

RAF/92/G32 - POLLUTION CONTROL AND OTHER MEASURES TO  
PROTECT BIODIVERSITY IN LAKE TANGANYIKA

Progress Report

December 1996 - February 1997

**NRINTERNATIONAL**

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## **Project Quarterly Progress Report for the Period Dec 1996 - Feb 1997**

### **1. Introduction**

The last quarter has seen good progress on a number of fronts with field activities under the Socio-economic, Sediment and fishing practices special studies and completion of the majority of the detailed work-plans for the coming twelve months including the ordering of equipment for field and laboratory studies. First use has been made of the R/V Explorer in a joint cruise with two American institutions to collect sediment cores in Tanzanian waters.

The content and format for the Letters of Agreement with the lead institutions have been finalised for all except Burundi, although it is hoped to make progress with this during a forthcoming meeting with the PCU and Burundi National Coordinator. A first draft of the Preliminary Strategic Action Plan (PSAP) is complete and will be circulated in March 1997.

Unfortunately the Tripartite review planned for this quarter did not take place and is now the prime objective for the PCU in the next quarter.

A full colour project pamphlet has been published (English only at present but French and Swahili versions are in press), that provides an easily digested and distributed overview of the project and its aims.

A replacement SLO has been recruited and visited the region in preparation for taking up her full time post in June 1997 and a project support officer for the Mpulungu station has begun work.

Further Progress has been made on the development of a training strategy including a visit to Kinshasa by the SLO and a training consultant for the francophone countries.

The bilingual baseline reviews have been edited and translated and are with the publications department of NRI .

Unfortunately the continued unrest in Burundi and Zaire and the continued enforcement of sanctions on Burundi has prevented any new activities on the Lake shore areas of those countries.

### **2. Project Coordination Unit**

#### **2.1. PPER and Tripartite Review**

Subsequent to the PCU issuing a draft of the PPER in October, some difficulty was experienced in getting responses from NCs and at the end of the quarter only one

signature and one set of comments (from different countries) had been obtained. Various reasons were cited including other commitments and documents going astray. Whatever the cause the result is that the proposed Tripartite review and the next meeting of the Steering committee have had to be delayed. Hopefully, once this exercise is complete, and the purpose and process of the PPER more fully understood, the lessons learned will ensure that the next PPER and tri-part review will be carried out in a more expeditious manner.

In general, now that the Letters of Agreement with the lead organisations have been, or are about to be signed and funds made available for services, it is hoped that all National Co-ordinators will pursue their terms of reference with renewed vigour and take a proactive role in promoting the project and its aims.

## **2.2. Letters of Agreement**

The form and substance of the Letters of Agreement under which the various institutions will implement the areas of project work for which they are responsible have largely been agreed upon. Finalised LoAs have been produced for the lead organisations in Tanzania, Zambia and Zaire and it is hoped that similar letter will be agreed with Burundi shortly.

## **2.3. FAO/FINNIDA LTR project**

The Project Coordinator received a visit from the Coordinator of the Lake Tanganyika Fisheries Research Project, Dr George Hanek. The LTR is now, to some extent, winding down its activities; and will now comprise, analysis and report writing of data already collected, the establishment of a locally operated monitoring system, completion of the hydrodynamic modelling work under the interagency agreement and two more acoustic survey cruises. In addition the LTR will mount a rapid socio-economic survey of all the main villages on the lake shore to collect data for the formulation of the proposed Fisheries Management Plan. This will take place in about May/ June and the final report is due before the end of the year. During discussions future collaboration between the projects was explored, especially in relation to socio-economic work, and it was agreed that the co-ordinators of the socio-economic studies in the two groups should meet and compare objectives and methodologies, to ensure minimum overlap and maximum benefit to both projects.

