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**An Aide-Memoire:
The Convention on
Biological Diversity
And the
Global Environment Facility
BIOSS Report**

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

**Lutte contre la pollution et autres mesures visant à protéger la
biodiversité du Lac Tanganyika (RAF/92/G32)**

Le Projet sur la diversité biologique du lac Tanganyika a été formulé pour aider les quatre Etats riverains (Burundi, Congo, Tanzanie et Zambie) à élaborer un système efficace et durable pour gérer et conserver la diversité biologique du lac Tanganyika dans un avenir prévisible. Il est financé par le GEF (Fonds pour l'environnement mondial) par le biais du Programme des Nations Unies pour le développement (PNUD)"

The Lake Tanganyika Biodiversity Project has been formulated to help the four riparian states (Burundi, Congo, Tanzania and Zambia) produce an effective and sustainable system for managing and conserving the biodiversity of Lake Tanganyika into the foreseeable future. It is funded by the Global Environmental Facility through the United Nations Development Programme.



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I perceived a need for a document of this nature through conversations with many people interested in Lake Tanganyika - its biodiversity and the well-being of the people who live around it and use its resources. I am grateful to all these individuals for their contributions and encouragement. I hope I have been able to answer some of their questions. The views expressed in my commentary of GEF objectives and project activities are mine, and do not necessarily reflect those of the project.

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1 BACKGROUND TO THIS DOCUMENT¹

This document intends to provide an introduction to the 'Convention on Biological Diversity' and the operational programmes of the 'Global Environment Facility' that relate most closely to the Lake Tanganyika Biodiversity Project. I hope it will be useful to all those who interact with the project, those with an interest in conservation, resource management and development in the lake basin, and those working on other GEF projects on African Lakes. The document is particularly targeted at research scientists who wish to understand where their work fits in with the broader objectives, not only of this project, but of the major international effort to protect the environment and allow sustainable development.

Many who work for the project, or who are conservation biologists, will be familiar to some degree with the CBD and the funding priorities of the GEF. We recognise, however, that these documents are not widely available except over the internet, are lengthy and contain legal and management jargon that may not be familiar to all. I have therefore extracted the most relevant sections of the CBD and the operational programmes of the GEF, and have summarised them, adding commentary and explanation where necessary.

1.1 Introduction

The global nature of the World's environmental problems - pollution, climate change and biodiversity loss - necessitate global action. In recent years, there has been a proliferation of global treaties, agreements and conventions that have aimed to ensure all countries provide a commitment to solving global environmental problems.

At the same time, there has been continuing concern to improve food security and living standards for the world's human population. Through the work of the UN agencies, national government aid programmes and non-governmental organisations, there has been a global commitment to development.

These two major endeavors were previously seen as incompatible; maintaining and improving the natural environment on the one hand and providing opportunities for economic development, eradication of poverty and improvement of living standards on the other. Many people thought that development meant environmental destruction. It is now increasingly apparent that without maintaining the natural environment, development will not be sustainable. Additionally, it is recognized that poverty and income disparities (the gap between rich and poor) are major underlying causes of environmental destruction in developing countries. Eradicating poverty would alleviate pressure on natural resources. This growing synergy between environment and development imperatives culminated in the UN Conference on Environment and Development, which took place in Rio de Janeiro, Brazil, in 1992.

One of the major outputs from the Rio Conference was the presentation of a global initiative to conserve, use sustainably and share benefits from the use of biological resources — The Convention on Biological Diversity (CBD). The Convention covers a very broad range of concerns linked to loss of biodiversity, and provides the policy and legal framework for most natural resource programmes undertaken today by the World's national governments, international organizations, NGO's and conservation institutions.

The CBD sets out countries' commitments to biodiversity conservation, sustainable use and equitable benefit-sharing. It is obvious that a country's ability to meet these needs will depend on the financial and institutional resources available to it. At the same meeting in Rio, the World Bank therefore agreed to use the 'Global Environment Facility' to enable developing countries to meet their commitments to the CBD and other international environmental agreements.

The Global Environment Facility (GEF) is a financial mechanism that provides grants to assist developing countries to address environmental problems that transcend international borders,

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in four areas: global climate change, pollution and overexploitation of international waters, destruction of biological diversity, and depletion of the ozone layer. It will also fund activities associated with preventing or reversing land degradation, providing this has an impact on one of its four focal areas. The GEF is jointly implemented by the United Nations Development Programme (UNDP), the United Nations Environment Programme (UNEP) and the World Bank.

[\(follow links to CBD and operational programmes of GEF documents\)](#)

2 THE CONVENTION ON BIOLOGICAL DIVERSITY (CBD)

2.1 What is the CBD?

The Convention on Biological Diversity (CBD, or 'The Convention') is a commitment by the nations of the world to conserve biological diversity, to use biological resources sustainably and to share equitably the benefits arising from the use of genetic resources.

The Convention entered into force on 29 December 1993, but was essentially designed and opened for signature by the world's nations at the 1992 United Nations Conference on Environment and Development in Rio de Janeiro.

The Convention, which currently has over 200 signatory countries, is an international recognition that biodiversity and biological resources should be conserved for reasons of ethics, economic benefit, and, in the long term, human survival. It is important to note, however, that the Convention goes beyond conservation, to include issues related to social and economic development.

The CBD is a 'framework agreement'. This means that it leaves it up to individual countries to determine how most of its provisions are to be implemented. Its provisions are mostly expressed as overall goals and policies, rather than as hard and precise obligations. In this way, it is different to other international environmental agreements, such as the Convention on International Trade in Endangered Species (CITES).

