, Mpulungu
Mr. Verburg, LTR, Mpulungu
Ms. Bosma, LTR, Mpulungu
Mr. Mwape, Department of Fisheries in Zambia, Mpulungu
Mr. Milindi, Department of Fisheries in Zambia, Mpulungu
Mr. Chipulu, Department of Fisheries in Zambia, Mpulungu
Mr. Shapola, Department of Fisheries in Zambia, Mpulungu
Mr. Tzelepis, Manager, St. George Fisheries LTD
Mr. Blignaut, Manager, Samaki Fishing Enterprise LTD

2. RESULTS

2.1 Mission on the Lake, 01-03.03 and 05-08.03.94

The lake mission was carried out on a chartered ex-purse seiner B/V Mathieu. The first part of the mission started from Bujumbura in Rusizi delta ending in Kigoma and the second from Kigoma down to the level of Kungwe mountains, Tanzania.

Intensive STD- and current measurements were conducted. special attention was paid on inflowing rivers of the study area: Rusizi- and Malagarasi delta areas (Appendix 1). All counterparts were trained to use measuring equipment (STD, current cylinders and GPS) and to conduct the measurements. The stratification of the Lake was discussed during the mission.

2.2 Installation of the Lake meteo buoy off Kigoma

The Lake meteo buoy was installed 15 km to the south-east of Kigoma (Appendix 1) . Especially the counterparts in Kigoma were trained to handle it and later on to take over full responsibility of the buoy (maintenance, data unloading, etc.). After the Lake mission test recordings were unloaded by all the counterparts in Kigoma. Later on, a poster of the Lake meteo buoy was prepared together with Messrs. Katonda, Kihakwi and Kissaka in TAFIRI. The purpose of the poster is to inform fishermen along the Tanzanian coast, Tanzanian Railway Corporation (TCR) and private cargo vessels about the buoy and its function. The personnel of TAFIRI promised to take care of the distribution of the leaflet.

2.3 Evaluation of hydrodynamic subcomponent in Kigoma 03-05.03.94

Kigoma wind station and water level station were unloaded, updated and old batteries were changed. The counterparts were trained in these matters. The problems in the field measurements, data collection of automatic recorders and the future analysis of hydrodynamic data were discussed. Some new equipment and a field manual were handed over to the personnel of LTR/Kigoma to standardize the measurements and data collection in hydrodynamics.

2.4 Evaluation of hydrodynamic subcomponent in Mpulungu 11-14.03.94

Firstly, a visit was paid to St. Georges Fisheries, where LTR's automatic water level station is located. The unit was unloaded and the batteries were changed.

LTR personnel were briefed on automatic wind station and its installation. The responsibility for the installation of the station was left for the LTR/Mpulungu staff. It was decided to install it on top of the water tank of the Fisheries Department, if possible. The customs clearance for the equipment was prepared and Mr. Mwape kindly promised to take care of that.

A field manual in hydrodynamics was handed over to the personnel and the sampling in hydrodynamics and the preliminary analysis of the data for the SSP assessment meeting in Kigoma (07-14.03.94) were discussed.

A proposal to analyze the zooplankton data for this meeting in Kigoma was introduced by Ms. Bosma.

A conversation with Mr. Mwape took place on Monday concerning fish larvae sampling and he promised to bring some

samples with him to Kigoma to be discussed and introduced to messrs. Mannini and Kotilainen. Also the larvae sampling equipment for the main research vessel was discussed. A sampling program for fish larvae for the main research vessel could be prepared in the Kigoma meeting.

3. CONCLUSIONS AND FOLLOW-UP

The mission on the Lake was the third one within a year in hydrodynamics and the most successful. First time in LTR's history the counterparts of all four countries were working one week together in the field, on board in severe conditions. All of them were well motivated and cooperative. This is a promising fact for the future sampling on the LTR main vessel.

