

A SUBMISSION TO THE
GLOBAL ENVIRONMENT FACILITY (GEF)

Medium-Sized Grant Proposal

**Towards a Lake Basin Management Initiative
and in support of the Third World Water Forum:**

**Sharing Experiences and Early Lessons in GEF and non-GEF
Lake Basin Management Projects**

GEF Implementing Agency: World Bank
Executing Agency: International Lake Environment Committee
Foundation (ILEC)

July 10, 2002

MEDIUM-SIZED PROJECT BRIEF – PROJECT SUMMARY

PROJECT IDENTIFIERS	
1. Project name: Towards a Lake Management Initiative and in support of the Third World Water Forum: Sharing Experiences and Early Lessons in GEF and non-GEF Lake Basin Management Projects	2. GEF Implementing Agency: World Bank
3. Country or countries in which the project is being implemented: Global: GEF Recipient Countries	4. Country eligibility: Paragraph 9 (b) of GEF Instrument
5. GEF focal area(s): International and transboundary waters with relevance to biodiversity	6. Operational program/Short-term measure: OP# 10 – Global Support Component (Contaminant-Based)
7. Project linkage to national priorities, action plans, and programs: This project is linked to national priorities, action plans and programs at two levels. First, approximately half of the lake management efforts to be reviewed in this project are receiving GEF funding. For these lakes, the project will augment the linkages that have been identified and described in documentation on the GEF projects. Second, the outputs of the project are aimed globally, to include nations that have not yet elevated lake management to a national priority or developed lake action plans and management programs. For these countries, the experience briefs and lessons learned are intended to foster the development of lake action plans and programs.	
8. GEF national operational focal point and date of country endorsement: Not applicable	

PROJECT OBJECTIVES AND ACTIVITIES	
9. Project rationale and objectives: <i>Rationale:</i> The conservation and management of lakes and reservoirs must enter the mainstream of the economic development process through comprehensive water resources management. Actions to improve management of lake basin resources on a sustainable basis are necessary due to the high levels of direct and indirect pressure on lakes and reservoirs from large populations inhabiting lake watersheds, rapid population growth, urbanization, industrialization, mining development, growth of irrigated agriculture and impacts of climate change which are altering ecosystem processes and threatening the capacity of lakes and reservoirs to perform the requisite ecosystem functions and provide basic services for human needs. The conservation and management of lakes and reservoirs and their basins need to be strengthened and assisted by sharing and exchanging knowledge, experience and technologies and dissemination of lessons learned and best practices which would be reflected in policy and institutional reforms, and individual and programmatic lending operations supported by the GEF and the World Bank Group. <i>Objective:</i> The general objective is to strengthen capacity	Indicators: 1. Scope and scale of improved cross-sectoral integrated lake management. 2. Increased dissemination of lessons learned on lake basin management. 3. Consultative process involving global meetings and use of Internet Portal concluded with representation from lake management bodies. 4. Initial findings presented at the 3 rd World Water Forum and 5. Preliminary findings report produced presented at the 10 th World Lake Conference and to the Global Water Partnership (GWP) and finalized based upon inputs received.

