

Pollution Control and Other measures to Protect Biodiversity in Lake Tanganyika
(RAF/92/G32)

Special Studies: Pollution of International Waters; Sediment discharge and its consequences; Biodiversity

Back-to-Office Report: Chris Foxall, University of East Anglia

Visit to Kigoma, Lake Tanganyika, 12 September to 12 October 1997

1. Introduction

This 'back -to -office' report is a summary of the activities undertaken, meetings attended and tasks accomplished during the visit, together with principal action points.

As detailed in the Terms of Reference, the principal tasks for the visit were as follows:

- to prepare for, coordinate and be responsible for the day-to -day running of the field and Laboratory Methods training Workshop held at the Tanzanian Fisheries Research Institute (TAFIRI), Kigoma, from 22 September -3 October 1997.
- Prepare the wet and dry laboratories at TAFIRI for the forthcoming workshop and the subsequent monitoring programme.
- Unpack, check and install laboratory equipment in the two laboratories.
- In conjunction with TAFIRI workshop participants, set up a detailed water and phytoplankton monitoring programme to commence immediately after the completion of the workshop.

2. Summary of Principal Activities

Friday 12 September

Fly to Dar es Salaam

Saturday 13 and Sunday 14 September

Project Planning Meetings with RD and AK at Embassy Hotel, Dar es Salaam

Monday 15 September

Morning Flight to Kigoma. Inspection of dry and wet laboratories, TAFIRI in afternoon

Tuesday 16- Thursday 18 September

Checking and installing equipment, preparation of inventories, covering benches with ' benchkote protection ', preparing experiments and chemicals for workshop practicals.

Friday 19 September

Morning meeting with Andy Menz (AM), Kelly West (KW), Tony Bailey-Watts (TBW) and Graeme Patterson (GP) re forthcoming workshop. Afternoon meeting with Special Study leaders to discuss allocation of resources (lab space, boats etc) during workshop). Further work in laboratories during afternoon.

Saturday 20-Sunday 21 September

Final preparations for workshop including schedule revisions, workshop packs for participants, provision of AV facilities, provisional allocation of participants to special study groups etc.,

Monday 22 September- Friday 3 October

Field and Laboratory Methods Training Workshop-- see attached programme (Annex 1) for detailed schedule.. A list of participants and their respective institutions is also attached. (Annex 2)

Note: a number of meetings were also organised during the workshop to enable project personnel discuss issues of importance to the effective progress of the project such as appropriate indicator species for the various special studies, site integration, GIS and data integration, sampling sites and schedules for sample collection.

Saturday 4 October

Further laboratory work with Zambian participants in morning. Afternoon meeting with KW, EA, James Wakibara (Mahale Nat. Park), Dattomax Sellanyika (Gombe Stream Nat. Park), Kelvin Mununga (Nsumbu National Park) regarding post-workshop action required for LTBP\Nat. Park development programmes.

Sunday 5 October

Free day

Monday 6 October- Friday 10 October

This week was largely devoted to the setting up of a preliminary sampling and monitoring programme for the Tanzanian waters of the Lake. The programme for the week included the following;

- meetings with Mr. Chitamwebwa (DC), KW, TBW, CF and senior TAFIRI staff to agree on TAFIRI personnel to be taken on by the project and their respective duties. These were : Deonatus Chitamwebwa, Ibrahim Katonde, Meshack Kajelelo (part-time?), Elias Lyoba, Stanislaus Muhoza, Edmund Kadula, Dinna Lyoba and Grace Bwathondi. Terms of Reference for the appointment of Mr Lyoba as Laboratory Superintendent were agreed (Annex 3). A list of TAFIRI laboratory personnel employed on the project and their respective duties was drawn up and is given in Annex 4. .
- further training activities with Tanzanian and Zambian participants . The latter left for Zambia by road on Wednesday 8 October.
- preparation of a detailed water and phytoplankton sampling and monitoring schedule for Kigoma and Gombe areas for the period October 9-December 18 December 1997. Sampling began on schedule on October 9 under the guidance of Alex Kirika. Copies of the schedules were left with KW and in the dry laboratory.
- setting up sample log and associated sample tracing procedures to ensure traceability of all samples received by the laboratory.