The sampled profiles may give new information on the stratification of the Lake. The results can be used for the hydrodynamic modelling or published separately. The instrument used for the measurements is easy to program and to handle, and counterparts are now trained on how to use it. Therefore, it is considered to circulate the STD to all stations. The only limitation at the moment is a laptop computer which is needed for programming the instrument.

Both LTR stations have been working well in hydrodynamics and from now on even better when a certain level of sampling routine has been reached and data collection and measurements methods have been standardized. In the near future the main concern will be the training in data analysis. All responsibility will be given to both stations in terms of data collection and unloading of automatic recorders.

3.1 Analysis of collected data

(Action: Consultants in hydrodynamics and APOs in Bujumbura)

3.2 Maintenance and distribution of the poster of the Lake meteorological buoy

(Action: Personnel in Kigoma/TAFIRI)

3.3 Customs clearance of received equipment

(Action: Personnel of LTR/Mpulungu)

3.4 Installation of the wind station in Mpulungu

(Action: LTR/Mpulungu)

3.5 Analysis of zooplankton data for Kigoma meeting

(Action: all LTR stations)

3.6 Working program for larvae sampling on the main vessel

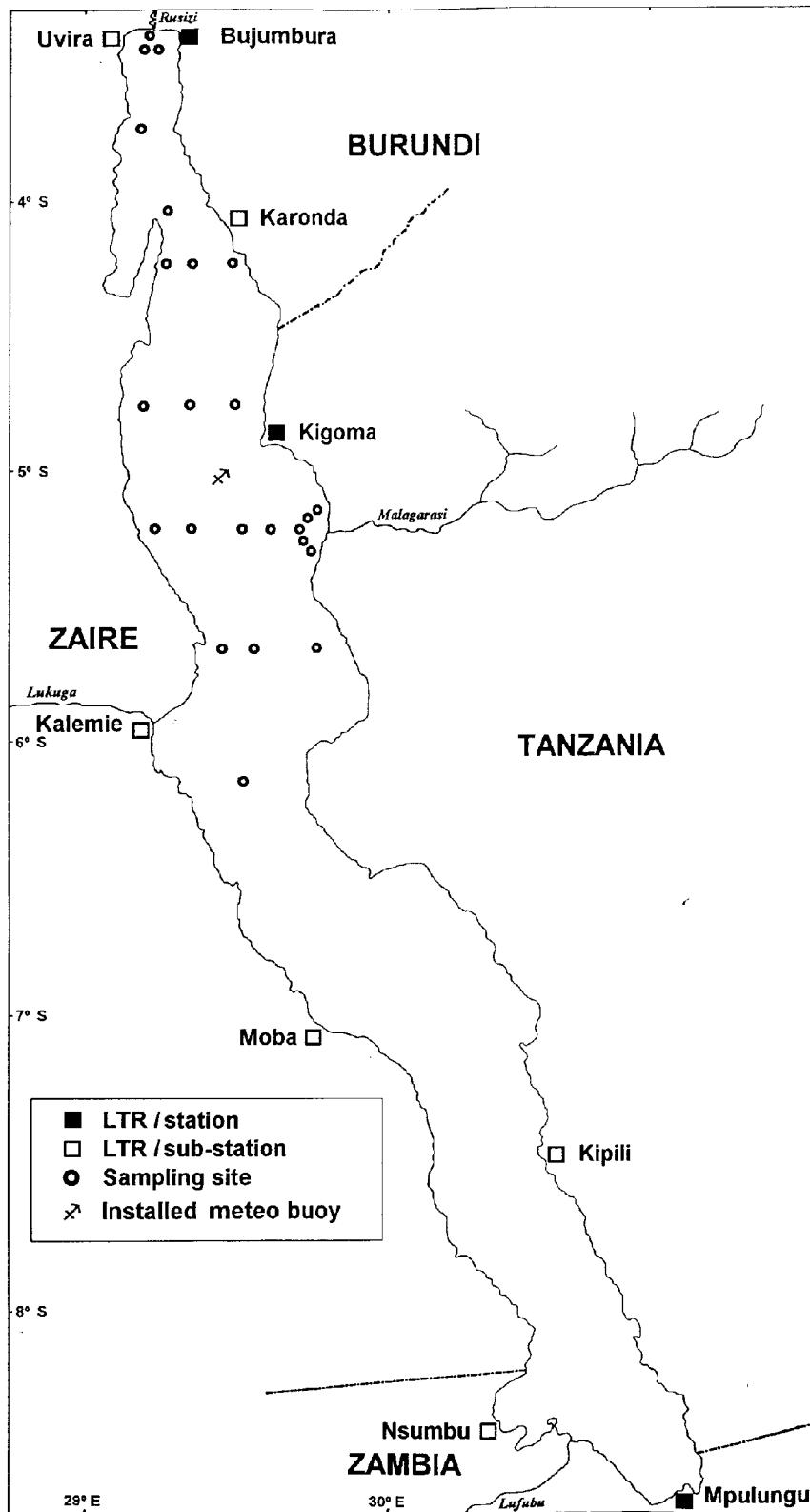
(Action: APO Bujumbura, Fisheries officer in Mpulungu)