<p>for improved lake and reservoir basin management at local, provincial, national and global levels. To achieve this, the project will assess and draw lessons from the achievements and implementation of several GEF and non-GEF projects and evaluate their design and implementation to assess their achievements and to draw lessons. Particular objectives will be to:</p> <ul style="list-style-type: none"> • Document experiences through case studies and thereby create new knowledge about lake management and facilitate the sharing of experiences between managers and stakeholders; • accelerate learning and implementation of effective lake and reservoir basin management; • improve the quality of lake and reservoir basin management.present initial findings to the 3rd World Water Forum • present preliminary findings report to the 10th World Lakes Conference. 	
<p>10. Project outcomes:</p> <ul style="list-style-type: none"> • Lessons for improving World Bank and GEF supported lake basin management projects, to be shared with the other IAs/EAs and their respective projects, and a list of recent accomplishments for World Bank and GEF use; • Improved integrated water resources management approach for managing lakes and reservoirs and support for implementation of the World Bank's Environment and Water Resources Sector strategies in GEF-recipient countries; • Improved understanding of the scale of management challenges for tropical, semi-arid, arid and temperate lakes and reservoirs and enhanced capacity for implementing and addressing the principles of sound lake management; • Improved sharing and dissemination of information on lake basin management programs for national and local governments, lake management practitioners, NGOs, and other stakeholders in lake basins; • Initial findings will be presented at 2003 World Water Forum; • Recommendations for a "Lake & Reservoir Basin Management Initiative"; • Case studies for the GWP's Toolbox on Integrated Water Resources Management; and • Identification of a roster of world-class lake management practitioners to support Bank/GEF operations. 	<p>Indicators:</p> <ul style="list-style-type: none"> • Project Steering Group and Project Secretariat established • Web-based, moderated discussion forum established • Draft and final report(s) produced • Pool of experts identified to inform debate at the 3rd World Water Forum. • Lake/Reservoir Basin Management Initiative established • Regional Workshops held • Case studies included in GWP's Toolbox – Integrated Water Resources Management (GWP IWRM Toolbox) • Training materials for WBI
<p>11. Project activities to achieve outcomes (including cost in US\$ or local currency of each activity):</p> <ol style="list-style-type: none"> 1. Development of an Implementation Framework (\$ 221,087) 2. Data Collection and Establishment of Electronic Forum and Clearinghouse (\$ 109,838) 3. Preparation of Experiences and Lessons Learned Briefs (\$ 538,000) 4. Regional Experience Sharing and Review Meetings (\$ 	<p>Indicators:</p> <ol style="list-style-type: none"> 1. Lessons learned reports published 2. Consultations and analysis of reviews undertaken 3. 4. Initial findings presented at the 3rd World Water Forum Final report published 5. Interactive process successfully concluded

992,950)	6. Final report to GEF submitted
5. Preparation of Consolidated Report (including translation) and Dissemination (\$ 239,975)	
6. Identification of Lake Management Experts (\$ 5,000)	
12. Estimated budget (in US \$):	
GEF:	\$ 965,744
World Bank Institute (WBI)	\$ 50,000
Bank Netherlands Water Partnership Program	\$ 150,000
ILEC/Shiga Prefecture	\$ 200,000
LakeNet	\$ 200,000
Government of Japan	\$ 646,449
TOTAL:	\$ 2,212,193
INFORMATION ON INSTITUTION SUBMITTING PROJECT BRIEF	
13. Information on project proposer:	
The International Lake Environment Committee Foundation (ILEC) ¹	
Contact Person:	Mr. M. Nakamura Director, Lake Biwa Research Institute, and Member of Scientific Committee, International Lake Environment Committee Foundation (ILEC) Address: 1091 Oroshimo-cho, Kusatsu, Shiga 525-0001 Japan Tel: +81-77-568-4567 Fax: +81-77-568-4568 E-mail: nakamura@lbri.go.jp
14. Information on proposed executing agency (if different from above):	
The executing agency is ILEC	
15. Date of initial submission of project concept:	
MARCH 12, 2002 (AND REVISED SUBMISSION ON JUNE 12, 2002)	
16. Project identification number:	
17. Implementing Agency contact person:	
Rafik Hirji Environment Department The World Bank Group 1818 H Street, N.W. Washington DC. 20433 Tel. 202 458 1994 E-mail: rhirji@worldbank.org	
18. Project Linkage to Implementing Agency Program(s):	
The World Bank, working with its partners, is committed to supporting efforts to better manage lakes and reservoirs and their basins, through promoting broad policy and institutional reforms, supporting technical assistance and capacity building, and improved project design and implementation. The Bank is also supporting measures to address the critical issues of lake and reservoir basin management through special programs such as the Global Water Partnership (GWP). Besides improving lakes and reservoir management, the initiative will also support the implementation of the Bank's recently approved Environment Strategy and the Water Resources Sector Strategy which is expected to be presented to the Board in 2002, as well as country policy dialogues and individual lending operations. Furthermore, the Bank is considering establishing a Lake Basin Management Initiative as part of the implementation of the Environment Strategy.	

¹ ILEC, an international Lake Conservation and Management NGO, which is guided by an international network of scientists (with 7 out of its 13 member Scientific Committee members from developing countries), will work in partnership with Lakenet and academic institutions and NGOs from developing countries. Lakenet is a network of 800 organizations and individuals in about 80 countries and is guided by a steering committee with 4 out of its 7 steering committee members from GEF recipient countries.