- discussions with Elias Lyoba (appointed as Laboratory Superintendent) and other laboratory staff regarding, sampling procedures, good laboratory practice, use and maintenance of equipment, analytical procedures etc.
- preparation of standing instructions for field monitoring equipment, a copy of which was left in the TAFIRI laboratory. The formulation of a more detailed set of instructions covering all the monitoring procedures employed by the PSS which will be used in the riparian labs was also commenced.
- Discussion between KW, CF and the contractor responsible for the renovation of the wet and dry laboratories. On the basis of recommendations made by CF and KW a number of minor but nonetheless useful additions and improvements to the labs were agreed. Work is scheduled to begin immediately. Plans were also drawn up by CF for sealing the windows in the dry labs which face the road in order to reduce the amounts of dust entering the laboratory from that side.
- Discussions with Vicki Cowan regarding data recording and the harmonisation of sample codes, spreadsheet protocols. The options for pollution source control, and links with other NGO's in the Kigoma district were also explored.
- further laboratory work including alkalinity determinations on lake water samples.

Saturday 11 October

Friday flight from Kigoma to Dar was canceled, so departure for UK was postponed until 11 October. Flights to UK had to be rescheduled. Arrived in UK on 12 October.

3. Principal Action Points

- The workshop was well attended, there being a total of 18 participants from Tanzania (from 5 institutions) and a further 11 from 3 Zambian institutions. The 8 participants from Burundi and the Congo who were on the Dive Training Workshop also actively participated in the Field and laboratory Training programme when their dive schedules allowed. Although the training programme in sampling and laboratory methods was successfully initiated during the workshop, the lack of significant laboratory experience amongst many of the participants and the limited amount of practical time available during the workshop inevitably limited what could be achieved. The workshop resulted in a sound base of practical expertise

being established on which future and continued training be built. *It is recommended that this be done 'in house' in Kigoma and in Mpulungu by CF and TBW visiting the labs in question on a regular basis. This continuity will be vital to the successful establishment of the monitoring programme, especially in the next year or so. It is proposed that the first of these visits should take place from 21 November -9 December.*

- Once the refurbishment of the laboratories at the Department of Fisheries, Mpulungu, is complete, TBW and CF will visit Mpulungu in order to set up the laboratories, install the equipment, set up a detailed sampling and monitoring programme similar that already in place at Kigoma, and continue with the laboratory training programme. *It is recommended that this programme be started as soon as possible, and certainly no later than the first week of January.*
- Owing to logistical difficulties, it proved impossible for participants from Burundi and the Democratic Republic of the Congo to attend the Field and Laboratory Methods Workshop held in Kigoma. *It is therefore recommended that a comparable training workshop be run in Bujumbura as soon as possible to accommodate the training needs of such participants.*
- The availability and functionality of suitable laboratory equipment for pollution monitoring in Bujumbura is presently unknown. *to be purchased prior to the running of the workshop. It is recommended that a early visit to Bujumbura be made by TBW and or CF in order to ascertain the current situation and thus to enable the appropriate equipment to be ordered and purchased in advance of the workshop.*
- At an early stage in the Workshop, some senior TAFIRI and KWRD staff boycotted the workshop lunches in protest at the non-availability of payments for 'seating' allowances, Saturday working on 27 September and the shortage of transport to the lunch venue. A meeting of all participants and visiting scientists was held (chaired by CF) at which the opportunity was provided for the perceived grievances to be aired. The LTBP view that such payments fell outside Project responsibility was upheld by the Director of Fisheries, Mr. Bwathondi and thus no such payments were, in fact, made. This was accepted by TAFIRI staff and no

more problems were encountered. *In the interests of consistency, it is recommended that this payment position be made clear to organisers of all future Project workshops.*