Nor does the CBD specify targets in the way that international agreements to reduce greenhouse gas emissions do. Instead, the emphasis in the CBD is to place the main decision-making at the national level, and there are no lists, annexes of designated sites, or prioritised lists of species to be conserved.

2.2 The Articles of the CBD

The Convention consists of some 42 'Articles' covering purposes, definitions, policies and implementation strategies. I have extracted those articles likely to be of relevance or interest to those involved in the Lake Tanganyika project, and summarised them briefly below. I have added some explanatory notes and an indication of what the Lake Tanganyika project is doing towards meeting some of the commitments expressed in the CBD. This provides a linkage with the project document, inception report, strategic action plan, special study work-plans and other project planning and technical reports. I have put in italics the sections which I have added to the basic text of the convention itself.

Article 1: Objectives

- Conservation of biological diversity.
- Sustainable use of its components.
- Fair and equitable sharing of the benefits arising out of the utilisation of genetic resources.

Article 2: Use of terms

The following definition of 'Biodiversity' was agreed, and is the one operated by the Lake Tanganyika Biodiversity Project:

"Biological diversity" means the variability among living organisms from all sources including, *inter alia*, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems.

Other operational definitions relevant to LTBP include:

- "Ecosystem" means a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit;
- "Habitat" means the place or type of site where an organism or population naturally occurs;
- "Protected area" means a geographically defined area which is designated or regulated and managed to achieve specific conservation objectives;

- “Sustainable use” means the use of components of biological diversity in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations; and,
- “Biological resources” includes genetic resources, organisms or parts thereof, populations, or any other biotic component of ecosystems with actual or potential use or value for humanity.

Article 3: Principle

This article upholds the UN Charter on sovereign rights in international law, and recognises the right of nations to exploit their own resources and set their own environmental policies. Their international responsibility is to ensure that activities within their jurisdiction or control do not cause damage to the environment of other states or areas beyond the limits of national jurisdiction.

This is an important statement, as it represents a partial rejection of the notion that ‘biodiversity belongs to all humanity’ and recognises the right of nations to exploit their biological resources according to their own needs. This was a significant victory for developing countries against what they saw as ‘green imperialism’; the imposition of conservation measures by western countries, who were claiming biodiversity as ‘global common property’ and rejecting the concept of ‘ownership’ or ‘stewardship’ of biological resources.

In the context of the Lake Tanganyika project, this means, for example, that individual states retain the rights to make their own conservation policy but have to do their best to prevent ‘significant transboundary harm’. This could mean preventing over-exploitation of a fish stock that is shared between two or more countries. More broadly, the process of meeting international obligations while retaining sovereign rights is facilitated through the preparation of country specific strategic action programmes. The transboundary concerns in Lake Tanganyika will then be addressed by representatives from all four riparian nations working together to carry out a Transboundary Diagnostic Analysis (Lusaka, 23-27 Nov 1998).

Articles 4&5: Jurisdictional scope and co-operation

These articles are concerned with jurisdictional scope of the agreements, and with policies for co-operation with international agencies such as UNEP, UNDP etc.

Article 6: Measures for conservation and sustainable use

This article requires each party to develop national strategies, plans or programmes to conserve biodiversity and use biological resources sustainably. Article 6 is essentially about planning and policy making at national level.

*In the context of the Lake Tanganyika project, this stresses the importance of incorporating each riparian countries **Strategic Action Programmes for Lake Tanganyika** into their national biodiversity conservation and sustainable use policies and programmes. Country plans are in production, or have been produced, for all four countries involved in the project. To date the country reports for Democratic Republic of Congo and Zambia can be found at the following URLs:*

<http://www.biodiv.org/natrep/Zambia/zambia.pdf>

<http://www.biodiv.org/natrep/RDCongo/rdcongo.pdf>

The LTBP aims to ensure that concerns specific to Lake Tanganyika are represented in these national plans. By November 6th 1998, each country (except DR Congo, one workshop) will have had two workshops to identify environmental concerns with respect to the Lake, prioritise actions, and delegate responsibility for these actions to national institutions. Reports from these national workshops are available in both French and English from: www.ltbp.org

Article 7: Identification and Monitoring

This requires each country to:

7a - identify components of biological diversity important for conservation and sustainable use

7b - Monitor the components of biological diversity

7c - Identify and monitor processes and categories of activities having or likely to have significant adverse impacts on the conservation and sustainable use of biodiversity

7d – maintain and organise the data derived from identification and monitoring activities

In LTBP, the Biodiversity special study is contributing to the signatories commitments to 7a, 7b and 7d, while the pollution, sedimentation and fishing practices special studies contribute most specifically to 7b and 7c. These contributions are detailed in the [Special Study Work-plans](#)

Article 8: In-situ conservation

Sets out the major policies for effective in-situ conservation, giving countries a set of goals against which to match their own laws and policies. There are twelve specific commitments, the ten most relevant of which are for each country, as far as possible and as appropriate, to:

- i. establish a system of protected areas;
- ii. develop guidelines for the selection, establishment and management of protected areas;
- iii. regulate or manage biological resources important for the conservation of biological diversity whether within or outside protected areas, with a view to ensuring their conservation and sustainable use;
- iv. promote the protection of ecosystems, natural habitats and the maintenance of viable populations of species in natural surroundings;
- v. promote environmentally sound and sustainable development in areas adjacent to protected areas with a view to furthering protection of these areas;
- vi. rehabilitate and restore degraded ecosystems and promote recovery of threatened species, *inter alia*, through the development and implementation of plans or other management strategies;
- vii. regulate use and release of genetically modified organisms that could have adverse environmental impacts;
- viii. prevent the introduction of, control or eradicate those alien species which threaten ecosystems, habitats or species;
- ix. respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge; and,
- x. develop or maintain necessary legislation and/or other regulatory provisions for the protection of threatened species and populations.