3.7 Proposal for circulating STD probe to all LTR stations

(Action: APO Bujumbura)

3.8 Training of counterparts of all countries in hydrodynamics data analysis in hydrodynamics

(Action: LTR personnel of all stations)



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

GCP/RAF/271/FIN/TRAM/43

Report of Travel
to
Kigoma, Tanzania (10-15.4.94)

by

George Hanek and E.J. Coenen
LTR Coordinator and Biostatistician

GCP/RAF/271/FIN.10

cc: Kato/Doeff/Blessich, FIDI
Kapetsky, FIRI
Everett, FIPP
Kambona/Ssentongo, FIPL
Fitzpatrick/Turner, FIIT
FAOR/Burundi
FAOR/Tanzania
Kanyaru/Nyakageni, Burundi
Maembe/Bwathondi, Tanzania
Gashagaza, Zaïre
Mudenda/Mubamba, Zambia
LTR/Finland
LTR/Bujumbura
LTR/Kigoma
LTR/Mpulungu
Chrono
Diary:Hanek

GCP/RAF/271/FIN

April, 1994

1. INTRODUCTION

1.1 Objective

The objectives of this mission were: (1) to chair and participate in SSP Assessment Meeting; (2) to observe the introduction of new SSP sub-component (=carbon energy budget); (3) to brief the authorities of Kigoma Region; and (4) to deal with other operational/technical matters.

1.2 Itinerary

	Arrival	Departure
Bujumbura		10.4.94
Kigoma	10.4.94	15.4.94
Bujumbura	15.4.94	

1.3 Persons met

Ms. N.A. Sumari	Regional Development Director of Kigoma Region
Mr. R. Musingi	Ag. Regional Planning Officer
Mr. A. Msumba	Planning Officer
Mr. N.P. Lugayila	Ag. Regional Natural Resources Officer
Mr. R. Cherehani	Ag. Regional Fisheries Officer
Mr I.K. Katonda	Director, TAFIRI/Kigoma

all TAFIRI/Kigoma staff + all LTR international staff

2. RESULTS

2.1 SSP Assessment Meeting

Despite incredible odds (second president in six months killed a night before the arrival of two consultants and departure of 14 persons from Bujumbura to Kigoma and resulting closure of all activities, borders, etc) we managed to bring together the participants from four participating countries and all LTR international staff plus two consultants and hold this meeting, as scheduled, at LTR/Kigoma premises from 11-13.4.1994. The results of each sub-component of SSP were presented, discussed and proposals re: improvements, modifications made. It was attended by all LTR international staff from all LTR stations and two nationals from each participating country; Prof. J. Sarvala observed the proceedings. It was a very useful and productive meeting. Its detailed proceedings are now under preparation (LTR's Technical Document No. 17).