## **2.4. The Project Coordinator visits:**

### **2.4.1. Zambia (Lusaka and Mpulungu) January 1997**

The visit to Zambia included the following tasks:

- conclusion of negotiations regarding Letters of Agreement with ECZ and other institutions,
- assistance to Phil Townsley (SE Consultant) especially regarding finances, to set up SE training exercise and PRA study in Mpulungu,

- meet with Mr Mudenda (Director of fisheries) to clear up recent confusion and concern regarding the LTBP socio-economic study and liaison with proposed LTR socio-economic study, and to discuss staffing, refurbishment of labs and vessels and general project issues at Mpulungu,
- finalise arrangements to sign on Dr Patrick Chipungu as project SE co-ordinator/Information Officer and general project support principally in Lusaka.

And specifically in Mpulungu to:

- meet with Mr Mwape, Director of Fisheries station Mpulungu and brief on project requirements and relationship between LTBP and LTR,
- to ensure that work plans of SE and FP correctly balanced in overall training and PRA study being conducted,
- liaise with Martin Pearce and initiate setting up of project office and accounts in Mpulungu.

#### 2.4.2. Kigoma: 24/2/97 - 28/2/97

The principal objectives of this visit were:

- to accompany Kelly West, SLO designate, and Dr Graeme Patterson Sediment study co-ordinator, to Kigoma to introduce former to current SLO and other project related personnel in Kigoma,
- to discuss hand-over of SLO duties and the future role of Dr Banister on the project,
- to Meet with D. Chitamwebwa, director of TAFIRI station and brief on future project requirements especially space and staff, relationship between LTBP and LTR, matters relating to refurbishment of Echo, laboratories and offices,
- to meet with Pierro Manini, head of LTR operations in Kigoma and other LTR staff to discuss collaboration between projects,
- to meet with Mr C Mambona (Zairian currently engaged by MRAG for work on fishing practices) to discuss his current status in Tanzania and future role with project.

### **2.5. Kigoma station**

Apart from leave, supporting the various special study visits to Kigoma and adjacent regions, and the R/V Explorer cruise, the principal activity of the SLO during this quarter was a visit to Kinshasa together with the training consultant Jacques Moreau. All the principal institutions likely to be involved with the project were visited and details of the Letter of Agreement with the lead agency in Zaire finalised, although the exact method of payment has yet to be established as the ministry does not have a suitable account into which project money can be paid. The possibility of channelling the money through the UNDP office is being investigated by the National Coordinator. A follow up visit to Lubumbashi which had been planned to pursue links with the University there has been postponed due to the civil unrest.

The infrastructure to house the NOAA satellite data receiving station is completed and the equipment is in the country and soon to be shipped to Kigoma.

## **2.6. Staff**

In addition to staff assigned to the project from various institutions the following have been contracted directly to the project, all on an equivalent of two weeks per month basis,

- Dr Chris Lwoga, SE co-ordinator, Tanzania
- Dr Patrick Chipungu, SE co-ordinator and general project support, Zambia
- Mr Martin Pearce, Station support officer, Mpulungu, Zambia.

### **3. Progress Reports of Special Study Groups**

#### **3.1. Progress Report: December - February 1997 for Special Study on "Sediment Discharge and Its Consequences"**

##### 3.1.1. Overall Summary of Progress

The main objectives for this quarter were given in the previous quarterly report as follows:

- Major cruise scheduled for February 1997. This will be a critical step in the progress of the special study.
- To move towards a special study task force consisting of international and regional scientists in 1997.
- To develop a training programme in river monitoring developed from an assessment of in-country capability made during the country visits.
- To move towards instigation of field activities in all areas of the special study.
- To complete the editing of the bilingual baseline reviews.
- To continue work towards the development of a river monitoring system in all four countries.

Other work involved:

- a major exercise in identifying and ordering equipment to provide scientific support at the lakeshore stations for all special studies.
- the preparation of a training workshop schedule for a technical training course to be offered in August 1997

Overall progress on these activities throughout the quarter was satisfactory.

##### 3.1.2. Chronology of Activities

December 1997. Memo of Understanding for hire of Tanganyika Explorer agreed.

