

## **Summary of Project Document**

### **UNDP/GEF Project on Partnership Interventions for the Implementation of the Strategic Action Programme for Lake Tanganyika**

### **Support for the Lake Tanganyika Regional Monitoring Programme**

### **Monitoring and Management of Biological Invasions in Lake Tanganyika**

**IUCN Project 77211-000**

**IUCN – International Union for Conservation of Nature  
Invasive Species Initiative  
IUCN Eastern and Southern Africa Regional Office  
P.O. Box 68200, Nairobi 00200, Kenya**



## **Introduction**

Biological invasions are becoming a serious threat to biodiversity, ecosystem function, development and peoples livelihoods in many inland waters and terrestrial areas of Africa. Foreign species are being introduced, intentionally and unintentionally to productive systems like Lake Tanganyika and causing problems with ecosystem services, water quality and quantity, yields from fisheries, forestry and agriculture as well as valuable biological diversity. Within the Lake Tanganyika Regional Monitoring Programme it was suggested that a sub-component be dedicated to establishing the risks presented by invasive species and a monitoring programme prepared that would lead to their prevention and management into the future. This was presented at the Third Council of Ministers of Lake Tanganyika in Uvira in August, 2009 and approved by that meeting. IUCN was then requested to develop a project proposal which was subsequently accepted by UNDP/UNOPS and is presented in summary below.

## **Objectives**

IUCN, through this sub-project, is a component of a partnership within the Strategic Action Programme, which has the Immediate Objective *“To protect and conserve the biodiversity and the sustainable use of the natural resources of Lake Tanganyika”*.

The Overall Development Objective of the IUCN sub-project is *“To reduce the loss of biodiversity and ecosystem functions in the Lake Tanganyika basin – especially those threatened by biological invasions”*. The Main Objective of the sub-project is *“To contribute towards the establishment and implementation of a programme to assess and respond to existing and potential threats of invasive species in Lake Tanganyika and its catchment”*

IUCN will address the main objective through five key outputs (below) over the project period which is 2.5 years. The extent to which these results can be achieved is constrained by the budget available for this sub-contract, but the principles remain valid and the extent of their implementation could be expanded if more funding became available.

### **Result 1. Information available to the managers and people of the Lake Tanganyika ecosystem to address actual and potential invasive species**

Information about species of animals and plants that are, or may be, invasive in the Lake Tanganyika ecosystem presently consists of scattered reports, personal observations and a technical report from IUCN (2007, updated in 2008), which refers only to portions of the ecosystem. There is need to gather reliable information, extend the survey of likely invasive species, search for more information and prepare a comprehensive technical working document. This will then be used as technical background information for the Invasive Species Monitoring Introduction Workshop in the 4<sup>th</sup> quarter of 2010 or early 2011.

### **Result 2. A monitoring programme is put in place for the detection of existing and potential invasive species in the Lake Tanganyika ecosystem (see Annex 1, attached)**

A key part of the IUCN sub-project is the development of a workable monitoring programme for biological invaders. This will cover the open waters and littoral and sub-littoral areas of the lake, which harbour the highest levels of aquatic and semi-aquatic species diversity (including animals and plants). The monitoring will also include other parts of the catchment that are vulnerable to the development of biological invasions, such as beaches, shallow waters, wetlands, and small floodplains, as well as river mouths and deltas, which are favoured sites for aquatic and terrestrial species that can cause invasions.

A draft monitoring programme plan was discussed during the Invasive Species Monitoring Introduction Workshop (in Bujumbura in March, 2010) for feasibility and practicality as well as coverage of the lake and its catchment

### **Result 3. Management of key existing biological invasions established in the lake Tanganyika ecosystem**

There are at present several biological invasions in the lake ecosystem that need quick action to reduce their impact and lower their capacity to spread to new areas. This applies especially to water hyacinth (*Eichhornia crassipes*) and the red water fern (*Azolla* sp.). These invasive aliens are spreading as well as depositing seeds and spores in the lake edges for further germination and future dispersal. The water hyacinth and red water fern can be partially controlled, or at least reduced in impact by mechanical clearing and cautious aid of some herbicides. Such options will be discussed and debated and an investment made in the pilot management of a selected number of invasions.

### **Result 4. Capacity of the Lake Tanganyika Authority and riparian governments built and regulations drafted for the prevention and management of biological invasions in the Lake Tanganyika ecosystem**

Recognizing potentially invasive species as well as established invasions and then knowing what to do requires capacity and experience among natural resource managers. The IUCN Invasive Species sub-project will develop training materials that can build capacity of relevant stakeholders. This will enable them to become familiar with the principles of invasion biology and the prevention and management of biological invasions. The materials prepared will be the subject of training events for technical staff for capacity building together with sources of other relevant information on websites and in available publications. This training (capacity building) will enhance the process of regulation preparation as well as the effectiveness of the monitoring programme.

### **Result 5. Sub-Project managed and reporting as required**

The project will be managed by IUCN from its office in Nairobi, Kenya, in close cooperation with the PCU of the UNDP/GEF Project at the LTA Secretariat in Bujumbura. Accounts of income and expenditure will be managed by IUCN and quarterly reports prepared by IUCN for the PCU and UNOPS and will be answerable to the main Project Steering Committee.

#### **Budget and timeframe**

The sum of USD170,050.00 has been made available for the implementation of this project over the next 28 months, ending in September 2012.

**ANNEX 1: Main taxa/types of organisms of actual and potential invasive species to be monitored in Lake Tanganyika and its catchment**

Higher taxon or category	Taxa or life type	Examples encountered or reported	Notes
<b>Lower plants</b>	Algae and protophyta	Eutrophic algae causing “fish kills”	Not found during recent IUCN surveys but previously described in literature
<b>Aquatic higher plants</b>	Floating plants	<i>Eichhornia crassipes</i> <i>Pistia statiotes</i> <i>Azolla</i> spp.	Prevalent in northern areas of the lake that have previously been surveyed for invasive species. Unconfirmed reports exist of <i>Pistia</i> in Zambian and Tanzanian waters.
	Emergent plants	<i>Typha domingensis</i> <i>Vossia cuspidata</i>	Widespread
	Submerged plants	<i>Ceratophyllum demersum</i> <i>Potamogeton</i> spp. <i>Hydrilla verticillata</i> <i>Najas</i> sp.	Difficult to detect, but known from sightings and records to be present in the lake
<b>Higher plants associated with damp places, water courses, floodplains</b>	Herbs	<i>Ludwigia</i> spp. <i>Polygonum</i> spp. Ferns	Obvious, and known from sightings to occur in the lake basin
	Shrubs	<i>Mimosa pigra</i> <i>Mimosa diplotricha</i>	Recorded and reported on
<b>Invertebrates</b>	Arthropods – Crustacea	<i>Procambarus clarkii</i> and/or other species of freshwater crayfish	Reported from areas in the vicinity of the Lake Tanganyika catchment. Likely to have significant detrimental impacts on local ecosystems if they enter the lake basin
	Molluscs	Gastropods, Bivalves	No records yet but likely serious if introductions occur
<b>Vertebrates</b>	Fish	Details to be researched	Many fish exotic to the lake have been introduced over the last 70 years – their present status is unknown in most cases