2.2 Introduction of new research sub-component to our SSP

Studies of carbon energy budget represent a new sub-component and addition to our SSP. Profs. J. Sarvala and K. Salonen are responsible. Immediately after their arrival to Bujumbura they started to test their instruments and methodology. This very time demanding work continued in Kigoma. All LTR international staff and two nationals (more from Tanzania) from each participating country took part in training course on carbon energy budget which was held at LTR/Kigoma premises on 13.4.1994. Prof. Sarvala introduced this new sub-component presenting the theory and basic principles. This was followed by a thorough technical presentation of Prof. Salonen who also provided practical demonstration of the methods. While the draft of both of these is available, the final version will be presented shortly as LTR Field Guides and Manuals No. 12.

2.3 Briefing authorities of Kigoma Region

During each of my visits to Kigoma an attempt is made to meet and brief the local authorities. This time I was accompanied by Messrs. Katonda and Coenen and we were able to meet and subsequently brief Ms. N.A. Sumari, Regional Development Director of Kigoma Region; during this visit she was also acting for the Regional Commissioner. Like all her predecessors in this post she also expressed her satisfaction with LTR and its exemplary cooperation with TAFIRI/Kigoma.

2.4 Other matters

The following matters were also treated:

- * **contributions for LTR Newsletter No. 9** - were agreed upon; in addition it was agreed to name Mr. Milindi as LTR correspondent for Zambia; he agreed to organize the preparation of several contributions as well as to keep me informed on any developments worth of reporting in LTR Newsletter;
- * **preparation of Fishing Gear Catalogue for Lake Tanganyika** - following earlier correspondence on this matter (de Boer-Hanek) it was agreed that Messrs. Challe and Kihakwi will undertake this assignment. Table of contents and methodology was agreed on. They will start with Rukwa Region, then Zambia and, if possible, Burundi and Zaire. First draft must be ready by end September, 1994 and finalized document published as LTR Technical Document in December 1994;
- * **construction in Mpulungu** - number of complaints re: quality of our contractor's efforts there were received. In particular, there is a problem with the roofing of the new house; it seems that it was damaged during transporting it from Lusaka. This is not the first time we have had problems with Sharraf Construction. Consequently, as the changes for improvement are unlikely and since a relatively small sum is involved it was decided to accept the proposal of another company to

replace the roof once the dry season starts. It was also agreed that this sum will be deducted from the amount still due to Sharraf Construction thus finally concluding this very difficult job;

*** integration of Eero Seppola to LTR** - this is an important issue to LTR. But, it would seem that, once again, whenever there is a need to resolve a minor personnel item, all kinds of obstacles are put forward. Nevertheless, since LTR needs Mr. Seppola's services we will simply have to obtain the requested documentation which may satisfy whoever decides these kind of things at AFPE.

*** meetings with LTR staff** - on numerous occasions several aspects were discussed with outposted LTR national and international staff. Of importance are the following:

* with LTR/Kigoma staff - major concerns are: (1) soonest possible recruitment of another APO; (2) extension of contract of APO Kurki; (3) ensuring the participation of Mr. Chitamwebwa at the final meeting of the UK/SADC project at Sanga Bay; and (4) preparations for the 3rd LTR Joint Meeting. I was also informed that there was a change in FINNIDA; the officer responsible for LTR there is Ms. Marja-Liisa Lehtonen who, it would appear, needs to be properly briefed on LTR.

* with LTR/Mpulungu staff - major concern there is a more close involvement of two senior DOF officers in LTR activities. Note: while both Messrs. Mwape and Milindi are responsible for the proper execution of one SSP sub-component each (not the case in other stations!!) they wish for even more involvement. It was proposed and subsequently agreed that Mr. Mwape will take part in soon to be proposed programme of larval fish sampling and that Mr. Milindi will become LTR main correspondent for LTR Newsletter.