28/1/97 GP had all day meeting with A. Cohen (Univ. Arizona) to discuss plans for forthcoming cruise and special study in general.

29/1/97 GP to Edinburgh to discuss co-ordination with pollution special study as well as equipment and training needs.

7/2/97 GP to MRAG to discuss biodiversity work-plan

February 1997. Contract offered to Rob Duck (University of Dundee) to maintain a supervisory role in river monitoring activities (1 day per month)

20/2/97. G. Patterson and Kelly West (replacement SLO due to commence on June 1st 1997) travelled to Dar es Salaam on 20 February 1997 and remained in the region to the end of the reporting period (due to return to UK on 13 March 1997). GP by

this time having visited Dar, Kigoma and Mpulungu - KW to Dar, Kigoma and then commenced a period on board the Tanganyika Explorer.

### 3.1.3. Staffing Schedule

Non regional staff have been identified to conduct the major components of the Special Study. The principal investigators remain as tabulated in the previous quarterly report with the addition of C. O'Reilly of the University of O'Reilly who will carry out work in the region under the supervision of A. Cohen.

Regional staff have been identified from the country visit procedure. These are still in the process of being contacted (including visit made by GP) in order to identify their role in the project. Response from the region is slow. The best effort at compiling these will be made in the work-plan for the special study which is being prepared to accompany the PSAP.

### 3.1.4. Main Outputs and Achievements

The cruise of the Tanganyika Explorer departed Kigoma on 1st February 1997 and was still at sea (lake!) at the end of the reporting period. Cruise due for completion on March 10. The cruise plan and objectives are reported elsewhere. To date the cruise has met all objectives with over 50 cores and 1,500 km of acoustic data collected. Unfortunately the Hendrick Marris corer and CTD purchased by the project was not available to the cruise due to a problem of getting it released from Tanzanian customs. This is not, however, seen as a major problem as a large amount of material has thus far been collected. Another cruise with the objective of taking these shorter cores to look more closely at recent sedimentary events will be planned for later in 1997.

Prior to the initiation of a task force there will be a meeting of UK, Belgian and US scientists in Britain in March 1997 to establish priorities of samples and sample location for the biological component of the special study.

The visit to the field of GP (and KW) and the results of the cruise currently underway allow for the initiation of field activities in the special study and these are planned to begin in May 1997 with a sampling programme to commence in July of 1997 to continue for 1 year.

The bilingual baseline reviews have been edited and translated and are with the publications department of NRI .

Terms of Reference have been drawn up for a river monitoring programme in Zambia between the project, the University of Zambia and the Zambian Water Affairs Department. These are being considered and will be used a basis for presentation to the other riparian countries.

A major training programme has been designed to service all special studies. Copies of this proposal were carried to the region by GP and TAFIRI have agreed to host the workshop in August 1997.

### 3.1.5. Main Objectives for the next quarter

- Completion of the cruise commenced in February 1997 (and to provide preliminary report on findings)
- To continue work towards the development of a river monitoring system in all four countries.
- To make preparations for the training workshop in August 1997
- To prepare a contract for C. O'Reilly to commence field work in May 1997 (under supervision of A. Cohen at University of Arizona)
- To produce special study work-plan to be attached to PPER and presented at next Steering Committee
- To continue to develop river monitoring work-plans with authorities in region

### **3.2. Progress Report: December - February 1997 for the Special Study on 'Pollution in International Waters and its Effects on Biodiversity in Lake Tanganyika'**

#### 3.2.1. Overall summary of progress

This period saw good progress in three areas of vital importance to the operation of a number of field and laboratory activities envisaged within this Special Study (see Baseline Review and related contributions to the Inception Report):

- what is required of the overall Project's Geographical Information System by this Study
- the development of a 'check-list' of information that needs to be recorded on each sampling exercise and at each sampling site, and
- a number of aspects concerned with equipment to execute the multifarious activities planned for all of the 'ecological' Special Studies.

