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## Mission Report

### Expert Name and Function

Dr David Harper, Aquatic Ecologist, University of Leicester

### Wording of Mission:

Establishment of a laboratory at LNRA for biological and chemical analysis, Kenya.

### 1) CONTEXT

#### Place, Location

Kenya, Rift Valley Province River Malewa basin, Naivasha. Lake Naivasha Riparian Association offices and field locations.

#### Mission duration

One month

### 2) BACKGROUND TO THE MISSION

Lake Naivasha was declared a RAMSAR site by the Government of Kenya in 1995, after active lobbying by the Lake Naivasha Riparian Association. By 1999 the LNRA had mobilised other stakeholders in Kenya and around the basin and had drawn up a Community Management Plan. This Plan was submitted to the Kenya Government and, in November 2004 it was gazetted by them as the legal management document for the Lake Naivasha Ramsar site. A Management Committee was appointed with the LNRA as the secretariat for that committee.

The LNRA does not at the present time have any income other than the subscriptions of its members. It is not therefore able to initiate monitoring of the state of the lake, but instead relies on outside bodies to do that and feed the results to it. These then form part of the library, which is maintained by the Honorary Secretary.

The expert who made this mission has been the leader of the scientific research, which has taken place at Naivasha for many years. This mission was timed to help LNRA build a new laboratory, on land which had been made available to the organisation by the Hon Secretary, to be made out of buildings that were surplus to requirements at Kijabe Farm.

As part of another research project, funded by the UK government, a container of scientific equipment from the university of Leicester and from Shell International, had been shipped to Kenya and some of the contents of this were to be made available to the LNRA.



**3) OBJECTIVES**

Initial Objectives	Results	Results Indicator
<p>1. Assess needs of the Lake Naivasha, of the Malewa basin and of the LNRA for laboratory use and for monitoring.</p>	<p>1) A number of meetings were held at which the needs of the lake were discussed, with individuals and with the following bodies - IUCN, WWF, Lake Naivasha Growers Group (LNGG), Nature Kenya, East African Wildlife Society.                  2) Excursions were made with members of the Nature Kenya local support group, Friends of Kinangop, to evaluate the needs of the rivers in the upper basin and the abilities of the local communities to be partners in monitoring the health of the aquatic systems.                  3) Discussions were held with LNRA officials to assess the needs for laboratory design and construction.</p>	<p>A general laboratory, a specialised smaller laboratory and a scientific office have been constructed and are in use.                  Networks of monitoring are being set up.</p>
<p>2. Identify the necessary monitoring parameters and discuss with stakeholders how and how often they should be measured, and by whom</p>	<p>Meetings were held with scientists from Kenyan universities (Nairobi, Egerton), from the horticultural industry including consultants and chemical suppliers to it, from NGOs (as above) and government monitoring agencies (Water Authority, NEMA- National Environmental Management Agency) to identify parameters</p>	<p>A workshop has been set up to be held in April 2007, involving all stakeholders</p>
<p>3 Implement a monitoring programme</p>	<p>A manuscript has been written as a consequence of the above discussions for presentation to the proposed workshop, translating research objectives and results into monitoring needs and proposed means of achieving them.</p>	<p>Monitoring data and publications, demonstrating use of the laboratory.</p>



**4) ACTIVITIES DEVELOPED during the mission**

<b>Activity 1</b>	<b>Topic: Institutional, Communication</b>
<b>Description</b>	<p>There is a strong need for a central lead in the monitoring of ecological health in the Malewa basin. The development of a laboratory at the LNRA, together with associated facilities, such as scientist accommodation (an old caravan and a camp site with ablutions) and office, will provide that. The LNRA already have the lead role allocated to them by the Government gazettement of the Management Plan.</p> <p>The Mission attempted to bring together all the stakeholders who have an interest in the lake around this central facility and, although the development was not as fast as had been hoped, it will be continued on a subsequent visit with the main them of the Mission being the topic of a 1-day workshop which is being organised under LNRA leadership in April 2007..</p>