*** reporting** - it was agreed that each sub-component leader will provide LTR Coordinator with very brief 'highlight of achievements' (stress on quantitative info i.e. number of analyses, number of measurements/bits, etc were obtained lake-wide for his/her subcomponent was underlined) by end of May and end of November, each year, to ensure that LTR's six month progress reports contain data on each SPP sub-component. It was also agreed that the analysis of results of the first full year of SSP, for each sub-component, will be prepared by each sub-component leader, who will each ensure that their draft technical document is circulated among all LTR stations by the end of August 1994 and finalized by end October 1994 thus allowing LTR Coordinator to make them available to each member of LTR International Scientific Committee two weeks before the start of LTR Third Joint Meeting of Coordination and International Scientific Committees, now proposed to be held in Kigoma around mid-November 1994.

*** visit to Kigoma Regional and District fisheries statistical offices** Mr. Coenen, LTR's biostatistician, accompanied by E. Nikomeze, fisheries statistics officer of the Burundi Fisheries Department, visited the Kigoma

Region Regional and District fisheries statistics offices. The purpose of the visit was to check the progress of decentralisation of the TANFISH (Tanzania's fisheries statistical software) data entry at regional level. They met with Messrs. Kweka, Kabadi and Cherehani who explained that a portable computer was received early 1994 and that two of them were trained to enter the Kigoma Region's fisheries statistical data. However, due to other duties, the data input for 1993-1994 data had not yet begun. In order to meet the deadline of end June 94 for submission of the entered 1993-94 data to the Statistical Head Office in Dar es Salaam, it was suggested to them to train some more fisheries assistants for data input and consider the 1993-94 data input as a priority for the next months. They agreed to this proposal and also welcomed the suggestion that LTR Kigoma could provide them with an office (the District Office has no electricity !!) and technical/logistic backstopping for the data input work.

3. CONCLUSIONS AND FOLLOW-UP

- 3.1 Acknowledge the effective assistance of Dr. Nyakageni, FAOR/Burundi and FAOR/Tanzania personnel and AMI/Tanzania in arranging the plane charter and for obtaining permissions to land in Kigoma.
(Action:LTR Coordinator)
- 3.2 Prepare the Summary of SSP Assessment Meeting (= Technical Document No. 17)
(Action:LTR Coordinator and Biostatistician)
- 3.3 Prepare LTR Field Guide and Manual No. 12 (=complete documentation on carbon energy budget studies, methodology, sampling frequencies, specs on required equipment, etc)
(Action:Profs. Sarvala and Salonen)
- 3.4 Prepare Fishing Gear Catalogue for Lake Tanganyika by end December 1994.
(Action:Messrs. Challe and Kihakwi)
- 3.5 Finalize LTR's construction/rehabilitation efforts in Mpulungu.
(Action:Messrs. P-D. Plisnier and Gongalves)
- 3.6 Request FAOR/Tanzania to certify that there is no technical capacity to repair sophisticated equipment in Kigoma and that, therefore, Mr. Seppdld should be offered a modest, part-time, SSA, as it would be a considerably cost effective measure for LTR.
(Action:LTR Coordinator, Mr. Fuller and POO)
- 3.7 Kindly try again for another APO for LTR/Kigoma and for contract extension of APO's Kotilainen and Kurki.
(Action: POO)

- 3.8 Authorize FAOR/Tanzania to pay for air ticket Kigoma-Lilongwe-Kigoma and other airport costs in Dar for Mr. Chitamweba explaining this will be reimbursed by the British High Commissioner's office upon receiving original invoice.
(Action:POO and FAOR/Tanzania)
- 3.9 Urgently arrange for extensive briefing of Ms. Marja-Liisa Lehtonen.
(Action:LTR Scientific Coordinator or his Deputy)
- 3.10 Provide Mr. Mwape with the proposal for larval fish studies and specify his involvement.
(Action:Messrs. Mannini and Plisnier)
- 3.11 Follow up on suggestions re: Zambia's contributions for LTR Newsletter.
(Action:Mr. Milindi)
- 3.12 Respect the agreed upon reporting deadlines.
(Action:all SSP sub-component leaders)
- 3.13 Follow up on progress of computer entry of fisheries statistical data in the Kigoma Region.
(Action: LTR Biostatistician)