#### 3.2.2. Brief chronology of activities and visits

On **18 December**, Dr Bailey-Watts visited Drs Downey and Pender at NRI, Chatham to discuss common interests in the GIS system. Over the turn of the year he also helped Dr John Craig (formerly LTR's Statistician, now a Scientific Director of ICLARM based in Cairo) in editing the progress report drafted by the Finnish and Dutch teams involved in the FAO FINNIDA hydrodynamics and fisheries project; and on **29 January** he hosted and chaired a meeting in the Edinburgh Laboratory of IFE, to finalise the equipment requirements for primarily, the Pollution Special Study, but also taking account of equipment resources that would be used by the Sediment Pollution and Biodiversity Special Studies. In addition to Dr Bailey-Watts, the following were present: Drs Duck (University of Dundee), Foxall (UEA) and Patterson (NRI) and Mr Kirika (IFE). Dr Foxall and Mr Kirika were involved in developing the equipment list. Over the whole period of this review, Dr Foxall was been especially busy too, in drafting plans for training in field and laboratory methods, and in identifying issues within the Pollution, Sediment Pollution and Biodiversity Studies that relate to the Project's Environmental Education programme. **Late February** saw the completion of the equipment lists and their distribution to laboratory suppliers for Tender.

#### 3.2.3. Current staffing schedule

This is the same as that reported for the previous 3-month period, i.e. Dr Bailey-Watts (Co-ordinator of the Pollution Special Study), Dr Chris Foxall and Mr A Kirika. But see 5 below.

#### 3.2.4. Main objectives and achievements

The main objectives over this review period were to progress with (i) the formal identification of the institutions to be involved in this Special Study (ii) the

appointment of scientists and technicians and 'supporting staff' (iii) procuring the equipment needed for all aspects of the work (iv) outlining plans for a multi-disciplinary methods training workshop and identifying the instructors for the above (v) selecting, and starting to establish a centre within each country, where work in the first year at least, will be based (vi) developing a list of features that will need to be recorded at sites from which samples will be taken (vii) and identifying the type of data that the Pollution-Biodiversity Study is likely to generate and will require a GIS configuration for its analysis and presentation (viii) drafting an illustrated leaflet about the Study and (ix) distributing around the region more copies of the Special Studies Baseline Review on 'Pollution and its effects on biodiversity'.

Substantial progress was made in all but (ii) and (iii) above. However, for the former, the persons themselves have been identified - not least as a result of the resource assessment mission to Tanzania, Zaire and Zambia in August and September 1996. As to the latter, the equipment lists have been sent out for Tender.

The information discussed in relation to the GIS system is of two types. The first relates to the lake catchment and features that determine pressures on the lake by way of eutrophication and other forms of pollution: examples are land topography, surface geology, and land use and the dispersion of people, the positions of feeder waters (inflows), and such artefacts as water discharge ganging stations. The second information base concerns the lake itself, including intrinsic features such as bathymetry, as well as a wide range of data that will be generated by the Special Study. Of particular importance here are the simple, basic measurements of e.g. water temperature and clarity, as well as more exacting determinations of the levels of nutrients, hydrocarbons, heavy metals and pesticides - and the recording of site details and the time and location at which samples are taken and measurements are recorded. We are developing a system that will use waterproof pens, and plastic proformas - with photographs of the sampling sites, and lists of the field protocols to be followed and the information that needs to be recorded.

Involvement in the editing of the LTR report was of considerable value to the Pollution Special Study in particular, in alerting it to a number of issues that could influence the nature and design of the LTBPP's sampling and monitoring programmes; examples are, where to sample at what frequency, what types of samples should be taken, what type of equipment should be used, and what suites of analyses and measurements should be attempted. The Edinburgh equipment meeting, re-inforced the view first expressed in the Pollution Baseline Review, that the personnel to be appointed to the Pollution team will also be trained to analyse samples of water, sediment and biota submitted by the other 'ecological' Special Studies. The meeting considered, in addition to a wide range of e.g. glass- and polyethylene-ware and a variety of analytical apparatus, instruments for (i) the recording of environmental conditions, (ii) collecting the different samples and materials and (iii) for the immediate preservation/storage of samples. Position-fixing devices, small boats and engines, and tools for the repair and maintenance of laboratory and field equipment were also covered.