- The intermittent nature of the electricity supply to TAFIRI is a serious problem and is significantly affecting the all project operations at Kigoma. A personal appeal by Mr. Chitamwebwa and KW to TANESCO resulted in an uninterrupted electricity supply for the duration of the Workshop, but in the weeks before and after the Workshop the power was off for at least 90% of the working day. The existing generator can cope with powering the project computers, but not e.g. the photocopier. This lack of power is seriously affecting the operation of the science laboratories, and no significant scientific work can be done until the situation is rectified. The lack of effective fridge and freezer facilities is seriously curtailing the sampling and monitoring programme. The serious impact of the inadequate mains electricity supply on the project was highlighted by a number of project personnel very early on in the project. It is thus somewhat surprising to find that the much needed generator was ordered less than two months ago. *It is strongly recommended that the installation of the generator and the associated wiring be accorded the highest possible priority.*
- Owing to the fire in the railway siding in Dar es Salaam, a significant number of items required for the running of the workshop and for the subsequent monitoring programme have yet to arrive in Kigoma. By purchasing some of the key items locally, and improvising where necessary it was possible to complete the workshop practical programme as scheduled. The replacement items are urgently needed however for the ongoing monitoring programme and it is urged that these items be delivered to Kigoma as soon as possible.
- Still on laboratory equipment issues, it was noticed during the checking of equipment in preparation for the workshop, that in some cases, the specification of the equipment supplied was different and inferior to that ordered. Considerable thought and effort had gone into selecting the most cost-effective and scientifically appropriate equipment for the job required, and it is therefore surprising that such specification changes were made apparently unilaterally. *It is recommended that should equipment specification changes be required for whatever reason, the relevant project personnel be consulted prior to the order of alternative equipment.*

- There is still no functioning radio on the 'Echo'. This lack of ship to shore communication has potentially serious implications. Thus, for example, during our stay in Kigoma the Echo broke down with Catherine and Simone on board while they were some considerable distance from Kigoma. *It is recommended that a radio be fitted as soon as possible.*
- The project noticeboard outside TAFIRI is somewhat 'secondhand' in appearance, has lettering that is variable in size and overall does not portray a professional image of the project. *It is recommended it be replaced by an attractive signboard which incorporates the project logo and is more in accord with the importance of the project.*

Annex 3

Terms of reference for Mr Elias Lyoba, Laboratory Superintendent, TAFIRI, Kigoma

The responsibilities of Mr Lyoba are:

- to take overall responsibility for the effective operation of the dry and wet laboratories.
- To keep a detailed and up-to -date inventory of all equipment and chemicals contained in the laboratories.
- To record details of all new equipment/chemicals received including invoice numbers. Any equipment or chemicals that are missing or damaged should be noted and the information passed to the SLO, Kelly West.
- To ensure that the chemical store is safely and efficiently run. A stock check should be carried out every three months and all chemicals withdrawn from the store should be recorded.

- To make sure that good laboratory practice is followed in each laboratory and that due regard is given to safety at all times.
- To maintain the laboratories in a clean condition at all times and to keep the equipment and microscopes they contain in good condition.
- To participate fully in the project sampling and analysis programme.
- To manage laboratory personnel effectively, giving due regard to their individual scientific interests and expertise.

Annex 4

Lake Tanganyika Biodiversity Project

Laboratory Personnel and Responsibilities, TAFIRI, Kigoma

Personnel	Post	Responsibilities
Elias Lyoba	Laboratory Superintendent	- i/c dry and wet labs -chemical analysis including chlorophyll determinations
Stanslaus Muhoza	Deputy Laboratory Superintendent	- i/c microscopes and microscopic analysis -chemical analysis
Edmund Kadula	Technician	- care of wet lab - microscopic and chemical analysis

- general lab. Duties

Dinna Lyoba

Technician

- care of dry lab
- chemical analysis
-general lab duties

Grace Bwathondi

Technician

-data entry and spreadsheets
-typing of laboratory reports
-microscopy support