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

GCP/RAF/271/FIN/TRAM/44

Report of Travel
to
Kigoma (Tanzania)
and
Mpulungu (Zambia)
(10.04.-27.04.1994)
by
Mervi Heinonen
Librarian

GCP/RAF/271/FIN.10

CC. Blessich, FIDO
Kapetsky, FIRI
Collins, FIDI
All LTR Stations
Chrono
Trams
DC-1

GCP/RAF/271/FIN

May, 1994

1. INTRODUCTION

1.1 Objectives

The objectives of the travel were:

- 1.1 to follow up on developments in the TAFIRI library in Kigoma since mission of August 1993;
- 1.2 To update ProCite databases available in Kigoma;
- 2.1 to reorganize Department of Fisheries library holdings in Mpulungu;
- 2.2 to install ProCite library software on a project computer in Mpulungu; and consequently
- 2.3 to instruct staff on use of the programme

1.2 Itinerary

	Arrival	Departure
Bujumbura		10.04.94
Kigoma	10.04.94	13.04.94
Mpulungu	15.04.94	22.04.94
Kigoma	24.04.94	26.04.94
Bujumbura	27.04.94	

1.3 Persons met

Mr. P. Mannini, Expert, Fisheries Biologist, LTR/Kigoma
Ms. H. Kurki, APO, Limnologist, LTR/Kigoma
Mr. I. Katonda, Director, TAFIRI Centre, Kigoma
Ms. J. Mugasha, Librarian, TAFIRI Centre, Kigoma
Mr. P.-D. Plisnier, Limnologist, LTR/Mpulungu
Ms. E. Bosma, APO, Fisheries Biologist, LTR/Mpulungu
Mr. P. Verbug, APO, Fisheries Biologist, LTR/Mpulungu
Mr. L. Mwape, Fisheries Research Officer, DOF, Mpulungu
Mr. G.M. Milindi, Fisheries Research Officer, DOF, Mpulungu
Mr. D. Kabakwe, Fisheries Development Officer, DOF, Mpulungu
Ms. A.-R. Banda, Librarian, DOF, mpulungu
Ms. A. Sililo, Secretary, DOF, Mpulungu

2. RESULTS

2.1 Follow up on TAFIRI library and updating of ProCite databases in Kigoma

A printout of present entries of local Kigoma database was made for checking of entries, but because of repeated problems with printer paper feeding, the result was not satisfactory. Thus, the database was copied on diskette for subsequent checking later.

Updates of databases containing information on the publications, maps and the Belgian Hydrobiological Expedition (1946-47) volumes available in Kigoma, as well as on documents received in 1993 and thus far in 1994 at the Documentation Centre at HQ/DC in Bujumbura and the revised Lake Tanganyika reference listing with updated availability information were provided. On the way back from Zambia, the present version of the MPULUNGU database was also added to the repertoire in Kigoma.

A loan slip original was revised from the one in use at HQ/DC for use in the TAFIRI library and 25 plastic shelf marker pockets for the loan slips were given.

2.2 Reorganization of library holdings at Department of Fisheries in Mpulungu

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

A loan slip original and 25 plastic shelf marker pockets were provided for use at Mpulungu station.

2.3 Installation of library software

ProCite library software was installed on the project computer in the library and running of the set up checked. An update of databases further constructed at HQ/DC and Kigoma was provided (see 2.1 above). A new database was also constructed for entering information of Mpulungu holdings which are not already entered into ProCite databases (and thus transferable directly). Entering of new references and transferring of already entered into this MPULUNGU database was begun.