### 3.2.5. Main objectives for next quarter (to end May 1997)

The next quarter will see progress with e.g. the design and scheduling of the training workshop and the production of the Pollution Special Study 'flier' referred to above. However, the real priority task is the completion of the Pollution Study Work Plan which will address a number of issues to be considered, views to be debated, problems to be resolved and decisions to be taken by the LTBPP as a whole, if this Special Study is to do as mandated: that is, assess whether, and to what extent and in what manner, the biodiversity of Lake Tanganyika is affected by pollution. First and foremost, we wish to negotiate with UNOPS the placing of one, preferably two, persons of MSc/PhD level trained by Drs Bailey-Watts and Foxall - more or less permanently in the lake region; the Special Study Co-ordinator and his main consultant see this as vital for guiding and overseeing in close liaison with the national consultants and researchers in the lake countries, what is an extraordinarily multi-disciplinary programme. Such a development would even hasten and smooth activities such as the receipt and installation in the countries, of the field and laboratory equipment and the establishment and organisation of working laboratories. These issues - many of which are also relevant to the other Special Studies, and will require cross-boundary funding - will be detailed in the forthcoming Work Plan.

### **3.3. Progress Report: December - February 1997 for "Biodiversity" Special Study and "Conservation Activities"**

#### **3.3.1. Overall Summary of Progress**

The finalisation of the work plans for this special study is the key achievement of this quarter. The work plan builds from the Baseline Review, Inception Workshop, field missions and consultation with other special studies and international experts to develop an overall sampling strategy for the region. The work plan integrates locations (pristine and impacted), relevant national institutions and a sampling strategy for biodiversity. The timing of various inputs required (training, surveying, data management and analysis) is planned up to the time at which outputs from the special study are incorporated into the 'final' strategic action plan. The next field mission, planned for July-Sept 1997, involves intensive training of field staff to generate the capability within national institutions to carry out the surveys outlined in the work plan. Various international experts will be called on to pass on knowledge and experience to national counterparts during this field mission.

#### **3.3.2. Chronology of Activities**

1. Dec - Feb: Rationalisation of species entered on biodiversity database against Cloffa (accepted source in the literature).
2. Dec - Feb: Work plans developed through discussion with colleagues on project and international experts.
3. Jan: Planning of summer (July/August/September) field mission for Dr E. Allison to begin work plans.
4. Feb: Discussions with Roger Bills (JLB Smith Institute of Ichthyology, South Africa) on potential involvement in training on fish taxonomy and dive survey methodology.
5. Feb: Discussions with Belgian Institutions, namely Musee Royale de l'Afrique Centrale, Royal Belgian Institute of Natural Sciences, on potential collaboration including training of national counterparts in taxonomy.
6. Feb: Biodiversity database linked to mapping software to allow first geographic output of locational data entered from literature.

#### **3.3.3. Staffing Schedule**

Special Study Director  
Dr Ian Payne, MRAG

Field Team Leaders

Dr E Allison, MRAG

Dr P Petit, Ecole National Superieure, Toulouse

Special Advisor

Dr Rosemary Lowe-McConnell (Independent) Dr George Coulter (Independent)

Research Assistants (UK) Biodiversity Database Ms Vicki Cowan (MRAG)

Mr Nicholas Kotschoubey (Independent)

Database Specialist

Mr John Pearce (MRAG)

### 3.3.4. Main Outputs and Achievements

1. The work plans for this special study have been finalised. A strategy for surveying 12 locations in the lake (3 in each country, although clearly work in Zaire and Burundi) has been developed. It involves sampling twice a year in locations that have been chosen to include a range of impacted (sedimentation, pollution, fishing practices) and pristine sites. Each location will have representative areas of the five habitat types identified in the baseline review. As riparian institutions will be responsible for the bulk of the field work, the sampling strategy incorporates training and allows for progressively more locations to be sampled as skills improve.