Most of the above points are actions that may follow from recommendations produced by the national working groups, or from the implementation of prioritised actions identified through the strategic action programme. Within the lifetime of the project, the biodiversity special study addresses I, ii, and iv directly.

Article 9: Ex-Situ conservation

Five major policies for effective ex-situ conservation are detailed under this article.

This conservation strategy is not being addressed through the project at present

Article 10: Sustainable use of Components of Biological Diversity

This article addresses policies for sustainable use of biological resources. As well as affirming a commitment to integrating conservation and sustainable use of biological resources into national decision-making, there is strong support for protecting and encouraging 'customary use' of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use, and to support local populations to develop and implement remedial action in degraded areas.

The Fishing Practices and Socioeconomics components of the special study programme have been exploring [traditional resource management practices in Zambia](#) through [participatory rural appraisal studies](#)

Article 11: Incentive Measures

This relates to adoption by national governments of sound economic and social incentives for conservation and sustainable use of biodiversity.

Article 12: Research and Training

This provides a broad commitment to establish and maintain programmes for scientific and technical education and training to support identification, conservation and sustainable use of biological diversity, with specific reference to the needs of developing countries. It stresses the need for both natural sciences (taxonomy, applied ecology, conservation biology) and social sciences (anthropology, environmental economics, law, geography, political science and sociology) and education at technical level (e.g. fishery field extension officers, environmental impact specialists, computer and database managers).

In LTBP, technical training is carried out in association with the various Special Studies, both through on-the-job skill sharing and targeted workshops and courses. The project's [training strategy](#) addresses both technical training and broader issues in institution building such as communication and management skills.

Article 13: Public Education and Awareness

This recognises that interest and awareness of environmental issues is fundamental to conservation, and sets out a commitment to increasing public understanding of issues related to biodiversity conservation.

In LTBP, this is addressed through the [Environmental Education](#) component.

Article 14: Impact assessment and minimising adverse impacts

This article encourages the introduction of procedures for environmental impact assessment.

In LTBP, the Biodiversity, Pollution and Sedimentation special studies will develop technical skills in riparian teams that will be valuable to future development of EIA procedures on the lake. The Legal and Institutional component of the project is drafting an international agreement, components of which may address the requirements for EIA's in Lake Tanganyika. The project is thus moving towards developing an EIA capability, but the current special studies monitoring and assessment procedures do not utilise a formal EIA procedure

Articles 15/16: Access to Genetic Resources and Technology Transfer

These set out the conditions of access to genetic resources and access to and transfer of technology.

Articles 17/18: Exchange of Information / Technical and Scientific Co-operation

These articles set out the principle of free and facilitated sharing of information, particularly with developing countries, and the promotion of international technical and scientific co-operation in the fields of conservation and sustainable use of biodiversity. In promoting such co-operation, special attention should be given to the development and strengthening of national capabilities, by means of human resources development and institution building.

The Lake Tanganyika Biodiversity Project is committed to human resources development and institutions building. To carry out its work, LTBP establishes 'Letters of Agreement' with relevant national institutions, e.g. Universities, parks and wildlife, fisheries research, water affairs etc. These institutions then commit staff to the project to help execute the LTBP work programmes. Institutions are strengthened when the staff committed to the project return to their departments with new knowledge and skills.

All collaborating and co-operating institutions are urged to examine these articles in detail and to comply with them as fully as possible. Particular attention should be paid to [Guidelines for](#)

[Good Practice in Collaborative Biodiversity Research²](#) and to the requirements for **free and facilitated sharing of information with developing countries**. Failure to share biodiversity information constitutes a violation of a signatory country's commitment to the CBD.

Article 19: Handling of Biotechnology and Distribution of its Benefits

Sets out the need for suitable policy measures and protocols needed to ensure appropriate handling of biotechnology and the distribution of its benefits.

Articles 20/21/39: Financial Resources/Financial Mechanism/Financial Interim Arrangements

Three articles examine and propose funding mechanisms and sources, with Article 39 proposing the Global Environment Facility (GEF) as an interim funding mechanism. The GEF also funds the implementation of other international environmental agreements, such as those on global climate change.

Article 22: Relationship with other International Conventions

Relevant policies and legislation include the Ramsar Convention, Convention on Protection of the World Cultural and Natural Heritage, and CITES.

In LTBP, the international agreement being drafted under the legal and institutional component will draw heavily on the existing international obligations of the riparian states.

Articles 23-42

Relate to implementation strategies such as creation of a secretariat within UNEP, reporting procedures, amendments to the convention and other legal and institutional issues.

In LTBP, the creation of a regional institution to develop and manage the strategic action programme (SAP) is addressed in both the legal and institutional component and the process that develops the first SAP within the project. The relationship between this body and the secretariat noted in Articles 23-42 will be defined as the Lake Tanganyika body is developed. The information informing the Lake Tanganyika SAP will be an important component of each country's contributions to the CBD.

2.3 Summary

In summary, the CBD is a legal document, emphasising planning and policy. The LTBP is funded by the GEF to assist Burundi, DR Congo, Tanzania and Zambia in meeting their obligations as signatories to this Convention. This is why the project emphasises the importance of strategic planning and policy-relevant research and training activities.