1. PROJECT DESCRIPTION

1.1 PROJECT RATIONALE

Lakes and reservoirs² are critical elements of the earth's freshwater hydrological system and must be managed as part of a larger ecosystem rather than as independent units. They contain most of the earth's surface stores of liquid fresh water. Lakes and reservoirs provide water for drinking, irrigation, industrial processes, mining operations, and power generation. They provide habitats for numerous species of fish, crustaceans, turtles, amphibians, birds, mammals, and water plants, many of which are important sources of protein and income for local inhabitants. Freshwater fisheries are important sources of export revenue, food and protein for local communities, and recreation in many countries. Lakes and reservoirs are important for controlling floods, retaining sediments, and recharging ground water. They are a source of recreation for swimming, boating, fishing, and quiet contemplation. Lakes are also important media for transportation in some regions. Finally, lakes and reservoirs provide, all too often, a major disposal site for domestic sewage, industrial wastewater, and cooling water from power stations. Because lakes are closed systems with longer retention period than rivers, pollutants tend to remain in the system over longer periods and the process of mixing and breaking down waste discharges is slower than in fast flowing rivers. Of the numerous ecosystems of the earth subject to severe anthropogenic influences, lakes and reservoirs are among the most vulnerable.

Increasingly, the ecological integrity of lakes and reservoirs has become threatened. In response, several strategic action plans have been developed to restore or maintain the ecological integrity of these water bodies. In the last decade, the Global Environment Facility (GEF) and the World Bank have provided extensive support for preparation of lake management programs and plans. Support has been provided for improving the management of a number of international and national lakes, e.g. Lake Chad, Lake Victoria, Lake Tanganyika, Lake Malawi, Caspian Sea, Lake Ohrid, Aral Sea, Lake Titicaca, and Lake Manzala. Many of the programs have drawn knowledge and experience gained from lake management programs in Europe and North America, e.g. Lake Washington, Great Lakes, Lake Geneva, Lake Constance, and other lakes. The GEF and Bank-supported lake management programs have begun to generate a wealth of new experience in environments that had not been studied well, and dissemination of lessons could guide ongoing and future development of similar programs in the same lakes as well as in other lakes and reservoirs. Within the scientific community, much work has been done to share scientific experiences, but little emphasis has been put on describing or sharing management techniques, policy reforms and institutional development, implementation, and governance experiences which are directly relevant to responsible government agencies and funding agencies, including international financial institutions. There is, therefore, a need to initiate a program to document, share and disseminate lessons learned from GEF and Bank-supported lake management programs to a broad community and, more specifically, to agencies responsible for preparation of management programs and action plans.

Global population is projected to increase by nearly 50 % over the next 25 years, from 6 billion today to 9.1 billion in 2025, with most of the increase occurring in developing countries. It will become an increasing challenge to provide fresh water to meet the needs of these people for drinking, growing food, and running factories and power plants. As rivers and ground waters become more and more utilized, the reliance on lakes to provide water for many services is likely to grow. Even though lake watersheds directly support huge human populations, policy makers have failed to grasp the significance and importance as well as vulnerabilities of lake resources. Major global forums on water, for example, have failed to underscore the importance of lake resources, to recognize their vulnerabilities or to address their related management

² In this proposal “lakes” refers to natural lakes and “reservoirs” to man-made lakes.

challenges. The global public debate on water issues has focused much attention on the management of river systems: the concepts and principles of river basin management receive wide exposure. More recently, the attention in global public debate is shifting to the management of ground water. The focus on lake management issues has yet to gain prominence. Properly managed, lakes and reservoirs can also provide crucial habitat for aquatic life, diverse recreational opportunities, and a refuge from urban stress. It is imperative that actions are taken now to prevent the further degradation and depletion of lakes and reservoirs upon which so many will depend.

In its Operation Program 10 (OP10), the GEF has emphasized that “the collection of global and regional projects that provide programmatic and strategic benefits for the global environment through technical support, assessment, and derivation of lessons learned across operational programs” should be undertaken to facilitate structured learning.