2. The field work is due to begin in July with the field mission planned for Dr E Allison. This period will involve training of national staff specifically for this special study (diving, sampling techniques, fish identification) and training which has been planned collaboratively with the other technical studies (fishing practices, sedimentation and pollution).

### 3.3.5. Main Objectives for the Next Quarter

1. Continue to develop the geographic component of the biodiversity database and generate distribution maps to support July field mission.

2. Plan the training and field work aspects of the summer mission.

3. Respond to comments from riparian collaborators on the work plans.

### 3.3.6. Recommendations

1. Contracts with organisations/institutions indicated in the Work plans to be established as soon as possible.

### **3.4. Progress Report: December - February 1997 for Socio-economics (SE) and Environmental Education (EE)**

#### **3.4.1. Overall summary of progress**

Field training sessions and pilot village assessment exercises have now been completed in both Tanzania and Zambia, at lake shore villages. Local teams have been assembled from relevant local institutions and NGOs and the members trained in relevant rapid / participatory appraisal methods. A full report has been received from Tanzania. Planning for follow up work to provide more systematic coverage of local socio-economic and resource management conditions at selected sites within the lake basin in each of the two countries is underway. There has been close co-operation with the fishing practices study. Draft recommendations for Environmental Education activities have arisen from the preliminary fieldwork. For the Environmental Education Programme more widely a two year contract has been drawn up with ICCE, as a professional co-ordinating body, with good links in the region.

#### **3.4.2. Brief chronology of visits and activities**

From 6 - 24 January, in Tanzania: NRI Anthropologist Dr Martin Walsh worked with national socio-economic consultant Dr Chris Lwoga in the final stage of planning, training and execution of a one week PRA study at Mtanga, bordering Gombe National Park, working with a six person local team. A full report by Dr Lwoga is now available

Unfortunately the EE officer recruited for Tanzania resigned from the project, for personal reasons as the work was about to begin, and a replacement is yet to be identified

In Zambia, throughout February consultant anthropologist Philip Townsley worked with Shadreck Nsongela, Zambia EE co-ordinator, and Mlotha Damaseke, project socio-economic assistant, to train and lead a team to conduct a similar PRA investigation on the lakeshore. IN all 3 sites have been covered, including areas adjacent to Nsumbu National Park, which is likely to a main focus of future work. The local team subsequently conducted another PRA by themselves at Chituta Bay.

Also in Zambia, the project recruited the services of Dr Patrick Chipungu, who participated in the PRA work, as Socio-economic and institutional liaison officer. Dr Chipungu is highly experienced and respected within Zambia for his work in Environment, Fisheries and Wildlife management, and he should be a great asset to the project.

In UK there has been continued discussion of and contributions from socio-economics to the PSAP and the special study work-plans as a whole.

### 3.4.3. Current staffing schedule

Relevant staff and consultants are referred to above. In addition, Beatrice Marwa continues as local EE /Fisheries liaison officer for Tanzania, Paul Vare of ICCE as lead EE consultant and Julian Quan of NRI as overall SE /EE co-ordinator.

### 3.4.4. Main objectives and achievements

Covered above.

### 3.4.5. Main objectives for next quarter (until end May)

- full reporting from Zambia pilot PRA and training,
- work planning for Zambia consultants and local team
- work planning for Tanzania consultants and local team
- continued fieldwork in both of the above, and collaboration with Fishing Practices study fieldwork
- ICCE visits to Tanzania and Zambia to initiate EE action and grants to NGOs
- Monitoring visit to region by Julian Quan SE /EE co-ordinator
- Zambia local /provincial level project workshop at Mpulungu
- Further discussions with other LTBP study groups to improve integration of work in context of PSAP.