² For example, see: Jermy, Long, Sands, Stork, Winser (Eds) (1995). Biodiversity Assessment: a guide to good practice. Department of the Environment/HMSO, London. The document outlining standing instructions for BIODIVERSITY draws from this source.

2.4 Further Information

The full text of the Convention on Biological Diversity is available as:
United Nations Environment Programme (1992) *Convention on Biological Diversity*. Special Edition, UNEP, Nairobi.

URL: <http://www.biodiv.org/>

A guide to that text, designed for those involved in activities that support the Convention, is also available:

Glowka, L. *et al.*, (1994) *A Guide to the Convention on Biological Diversity*, IUCN Gland and Cambridge. Xii + 161 pp.

A summary of UNEP's work programmes in biodiversity can be found in:

UNEP (1995). *The UNEP Biodiversity programme and implementation strategy*. UNEP

UNEP (1995). *Global Biodiversity Assessment – Summary for Policy-Makers*. Cambridge University Press. (the full text is available as a very large book from the same publisher).

3 THE GLOBAL ENVIRONMENT FACILITY

3.1 What is the GEF?

The Global Environment Facility (GEF) is a financial mechanism and policy instrument designed specifically to assist developing countries in meeting their obligations as signatories to international environmental agreements. It can be seen primarily as a funding source, with specified policies for the use and allocation of funds. It provides grants to assist developing countries to address environmental problems that transcend international borders in four areas: global climate change, pollution and overexploitation of international waters, destruction of biological diversity and depletion of the ozone layer. It will also fund activities associated with preventing or reversing land degradation, providing this has an impact on one of its four focal areas.

It is regarded as an experimental institution, and the interim mechanism for funding biodiversity conservation programmes and other environmental management initiatives. Once environmental issues such as biodiversity conservation have been 'mainstreamed' as government policy (one of the central objectives of the CBD), funding would come from central government sources and international development organisations.

The money was pledged by the World Bank at the 1992 Rio summit on Environment and Development. The GEF funds and programmes are administered jointly by the UN Environment Programme and the UN Development Programme, thereby ensuring that both environmental and development issues are addressed.

The GEF has a number of focal areas, within which are operational programmes that specify objectives related to areas identified as priorities for environmental management. The two **focal areas** relevant to the Lake Tanganyika Biodiversity Project are 'Biological Diversity' (Section 3.2) and 'International Waters' (Section 3.3). The two **operational programmes** within these focal areas that are most relevant are 'Biodiversity of Coastal, Marine, and Freshwater Ecosystems' and 'Waterbody-based programme'. The operational programme on 'Integrated Land and Water Multiple Focal Area' is also relevant, but is not described in detail here.

In the case of biodiversity, the GEF is designed to assist countries rich in biodiversity but poor in resources to ensure biodiversity is conserved, used sustainably and its benefits shared equitably. For international waters, the GEF assists countries in the management of pollution and exploitation of resources that impact on the state of international waters or on the territorial waters of other nations.

Below are presented, for each of the two operational programmes, outlines of the types of interventions for which GEF assistance can be sought, expected outcomes of projects within each programme and the types of activities that are envisaged. These are selected sections, chosen to indicate the major priorities and represent the range of activities the GEF funds. Knowing what the GEF will fund, and the criteria by which the project will be judged, should clarify the purpose of the many activities taking place within the project. To further assist in this clarification, a brief summary of project activities that address the objectives and outputs of these programmes is also given. These are written in italics, to distinguish them from the program descriptions provided by the GEF (normal text). It should be noted that the GEF's strategies and programmes are evolving as experience is gained globally. The Lake Tanganyika Project takes place in the context of these changes. The design of the project therefore reflects GEF's earlier (and less precise) operational guidelines, but has responded flexibly to the changing priorities and *modus operandi* of the GEF. A much more detailed account of the evolution of both the GEF's operational strategies and programmes, and the LTBP's strategies and programmes, can be found in:

[Hodgson, N. \(1997\). The Lake Tanganyika Programme and Evolving GEF Operational Strategies. UNDP/GEF/FAF/92/G32.](#)

3.2 GEF Focal Area: Biodiversity

GEF operational program no. 2: Coastal, Marine and Freshwater Ecosystems

This Operational Program responds to the three sets of guidance provided by the Convention on Biological Diversity (CBD) to the GEF.

- i. Projects that promote the conservation and sustainable use of biological diversity of coastal and marine resources under threat.
- ii. Finance for measures for conservation and sustainable use and for in-situ conservation, through "the use of integrated marine and coastal area management as the most suitable framework for addressing human impacts on marine and coastal biological diversity and for promoting conservation and sustainable use of this biodiversity".
- iii. The CBD executive committee also reaffirmed that "the ecosystem approach should be the primary framework of action to be taken under the Convention".

The LTBP recognises and responds to the importance of Lake Tanganyika's biodiversity as a resource thought to be under threat. The project has also taken the ecosystem as its action framework, with the lake ecosystem being defined in its broadest terms, i.e. including the lake catchment area. Single-species and population-level conservation programmes are less appropriate to the nature of the threats to diversity, and to the possible means to respond to those threats.

3.2.1 Program Objective

The objective of this Operational Program is the conservation and sustainable use of the biological resources in coastal, marine, and freshwater ecosystems generally (including lakes, rivers and wetlands, and island ecosystems).