2.4 Training

Ms. Banda as well as Ms. Sililo and Ms. Bosma were instructed on the use of ProCite software and briefed on the database structure of the project library network. Entering of different types of document references (book, report and article workforms) was practised by both DOF staff members and errors were corrected immediately together. In all, 200 entries were made during the mission working week, which include all books recently donated to the Department of Fisheries by British Council and visiting Japanese scientists. Information of maps available in Mpulungu was also added to the common LTR database.

3. CONCLUSION AND FOLLOW-UP

3.1 Check KIGOMA database entries and availability information of Lake Tanganyika references against holdings send update to TAFIRI library.
(Action: Heinonen)

3.2 Send materials needed to catalogue and maintain library collection at Mpulungu as follows:

- nutshell instructions on use of ProCite for entering and coarching of references, as well as updating of databases;
- list of journal acronyms for article entries to MPULUNGU database; and
- cardboard boxes and bookstands.

(Action: Heinonen)

3.3 Enter/transfer rest of documents available in Mpulungu into ProCite MPULUNGU database as follows:

- designated articles, not yet entered (by classified boxes);
- FAO Publications; and
- Lake Tanganyika related and other already entered references.

(Action: Banda, Sililo, Heinonen)

3.4 Several important L. Tanganyika documents lacking from HQ/DC were found at the Mpulungu library. Make copies of these.

(Action: Heinonen)

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

GCP/RAF/271/FIN/TRAM/45

Report of travel
to
Bujumbura (Burundi), Kigoma (Tanzania)
and to Lake Tanganyika
25.2. - 14.3.1994

by
Timo Huttula
Consultant in hydrodynamics
and
Jyrki Nieminen
Electrician

GCP/RAF/271/FIN.10

cc: Blessich, FIDO
Kapetsky, FIRI
All LTR Stations
Chrono
Diary:Huttula

GCP/RAF/271/FIN

April 1994

1. INTRODUCTION

1.1 Objectives

The objectives of the travel were: (1) to install a new meteo buoy outside Kigoma; (2) to continue to train LTR personnel in flow and CTD measurements; (3) to check the functioning of the automatic instruments in Bujumbura and Kigoma; (4) to study the longitudinal and transversal variability of flow and thermal regime in the northern and middle part of the lake; and (5) to study the spreading of the river water plumes (Malagarasi and Ruzizi). The mission on the lake was conducted on M/V Mathieu and on project's R/V Echo.

1.2 Itinerary

	Arrival	Departure
Helsinki		25.2.1994
Bujumbura	26.2.1994	01.3.1994
Kigoma	03.3.1994	06.3.1994
on lake	06.3.1994	06.3.1994
Kigoma	08.3.1994	09.3.1994
Bujumbura	10.3.1994	13.3.1994
Helsinki	14.3.1994	

1.3 Persons met

in Bujumbura

Dr. G. Hanek, LTR Coordinator
Mr. E. Coenen, LTR Biostatistician
Mr. P. Kotilainen, LTR's APO-Fisheries Biologist
Dr. N. Isaie, Charge de la Planification Energetique, E.G.L.
Dr. W. Degefu, Directeur Regional pour l'Afrique, WMO
Mr. R. Kanyaru, Director of Fisheries of Burundi
Mr. B. Nyakageni, Advisor, Department of Fisheries
Dr. L. Risch, Project Manager, CPRHA
Mr. L. Tumba, Scientist, Direction des Peches, Bujumbura
Mr. R. Varayannis, LTR Technician

in Kigoma

Mr. P. Mannini, LTR Fisheries Biologist
Mr. I. Katonda, Director, TAFIRI
Mr. N. Challe, Technician, TAFIRI
Mr. M. Kissaga, Scientist, TAFIRI
Mr. A. Kihakwi, Scientist, TAFIRI
Mr. A. Churi, Director, Kigoma Water District
Mr. F. Masanyia, Hydrologist, Kigoma Water District

and

Mr. M. Kakogozo, Scientist, from CRSN, Uvira, Zaïre
Mr. L. Makasa, Scientist, from Mpulungu Fisheries Training Station, Mplungu, Zambia

2. RESULTS

2.1 Installation outside Kigoma

The new meteo buoy, including the thermistor string, was successfully installed outside Kigoma. The operation of the instrumentation was changed after three days. The counterparts were trained in checking the function of the instrument and replacing the Data Storage Unit (DSU). Fuel barrels for M/V Mathieu were loaded in Kigoma.