### **3.5. Progress Report: December - February 1997 for "Fishing Practices" Special Study**

#### **3.5.1. Overall Summary of Progress**

The key area of progress in this quarter was achieved during a 3 month field mission by Dr P Petit. Field teams for the special study were formed, village appraisals were carried out in collaboration with the Socio-economic Special Study in Gombe (Tanzania) and Nsumbu (Zambia). Teams were trained in the technical aspects of the fishing practices, i.e. fish identification, appraisal methodologies (e.g. semi-structured interviews, matrices), data collection, analysis and report writing. The reports detailing outputs from the village appraisals are currently being finalised.

#### **3.5.2. Chronology of Activities**

1. Dec-Feb: Field mission for Dr P Petit included work in Tanzania and Zambia.
2. Dec-Feb: Development of work plan for the Fishing Practices Special Study.
3. Feb: joint debriefing of Mr P Townsley, socio-economic special study consultant who worked with Dr P Petit in Zambian work.

#### **3.5.3. Staffing Schedule**

Special Study Director  
Dr Ian Payne, MRAG

Field Team Leaders  
Dr E Allison, MRAG  
Dr P Petit, Ecole National Superieure, Toulouse

Special Advisor  
Dr Rosemary Lowe-McConnell (Independent) Dr George Coulter (Independent)

Research Assistants (UK)  
Mr Mark Aeron-Thomas (MRAG)  
Ms Vicki Cowan (MRAG)

#### **3.5.4. Main Outputs and Achievements**

1. Collaborative field work with socio-economic special studies allowed development of complimentary methodologies. Joint field work is important to ensure compatibility of these two closely aligned special studies. The results from the appraisals will be available in the next quarter, when reports are produced and Dr Petit returns to the UK.
2. Dr Petit formed field teams for the Fishing Practices Special Study (FPSS), the teams then participated in planning, carrying out of village appraisals, analysis and

write-up of results. In Tanzania, the FPSS team was based at TAFIRI (Kigoma) and included people from TAFIRI, Department of Fisheries, and individuals from Uvira currently living in Kigoma. Dr Petit developed a detailed work plan for the team to execute in this quarter.

3. The work plans have been prepared for regional consultation.

#### 3.5.5. Main Objectives for the next quarter

1. Debrief Dr Petit on the mission, include leader of socio-economic special study in discussions to ensure that joint strategy developed in October 1996 is still valid.
2. Respond to comments from riparian collaborators on the work plans.

#### 3.5.6. Recommendations

1. Contracts with organisations/institutions indicated in the Work plans to be established as soon as possible.

### **3.6. Progress Report: December - February 1997 for Legal Component**

#### **3.6.1. Summary of Activities**

The dates for the legal workshop have been set for the first week in July. As a result of the discussions during a working group for the preliminary strategic action plan the scope of the workshop has been broadened. It will include a additional session on the legal/institutional aspects of community and joint management of natural resources and how such initiatives could be linked up to the inter-governmental structure for managing the lake.

#### **3.6.2. Chronology of Activities**

1. Dec - Feb: discussions on the potential content of the workshop while waiting for dates to be settled.
2. Jan: Zairian participants for the workshop nominated.
3. Feb: Date set for July 1997
4. Feb: Additional names for workshop participants proposed. These people would provide a perspective on riparian communities so that the legal workshop is not dominated by discussions of 'top-down' legal instruments.