- i. **Conservation** can be ensured by ecosystem functioning through the establishment and strengthening of systems of conservation areas. The scope will be tropical and temperate coastal, marine, and freshwater ecosystems areas at risk.
- ii. **Sustainable use** can be ensured by systems that combine biodiversity conservation goals, production goals, and socio-economic goals. The scope, as set out in the Operational Strategy, includes strict protection on reserves, various forms of multiple use with conservation easements, and full-scale use.

This Operational Program will be implemented in conjunction with those in the International Waters focal area. For in-situ conservation of areas of global importance there is a large body of work in identifying particularly coastal/marine, and wetland areas that should be conserved to represent major habitat types and their species. National priorities are often expressed in the National Biodiversity Strategies and Action Plans, and in national plans such as UNCED reports, Tropical Forestry Action Plans, National Environment Action Plans, etc.

LTBP expresses national priorities for biodiversity conservation and sustainable use through its Strategic Action programmes, developed by representatives of management agencies and other stakeholders in the four countries that share Lake Tanganyika's waters.

3.2.2 Expected Outcomes

A successful outcome is one where globally important biodiversity has been conserved and sustainably used in a specific coastal, marine, or freshwater ecosystem.

3.2.3 Monitoring Outcomes

Outcomes would be monitored and evaluated by measuring key indicators of ecosystem structure and function, and of sustainable use. Examples of monitoring and evaluation methodologies and tools include:

- a. measures of the population of native species, showing these to be high enough to be viable in-situ;
- b. measures of the population of key alien, invasive species;
- c. ecological surveys within protected areas, showing the presence and abundance of indicator or keystone species; and,
- d. measures on the quality of the processes (e.g. water quality, nutrient cycling, etc.) that maintain the integrity of the ecosystems.

The LTBP [special studies](#) are designing monitoring programmes that address both biotic indicators of ecosystem health and integrity (a-c) and the maintenance of key 'ecosystem services' (d).

3.2.4 Assumptions and Risks to Achieving the Outcomes

A key assumption is that Implementing Agencies, in their regular work programs, will assist countries to analyze the causes of biodiversity loss at the ecosystem level, which could include demographic and economic factors, and to identify and implement national plans that address such root causes.

Supplementing this baseline course of action, GEF can assist with additional actions to address driving forces or proximate causes of biodiversity loss and unsustainable use.

Although the project is not yet addressing driving process of biodiversity loss directly, it aims to identify the proximate causes of biodiversity loss and unsustainable use through joint research carried out by the [socioeconomics special study](#), the [technical special studies \(biodiversity, sedimentation, pollution and fishing practices\)](#) with the participation of resource users, resource managers and other stakeholders.

3.2.5 Project Outputs

Outputs of GEF projects and related activities affecting coastal, marine, and freshwater ecosystems should be monitorable. Examples include:

- a. **Threat removal.** Removal of the causes of biodiversity loss and the specific threats to the ecosystem arising in the surrounding productive landscape, e.g., through reduced discharges of domestic, industrial, and agricultural pollution;
- b. **Sectoral integration.** Well established and well-managed systems of coastal/marine, and freshwater conservation units with effective management plans; integrated land-use and sea-use which includes conservation units as part of the regional landscape/seascape; and integrated community development addressing livelihood issues of local and indigenous communities living in the buffer zone and areas of influence of conservation units;
- c. **Sustainable use.** Sustainable coastal, marine and freshwater management techniques in place; and,
- d. **Institutional strengthening.** Stronger institutions and well-trained staff to address these issues.

The LTBP is aimed primarily at sectoral integration and institutional strengthening (b & d). The rationale for this is that the means to remove current threats to biodiversity can only follow from the development of institutions with the capacity to identify these threats (including unsustainable use) and to act by implementing measures to counteract them. The implementation of projects to remove threats and to ensure sustainable resource use are thus addressed by the riparian country institutions, with future donor assistance if necessary.

3.2.6 GEF Activities

GEF can support investment, technical assistance, capacity building (institutional strengthening human resource development and information exchange), policy, public education, and targeted research. Through these means, GEF will help to finance the conservation of biodiversity and sustainable use.

Table 1 gives some examples of the ways in which these activities are addressed by LTBP. For a complete overview of project activities, see the [Project Inception Report](#)

Table 1. Example LTBP activities under each of the major GEF Operational Programme activity headings.

GEF Operational Programme activity	LTBP activity
investment	<ul style="list-style-type: none"> • Incremental cost funding of project activities • Laboratory and vessel refurbishment in Bujumbura, Uvira, Kigoma and Mpulungu
technical assistance	<ul style="list-style-type: none"> • Preparation of baseline reviews • Design and implementation of special studies • Preparation of strategic action programmes³
capacity building	<ul style="list-style-type: none"> • Technical, legal, institutional and management training workshops • Creation of National Working Groups • Support for establishment of Lake Basin Technical Advisory Committee • Support for establishment of Lake Basin Management Committee • Support for Village Environmental Committees • Project documentation, databases and website
policy	<ul style="list-style-type: none"> • Participation of all stakeholders in development of SAP • Review of environmental legislation among all four countries sharing Lake Tanganyika
public education	<ul style="list-style-type: none"> • Environmental education component - training, literature, village meetings etc., • Training needs assessment • Support to World Environment Day
targeted research	<p>e.g.</p> <ul style="list-style-type: none"> • impact of increased sedimentation on littoral biota • taxonomy and ecology of shrimps • development of biotic indices for water quality monitoring • determination of historical changes in sedimentation rates

³ The project has been developing a process known as 'Strategic Action Planning', while the GEF refers to 'Strategic Action Programmes' (both abbreviated as SAP). The GEF terminology should be adopted.