In 1996 the World Bank prepared a Technical Paper (No. 358) entitled “Integrated Lake and Reservoir Management: World Bank Approach and Experience.” The Bank is committed to supporting efforts to better manage lakes and reservoirs, through broad policy support, technical assistance, capacity building, and improved project design. The Bank is also supporting measures to address the critical issues of lake and reservoir basin management through special programs. To assure a consolidated and well-coordinated approach to this important issue, the Paper called for the establishment of a Lakes Management Initiative. The objective of this Initiative is to support a GEF-wide and Bank-wide creation and exchange of knowledge and experience in the management of lakes and reservoirs, which would be reflected in policies, best practices, programs and individual lending operations. This proposed GEF project will provide the basis for developing the Lakes Management Initiative.

The World Bank has issued an Environment Strategy and is elaborating a Water Resources Sector Strategy. Both strategies call for integrating environmental quality criteria in water resources planning and management and mainstreaming environmental considerations in water operations. This project will identify measures for effectively integrating lake and reservoir basin management issues into strategic and project planning as part of overall water resources management, supporting the implementation of the Environment and Water Resources Sector strategies. Projects supporting the integrated management of lakes provide a good basis for implementing the key principles laid out in both strategies. It is envisaged that the Bank, as part of the implementation of the two strategies, will design and develop a Lake and Reservoir Basin Management Initiative. Proper management of lakes and reservoirs is also an important recommendation of the World Commission on Dams (WCD). As a follow-up to the WCD Report, the Bank will consider including issues related to lake and reservoir basin management in the work program that is being prepared.

The main objective of the International Lake Environmental Committee Foundation (ILEC),³ the project’s executing agency, is to promote sustainable lake management, particularly in developing countries. ILEC has been engaged in studies for the protection and conservation of lakes in developing countries and in providing training courses for officials and engineers from developing countries both independently and in collaboration with the Japan International Cooperation Agency (JICA). ILEC collaborates extensively with other international partnerships such as the World Water Council and the Global Water Partnership.

ILEC will collaborate with LakeNet, a United States based NGO working on lake management and lake conservation issues. LakeNet is a network of more than 800 organizations and individuals in about 80

³ ILEC, an international Lake Conservation and Management NGO, which is guided by an international network of scientists (with 7 out of its 13 member Scientific Committee members from developing countries), will work in partnership with Lakenet and academic institutions and NGOs from developing countries.

countries,⁴ working on the conservation and management of lakes. The broad framework for ILEC-LakeNet collaboration was established in a July 10, 2001 Memorandum of Understanding between the two organizations.

The experience of ILEC and LakeNet is that lakes are a unique type of water body, with qualities that makes them strategic “points of entry” into integrated water resources management at the river basin level. The surface of lakes are flat, which places lakeshore residents on a “level playing field” that facilitates interaction among stakeholder groups in the watershed. On many lakes, a substantial portion of the catchment or tributary watershed is visible, and this also facilitates a sense of shared purpose among stakeholder groups throughout the catchment. Finally, nearly every temperate and tropical lake is a source of water for drinking, electricity generation, irrigation, and industry, making lakes a key focal point for water resources management. The combination of these hydro-geological and socio-economic factors lead to natural alliances between lake-based stakeholder groups and groups dealing with other aspects of the hydrological cycle. ILEC and LakeNet continuously seek and initiate coordination with other waterbody-specific initiatives. The organized participation of diverse stakeholders is described in Section 6.

Stakeholder participation in the project will be ensured through the active involvement of ILEC’s network of professionals and LakeNet’s network of lake management practitioners as well as the inclusion of GEF project-related stakeholders. ILEC collaborates with a range of environmental organizations, including international organizations, which have relevant information for this study.

1.2 PROJECT OBJECTIVES

The general objective is to strengthen capacity for improved lake and reservoir basin management at local, provincial, national and global levels. The project will assess and draw lessons from the achievements and implementation of several GEF and non-GEF projects. Particular objectives will be to:

- Document experience through case studies and thereby create new knowledge about lake management, and share this knowledge among water professionals in lake management and between managers and stakeholders;
- accelerate learning and implementation of effective lake and reservoir basin management; and
- present initial findings to the 3rd World Water Forum and
- report preliminary findings to the 10th World Lakes Conference.

The project is expected to contribute insights on how to manage lakes and reservoirs sustainably. In doing so, it will also strengthen the ability to:

- manage complex ecosystems sustainably; and,
- address critical policy, investment and other issues constraining effective and sustainable lake and reservoir basin management.