2.2 Updating the training in flow and CTD-measurements

LTR's new field manual by Pekka Kotilainen was checked and some instructions were given. The consultant followed and supervised the counterpart training. The action of field personnel and quality of results were observed with satisfaction. The counterparts in hydrodynamic subcomponent have properly adopted the flow measurement techniques. The training in making conductivity-temperature-depth measurements (CTD) was given onboard.

2.3 Checking the automatic instruments in Buiumbura and Kigoma

The meteorological station in Bujumbura harbour was functioning well except the wind direction sensor on the upper level which has to be changed. Its reparation is a minimal task and can be done even in Bujumbura. The tube in the water level station was also slightly refixed.

In Kigoma both the wind station and the water level station functioned well. The data were unloaded. The counterparts and project personnel were instructed how to adjust the correct depth of the sensor at water level station.

2.4 Measurements of the longitudinal and transversal variation of flow and temperature regime in the lake

During cruise the measurements were conducted along five lines in the east-west direction and on some separate sites in the northern part of the lake. The temperature profiles were measured down to 300 m depth and oxygen profiles down to 75 m depth. Altogether about 40 profiles were obtained. Flow was measured during the daytime with flow cylinders at 5, 20, 40 and 60 meters depths.

The measurements were successfully collected although the engine of the winch broke down in the beginning of this cruise.

2.5 The study of the river water plumes at Malagarasi and Ruzizi river mouths

The flow entering the lake was studied for the first time. It was especially interesting to study the vast shallow area at Malagarasi river mouth. The data was collected at two occasions in slightly different wind situations.

2.6 Other matters

The visits to WMO and E.G.L. in Burundi resulted in agreement in which LTR will obtain the regional wind data and discharge data from Ruzizi river. Similarly, the visit to Kigoma Water District resulted in agreement that will provide LTR with discharge data from Malagarasi river.

In discussions with Dr. Hanek and P. Kotilainen the specific needs of the hydrodynamic subcomponent were expressed. A tentative plan for the usage of the new research vessel was given to LTR coordinator.

3. RECOMMNDATIONS

3.1. The ship officers, fishermen etc. should be informed about the new buoy outside Kigoma. They should be warned and the captains of Liemba and Mwongozo should be requested to make long distance observations about the state of the buoy when passing it.

(Action:Mannini and LTR personnel in Kigoma).

3.2. Additional measurements are necessary at Malagarasi river mouth. The temperature and conductivity of the river water should be measured at the same time as the observations in the lake are done. R/V Echo is too big to use for collecting river measurements. A smaller boat should be considered
(Action:Mannini and Kurki).

3.3. The river water plume at Ruzizi river mouth should be measured every 6 weeks.

(Action:Kotilainen).

3.4. The wind direction sensor of meteorological station in Bujumbura harbour has to be changed and repaired.

(Action:Kotilainen).

3.5. CTD should be now used effectively together with hydrodynamic measurements. It is recommended that CTD is used during 8 weeks period in rainy season and during 4 weeks in wind season at each station and then to be sent to the next station.

(Action:LTR Coordinator).

3.6. There is an obvious need to provide more materials of the lake hydrodynamics to counterparts and APos involved in this subcomponent. A good selection of basic literature together with up to date publications are to be supplied.

(Action:Consultant in hydrodynamics).

3.7. The future training and cruise programme for counterparts and APO's has to be proposed.
(Action: Consultant in hydrodynamics).