Typical conservation activities are:

- a. demarcating, gazetted, strengthening, expanding and consolidating systems of conservation areas particularly in critical habitats or representative systems of coastal, marine and freshwater conservation areas;
- b. assessing the impact of natural disturbances and the compound effect of anthropogenic stress;
- c. remedial actions in areas under threat; and,
- d. control of alien, invasive species.

Sustainable development activities aim to remove the threats to biodiversity and the causes of current biodiversity loss. Typical activities would be in the areas surrounding critical habitat, and require integration with sectoral plans. Typical examples are:

- a. integrated conservation and development projects around protected areas;
- b. participatory management of natural resources, and alternative livelihoods;
- c. tenure reform and land titling in the buffer zone in the coastal zone; marine environment, and freshwater systems around globally important protected areas;
- d. reduction in habitat fragmentation, encroachment, and pollution; and,
- e. establishment of long-term cost recovery mechanisms and financial incentives for sustainable use.

The project itself does not aim to implement programmes to carry out most of the above actions, only to assist the riparian countries in identifying which are needed and how to act upon them. The actions are likely to be funded by future government, NGO and donor programmes.

3.2.7 Inter-Agency Co-ordination

The activities would be coordinated with the past, ongoing and prospective work of the Implementing Agencies and others. These will include experience gained and lessons learned and dissemination of experience from the Pilot Phase activities; the experience of multilateral, bilateral private institutions, the international and national NGO community, and international, regional and national research centers and academic institutions.

- ⇒ *The project has signed memoranda of understanding or letters of agreement with a number of institutions involved in resource management, environmental assessment, management and research in the region*
- ⇒ *The special studies programmes have incorporated the experience of international and national research centres and academic institutions, such as universities and museums.*
- ⇒ *The training programme has been linked to [the Nyanza Lac project](#) run by the [University of Arizona](#).*
- ⇒ *The planning process has been informed by experience derived from similar activities in other GEF programmes, most notably in the [Black Sea](#)*

3.2.8 Land Degradation

Coastal, marine, and freshwater ecosystems suffer the impact, directly or indirectly, of land degradation. The GEF will support activities that demonstrate how to control land degradation effects on these ecosystems.

The LTBP will not be directly involved in projects that demonstrate soil conservation technology and other means of resolving land degradation problems. The extent of the problem in the Lake Tanganyika catchment is being identified by remote surveys carried out by the [GIS component](#) of the project, combined with rural appraisal of land degradation issues ([socioeconomic special study](#)) and the measurement of sediment discharge and flow in the principle affluent rivers ([sedimentation special study](#))

3.2.9 Public Involvement

It is one of the basic operational principles for the GEF that its projects will provide for consultation with, and participation as appropriate of, the beneficiaries and affected groups of people. The GEF Council approved a paper on *Public Involvement in GEF-financed Projects* defines the procedures for information dissemination, consultation and stakeholder participation, including the following: (a) that there should be emphasis on local participation and local stakeholders; and (b) that specific conditions in-country should be taken into consideration

Strategic partnerships will be sought, where possible, between all relevant stakeholders (e.g., government, NGOs, academia, the private sector, local communities and indigenous groups), each group collaborating based on comparative advantage. Projects to implement the Operational Program will clarify the conditions of cooperation and transparent mechanisms to ensure the active participation of relevant stakeholders in the planning, implementation and monitoring of project activities. Partnerships will be appropriate to local conditions and build on local expertise.

GEF projects have been criticised for lack of 'grass roots' participation (Edwards, R. & Kumar, S., 1998. 'Dust to Dust'. New Scientist, 6 June 1998, pp 18-19). The LTBP has concentrated to some extent on high-level management planning, and on building technical capacity for biodiversity and pollution assessment and management. It has also, however, attempted to ensure that the SAP process is informed by concerns at the community and 'local' level. Local interests have been represented at District Council level in the SAP.

In Zambia, the development (with project support) of village-based Environmental Committees provides a possible model for other countries. Participatory rural appraisals have identified some of the concerns of resource users, particularly fishers. Strategic partnerships have been developed with NGOs, principally environmental ones such as Wildlife Clubs. Private enterprise has been represented by commercial fishing and ornamental fish trades.

3.2.10 Resources

GEF resources will be used to meet the incremental costs of activities in this Operational Program. It is estimated that this program will require financial resources in the order of \$160-190 million over three years.

3.3 GEF Focal Area: International Waters

GEF operational program no. 8: Water body based operational program

3.3.1 Guidance

Guidance for this OP comes from the GEF Council in the Operational Strategy. Operational Programs in the International Waters (IW) focal area provide a planning framework for the design, implementation, and coordination of different sets of GEF IW projects that can achieve particular global environmental benefits.

In the Waterbody-Based OP, GEF will play a catalytic role in assisting a group of countries seeking to leverage co-financing in association with national funding, development financing, agency regular programs, and private sector action for necessary elements of a comprehensive approach for sustainably managing the international waters environment. The goal is to assist countries in making changes in the ways that human activities are conducted in different sectors so that the particular waterbody and its multi-country drainage basin can sustainably support the human activities. GEF helps countries to utilize the full range of technical, economic, financial, regulatory, and institutional measures that are necessary.