#### **3.6.3. Current Staffing Schedule**

Special Study Director  
Dr Ian Payne, MRAG

Legal Specialist (Anglophone)  
Mr Cormac Cullinan, MRAG

Legal Specialist (Francophone)  
Mr Stephen Hodgson (Independent)

Legal Specialist (Conservation/Community) Mrs Dorothy Muzurewa (Independent)

#### **3.6.4. Main Outputs and Achievements**

1. Broadening the scope of the legal workshop to include issues arising from community based management is important. Given the fact that the capacity of several of the governments to enforce natural resources legislation is limited, it seems inevitable that the final strategic plan will involve a high degree of local management. Experience in other parts of the world suggests that legal issues often pose serious obstacles to such management regimes (e.g. inadequate legal recognition of customary

ownership and use rights, failure of central government to give legal status and enforcement powers to local management authorities; conservation legislation which precludes multiple uses of protected areas etc.).

2. The date for the workshop is the first week in July, 1997. The participants nominated by their countries are:-

Zaire: Madame Mbombo Mwakwilay Mangangi, Juriste  
Monsier Kalambay Lumpungu, juriste.

Zambia: Mrs. Mwinga, Legal Counsel of the Environmental Council of Zambia  
Mr. Muvwende, Legal Counsel, Dept. of National Parks and Wildlife

Tanzania: Mr Ibrahim Mkwawa, State Attorney of the Division of Environment.  
Mrs Verdiana N. Macha, Senior State Attorney.

Burundi: legal representatives to be finalised

### 3.6.5. Main Objectives Next Quarter

1. Preparation for workshop: specifically, research and write the workshop materials, send the briefing documents and TORs to the participants; allow for the participants to gather the relevant laws and information to bring to the workshop; arrange the workshop venue; make arrangements for us to visit the countries; and arrange participants to discuss the community management aspects mentioned above.

### 3.6.6. Recommendations

1. Administrative arrangements for the workshop started. Appropriate venue decided on with simultaneous translation.

### **3.7. Progress Report: December - February 1997 for Remote Sensing and GIS activities**

#### **3.7.1. Overall Summary Of Progress**

Further preparatory work has continued in line with progress towards meeting the remote sensing and GIS requirements of each of the Special Studies. A recent visit to the region by Mr. Patterson identified the need for tables or benches to be fitted in the NOAA receiver accommodation. The NOAA equipment has been shipped to Tanzania and is believed to have cleared customs in Dar es Salaam for onward transportation to Kigoma. Installation has been delayed owing to changes in TAFIRI staffing and the consequent need to identify a suitable counterpart for training. Feedback from Special Study team leaders is assisting the detailed design and population of the GIS and Project database.

#### **3.7.2. Brief chronology of activities and visits**

- No visits have been made to the region.
- Attendance at regular Project Management Meetings.
- Internal technical meetings and consultation to develop database design and remote sensing inputs.
- Meeting with Mr. Allison and Mr. Stones to discuss potential collaboration on Ph.D. work on the Malagarasi area.
- Preparation of map material for Project leaflet.

#### **3.7.3. Current staffing schedule**

##### **NRI**

I Downey

G Patterson

Vicky Copley (GIS map generation)

A. Mills (leaflet map production)

R Loftie (NOAA installation)

Judith Pender (GIS, ID representation)

##### **MRAG**

Vicki Cowan

J Pearce

##### **IFE**

T Bailey-Watts

#### **3.7.4. Main objectives and achievements**

The NOAA equipment has been shipped and installation can go ahead soon as a suitable counterpart is identified shortly. Production of a suitable map in support of the Project leaflet and to increase awareness of the GIS element of the Project.

#### **3.7.5. Main objectives for next quarter**

- Identification and training of suitable counterpart for NOAA operations.
- Installation of NOAA system and equipment at Kigoma.
- Further analysis of feedback from Special Study Groups on Remote Sensing and GIS requirements.

- Acquisition of archive NOAA data and HTS land cover map information.
- Continued acquisition, cataloguing and input of suitable data into the GIS and Project database.

### 3.7.6. Recommendations

- The NOAA installation phase should include a short training programme on data acquisition and analysis.
- Ongoing consultative meetings will be required to ensure requirements from discussions and the questionnaire survey achieve consensus compromise on inputs, analysis and products required of the GIS and project database.