<b>Activity 2</b>	<b>Topic: Community inclusion</b>
<b>Description</b>	<p>All stakeholders accept the need for inclusiveness in their activities associated with lake Naivasha. The topic is very sensitive, because the lake and much of the lower basin were once the land of the pastoralist Masaai tribe. It was taken from them in 1904 by agreement with the Colonial government, an agreement which the Masaai now say was achieved by trickery. Masaai leaders are claiming back much of their ancestral lands from the present-day government, but there is no official support for this claim, because of the other claims it could precipitate.</p> <p>The LNRA was very careful to include all stakeholders in its deliberations over the Management Plan, even representatives of illegal fishermen, in attempts to be as inclusive as possible and avoid any reasonable later claims of exclusion.</p> <p>The Mission tried to take a similar even-handed approach and evaluate the relevance of scientific monitoring and its results to as many community stakeholders as was possible in the time.</p> <p>One approach was to try to put in place the infrastructure which would enable carbon sequestration to take place, initially through voluntary trading schemes. The Polish members of this Twinbasin partnership have experience of carbon trading and advised on the necessary procedures. This Mission established pathways with stakeholders who will be able to take responsibility for re-forestation and maintenance, eventually leading to measurement and certification of the carbon quantities sequestered in above ground biomass and soil organic carbon. This was seen as one possible long-term means of funding the necessary monitoing activities discussed above.</p>

#### **4. LESSONS LEARNED during the mission**

##### **About methodology**

The methodology in this Mission varied from the practical science of designing a laboratory within available space (a former stable block!) to the theoretical science of monitoring parameters and the compromise science of seeking to develop a monitoring programme within a fully voluntary framework with now central government funding. The main lesson learned was the need to be flexible and patient.

##### **About practice:**

Many people were highly supportive of the creation of laboratory facilities but few of these could envisage using them. Visiting universities would use them and could also make a major contribution to a monitoring programme, once established. In Kenya however, such universities would need to use the facilities at zero cost or they could not afford to come. In reality therefore, a functioning laboratory and a functioning monitoring programme are unlikely to exist in practice without external funding. The establishment of such a funding stream is not an easy task. The hardest lesson learned in this Mission was that there is a great distance between ideals and reality.

#### **5. DISSEMINATION (opportunities and difficulties)**

- **The basin organisation the expert belongs to**

Basins in the developed world do not appreciate how fortunate they are to have the infrastructure which achieves highly efficient management objectives, mostly through professional organisations.

Organisations within the basin however, if not directly charged with water responsibilities (e.g. Environment Agency), often place basin issues on the 'back boiler'. There is still therefore, a gap between water professionals, other environmental management professionals and voluntary action. Experiencing a tropical basin without a professional infrastructure of water- and non-water experts and without an advanced infrastructure of voluntary activities, illustrates the gaps in the UK IWRM management through experiencing them in the Malewa.

- **National IWRM practice**

It is accepted that the legal situation in Kenya, with the passing of the 2002 Water Act, is favourable toward IWRM. The development of the infrastructure, through government basin authorities at the centre, coordinating Water Users Associations who are made up of voluntary individuals and groups (who use basin water), is still to follow. The Mission tried to advance the establishment of WUAs at Naivasha and the upper catchment, which is progressing, but is largely in private control. This is through the sponsorship of a consultants' study of the usable water available from lake Naivasha by two of the major horticultural companies.



- **Regional Experience**

Lake Naivasha and the Malewa basin is one of the most intensively used basins in tropical Africa. It is recognised by individuals that a resolution of the problems of water quantity (allocation of abstraction share) and water quality (monitoring of maintenance of ecological, biological and chemical quality). The results therefore of the progress towards IWRM in Naivasha be of great interest throughout the tropics.

- **Worldwide**

The sustainable management of water basins for human benefit is one of the most pressing environmental issues all over the world. The new sub-discipline of Ecohydrology attempts to drive an integration of scientific hypotheses with socio-economic needs to achieve this. Lake Naivasha has become a UNESCO IHP Ecohydrology Demonstration site, because of the ways in which the LNRA and its partners are seeking to harmonise lake water use and lake water quality. The establishment and continued maintenance of a laboratory is an essential support item for this status.

## **6. IDENTIFIED TIPS**

Throughout the Mission, it was clear that many people in the Naivasha area are concerned about the ecological state of the lake, but they mostly sought people and institutions to blame for this and people and institutions who should 'put it right'. It is essential to embark on the Mission with an open mind about problems and possible solutions..

The Mission was proposed to Twinbasin as one which would solve an identified problem. It has been one which began to solve the identified problem but within the context of a far larger problem which will require many steps to solve. The Mission achieved its objectives but identified many more.

## **7. PERSONAL COMMENTS**

This Mission was highly valuable. Many new contacts have been made incidentally to those as part of the main objective of the Mission and future development of these will be at least as beneficial as the Mission itself.

## **8. CONTACTS**

Nature Kenya, National Museums of Kenya, Nairobi. All staff can be reached at [office@naturekenya.org](mailto:office@naturekenya.org)

Professor Kenneth Mavuti; Director of International Programmes & Links, University of Nairobi, Nairobi, Kenya.