The LTBP covers the full range of measures above. The special studies address the technical measures required to sustain human activities while minimising trans-boundary threats. Financial measures are addressed by the project as a whole, regulatory issues are addressed through the [Legal and Institutional Component](#). Institutional measures are addressed at a number of levels, most significantly through the support of [National Working Groups](#) on Lake basin management, a regional [Technical Advisory Committee](#) and [Lake Basin Management Authority](#)

3.3.2 Programme Objectives

The long-term objective of the programme is to undertake a series of projects that involve helping groups of countries to work collaboratively with the support of implementing agencies in achieving changes in sectoral policies and activities so that transboundary environmental concerns degrading specific waterbodies can be resolved.

3.3.3 Characteristics of the Interventions

Assistance may be provided by GEF to accomplish the following:

- conduct a transboundary diagnostic analysis to identify priority transboundary environmental concerns;
- formulate a Strategic Action Programme (SAP) of actions each country needs to take to address the priority transboundary concerns (including differentiation of agreed expected baseline actions and those that would be additional in nature) and to leverage non-GEF resources for implementing both baseline and additional actions;
- support the incremental cost of technical assistance, capacity building, limited demonstrations, and certain investments needed to address the priority transboundary concerns; and,
- encourage the use of sound science and technological innovations for management.

The LTBP will be conducting a [transboundary diagnostic analysis](#) in November 1998. The TDA will be used by the riparian country National Working Groups to prepare [a strategic action programme](#), which will be used to leverage non-GEF resources for its implementation.

As previously detailed under the 'Biodiversity' Operation programme, the project has supported the costs of providing technical assistance and institutional capacity building. The special studies aim to ensure that management is based on sound science as far as possible.

3.3.4 Expected Outcomes

This paragraph is vital to understanding the integration of the different components of the LTBP:

IW projects normally require a long-term commitment on the part of governments, implementing agencies, donors, and GEF to leverage the intended sectoral changes - to address the root causes - of complex environmental problems in this focal area. Many GEF IW projects require political commitments on the part of neighboring countries to work together. It takes time to nurture the capacity to work together, establish factual priorities, and decide on joint commitments for action. Collaborative processes are fostered through a logical progression of GEF-funded activities -- from baseline reviews to analyses of transboundary priority environmental concerns to formulation of an IW Strategic Action Programme (SAP) to eventual regional capacity building or country-specific investment projects. The SAP is a key element for GEF because it will contain the agreed transboundary analyses for determining priorities and the array of expected baseline and additional actions needed for resolving each priority problem.

Outputs from individual IW projects include:

- a comprehensive transboundary environmental analysis identifying top priority multi-country environmental concerns;
- a strategic action programme (SAP) consisting of expected baseline and additional actions needed to resolve each transboundary concern;
- country commitments to implement expected baseline and additional actions;
- documentation of stakeholder participation in determining expected baseline and additional actions to be implemented;
- implementation of measures with incremental costs that help resolve the priority transboundary environmental concerns; and,
- monitoring and evaluation indicators related to the international waters project and subsequent actions following project completion (process indicators, stress reduction indicators, and environmental status indicators).

The key outputs the GEF expects from an IW project are being addressed by the LTBP. The transboundary diagnostic analysis and strategic action programme are the key processes and outputs of this project.

3.3.5 Types of Activities

This OP heavily relies on cooperation among Implementing Agencies as part of specific projects. These Implementing Agency commitments to action (including regular agency programs such as capacity building) and individual country commitments to baseline and additional specific actions are often contained in Strategic Action Programmes (SAPs) developed with GEF assistance.

Indicative activities for projects in each of the two components of this OP include:

Transboundary Freshwater Basin Component

A number of transboundary lake basins, river basins, and groundwater basins provide settings for application of the OP to projects in this component. Rather than addressing all the environmental problems in the basins of these waterbodies, GEF seeks focus on the top priority problems that are transboundary in nature so that sectoral policies and activities that create the problems are changed in the basin. Joint actions among nations and regional cooperative institutional arrangements are often key features of these projects. The projects run the range from capacity building and technical assistance to specific investments with

incremental costs. Demonstration projects are often included to test new or innovative interventions. Institutional elements such as water quality standards/regulations, permit processes, or water minimization/pollution requirements are harmonized among countries. Institutional arrangements such as commissions are often developed or strengthened to provide mechanisms for countries to sustain actions after the GEF projects end. The scientific community is often also involved in providing advice as part of the institutional arrangements.

Indicative Activities for Capacity Building or Investment Projects

- technical assistance for countries deciding how they jointly desire to work together with committee structures to collaborate more effectively;
- funding the communication infrastructure for committees and for stakeholder participation;
- advice and assistance in stakeholder/NGO participation design, conducting social assessments, etc.;
- limited demonstration projects to determine feasibility;
- feasibility studies;
- technical assistance and capacity building in how country inter-ministerial teams work, how they involve stakeholders and how they determine expected baseline and additional priority actions; and,
- advice and facilitation in formulation of the SAP.

Many of the above indicative activities have been addressed by the project, and are detailed in the previous section on the Biodiversity Operational Programme (from page 12).

GEF may fund the incremental cost of priority elements of the SAP that address the transboundary priorities. This funding could provide cost-shared incentives for leveraging government, private sector, or donor action in implementing priority solutions on the ground. Examples of indicative activities might include:

- a modest cost share in supporting establishment of an industrial toxins pretreatment program or physical interventions to separate easily treated municipal wastewater from more dangerous industrial wastewater;
- incremental cost funding for wetland restoration to provide habitats and to mitigate the effects of pollutants before they reach international waters;
- innovative approaches such as tradable pollution discharge permit systems or offset programs to cost-effectively improve water quality in shared basins;
- cost-share best management practice installation for non-point source control of land-based pollution in degraded, priority watersheds; and,
- building a human resources capability to strengthen institutions.

Most of the above indicative actions pertain to projects that aim to address identified threats. The LTBP aims only to strengthen the capacity of national and regional management institutions to identify these threats and prioritize actions to deal with them.

3.3.6 Interagency Coordination and Public Involvement

Formulation of Strategic Action Programmes (SAP) is the responsibility of the collaborating governments and national/regional stakeholders.

Stakeholder involvement and participation of different sectoral ministries in each recipient country constitute important elements of GEF activities concerning international waters.

Networking among stakeholders and government organizations can foster broad involvement in planning and implementing GEF international waters projects and should help to improve the quality, public awareness, and scientific basis of international waters projects.

'Ownership' of the SAP process by the collaborating governments and national/regional stakeholders has been continually stressed by the project's implementing agencies. The GEF requirements in this respect seem to have been fulfilled by the project. Networking among stakeholders is being facilitated, although a lack of understanding about the nature of the project and its aims and identity has been a continual concern. This document is one of a series of responses to those concerns. Others include the [Briefing Document on the SAP](#), and outline of [The Lake Tanganyika Programme and Evolving GEF Operational Strategies](#), both by N. Hodgson, the [Project Publicity Leaflet](#), the newsletter [Lakeside](#), and the project website.

3.3.7 Financial Resources

With a large number of highly damaged and threatened waterbodies worldwide, the coming 3-year period will be utilized to select good examples of projects in each of the two components of the OP. During the planning period, half the projects will be in an initial strategic stage while half will have been reviewed by Council and will have begun implementation. The modest estimate of financial resources needed for this OP is \$75 - 90 million for FY1998 - 2000 to accomplish objectives stated herein.

3.4 Summary

In summary, it will be noted that the GEF funding mechanism specifies the importance of legal frameworks for environmental management and the development of capable institutions to implement management, monitor environmental change and carry out appropriate technical and policy interventions when required.

Most scientists working in developed countries are accustomed to working in a system where frameworks, policies and institutional capabilities to manage the environment already exist. In such systems, there is a greater emphasis on strategic research and technical training in the confident expectation that recommendations by scientists will be acted upon by managers and policy-makers. In short, there exists the capability to make use of research findings and researchers don't need to involve themselves in mechanisms for implementation of their recommendations. This can lead to scientists taking these mechanisms for granted.

In a situation where it is not possible to implement policies for conservation or environmental management because these mechanisms do not exist, research is in danger of being irrelevant. There is a need to address the implementation mechanisms, as well as the research. It is for this reason that the GEF Lake Tanganyika project places such an emphasis on 'institution building'. Without this capacity to use science to make policy, scientific recommendations are relegated to plaintive pleas for action in the pages of research journals. Scientists need to have a more influential role than this. Without sound environmental policies and institutions that can act on their recommendations, their work is of interest only to other scientists, a waste of financial and human resources, and of no policy relevance.

In framing their recommendations, scientists must also be aware not only of what is desirable and what is possible, but also of the impact their proposals and recommendations may have on resource users and the human population of the region. Six years after Rio, we must remain aware of the need to link Environment with Development.

3.5 Further Information

The best sources of GEF documentation I have seen are on the web pages of the implementing agencies:

<http://www.undp.org/gef>
<http://www.gefweb.org/>
<http://www.unep.org/unep/gef/home.htm>
<http://www.worldbank.org/html/pic/GEF.html>

Most biologists will be familiar with the techniques of biodiversity assessment and will also have looked at much of the literature about biodiversity written by conservation biologists. They may not have come across alternative perspectives on these issues, however, and the following readings are given to complement the standard biology texts. Some of these readings may also be useful to conservation planners, resource managers, social scientists and environmental educators. We welcome suggestions for further texts to add to this list.

Adams, J. S. and T.O. McShane, 1992. *The Myth of Wild Africa*, WW Norton, New York and London.

Anderson, D. and R. Grove, 1987. *Conservation in Africa: People, Policies and Practice*. Cambridge University Press, Cambridge.

Budiansky, S. 1995. *Nature's keepers The New Science of Nature Management* Phoenix Grant ISBN 1-85799-454-X.

IIED, 1995. *Whose Eden? An overview of community approaches to wildlife management*. IIED London.

Western, D. and R.M. Wright (Eds), 1995. *Natural Connections: Perspectives in Community Based Conservation* Island Press, Washington DC.

Glowka L. et al, 1994. *A Guide to the Convention on Biological Diversity* IUCN Gland.

Gomez Pompa, A. and A. Kaus, 1992. Taming the Wilderness Myth *BioScience* 42.4: 271-279

Guyer, J. and P. Richards 1996. The Invention of Biodiversity: Social Perspectives on the Management of Biological Variety in Africa. *Africa* 66.1: 1-13.

Hannigan, J.A. 1995 *Environmental Sociology: A Social Constructionist Perspective*. Routledge: London.

Leakey, R. and R. Lewotin, 1995. *The Sixth Extinction : Biodiversity and its Survival*. Weidenfeld and Nicolson, London.

Meffe, G.K. and C.R. Carroll 1994. *Principles of Conservation Biology*. Sinauer Publishers, Sunderland, Mass.

Primack, R.B. 1993. *Essentials of Conservation Biology*. Sinaur Publishers.

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