The project is also expected to contribute to:

- the dissemination of information from GEF and Bank projects;
- national efforts on integrated water resource management;
- the promotion of investment opportunities; and,
- the use of information technology to resolve management constraints.

⁴ Lakenet is guided by a steering committee with 4 out of its 7 steering committee members from GEF recipient countries.

The project follows the portfolio review of International Water Projects undertaken at the First Biannual GEF waters conference, Budapest, 2000. It represents the next phase in the review of GEF undertaken there.

2. CURRENT STATUS

Lakes and reservoirs contain over 90 percent of the world's liquid surface freshwater, and in many parts of the world are important sources of protein for export and local consumption. Consequently, lake catchments often harbor large populations. Lakes are not evenly distributed, nor are reservoirs. Many lakes and reservoirs are in high-income temperate countries of North America and Western Europe, but the services lakes and reservoir provide may be of greater significance in the countries of Eastern and Central Europe, and in the developing countries of Asia, Africa, the Middle East, and Latin America. Fresh water is becoming an increasingly limited resource in many of these countries. Characteristics of temperate, arid, semi-arid and tropical lakes differ significantly and management experiences from one type may not be readily nor fully be transferable directly to another type.

Until recently, population and economic growth have occurred without paying adequate attention to the management of lake and reservoir resources upon which economic development and human life depend. In many countries both the quality and quantity of fresh water available from lakes and reservoirs have declined significantly over the past 50 years as a result of increased demands of rapidly growing and urbanizing populations and increasing socio-economic needs. Lakes and reservoirs are under increasing stress and their ability to serve ecological or economic support functions is severely threatened.

Lakes and reservoirs are not static systems but are constantly changing through natural processes. Human activities can, however, rapidly accelerate these natural processes. The following are the key major man-made threats to lakes and reservoirs:

- ◆ *Water pollution.* Pollutants threatening lakes and reservoirs come from point and non-point sources, including sewerage systems, industrial plants, mines, and runoff as well as airborne particulates from farms and cities. Nutrients and organic matter from these sources accelerate eutrophication—a process which promotes plant growth, depletes dissolved oxygen and which may kill aquatic life and change ecosystems. Heavy metals, toxins, and chemicals contaminate sediments and bioaccumulate throughout the food-chain exposing humans to toxins that may cause diseases, cancer, or birth defects.
- ◆ *Water withdrawals and diversions.* Water withdrawals from lakes and reservoirs, water diversions from upstream dams, and lake reclamation for agriculture and aquaculture may significantly deplete the size of the water bodies, destroying habitat for plants and animals and sometimes causing high levels of salinization.
- ◆ *Disturbances in watersheds and shoreline reclamation.* Logging, land conversion, and other disturbances in watersheds may lead to siltation and sedimentation of lakes and reservoirs, and block the rivers and streams that feed them. This can diminish the flood-control capacity of lakes and reservoirs, shorten their lifetimes, destroy aquatic habitats, and reduce the productivity of their ecosystems. Destruction of shoreline wetlands also reduces the buffering capacity of the water bodies to contaminant inputs.
- ◆ *Introduction of exotic species and aquatic weeds.* Inappropriate fish farming and the introduction of exotic species may lead to loss of biodiversity or to a change in the ecosystem of the lake. In some instances, hundreds of native species have become extinct as a result of alien species. The proliferation of aquatic weeds is a growing problem in many tropical lakes and reservoirs: this has led to significant

deterioration of water quality, problems for fisheries, navigation, water supply and hydropower generation as well as major changes in ecosystems.

- ◆ *Overfishing*. Increasing human populations and the introduction of new fishing practices may lead to unsustainable fish harvesting and even the collapse of the fisheries.
- ◆ *Acidification*. Acid precipitation due to increased sulfur and nitrogen oxides from polluted emissions causes the acidification of lakes. This is a serious problem in Northern Europe and parts of North America and it is increasingly becoming a serious problem in Asia and other parts of developing countries.
- ◆ *Global climate change*. Global climate change is expected to alter precipitation and evaporation rates, water quality and lake levels, lake chemical budgets, and lake biodiversity.

Fragmentation of lake management institutions is a widespread problem. Few countries have established appropriate institutional mechanisms for integrated management of lakes and reservoirs and their basins. The management responsibility of lakes and reservoirs cuts across jurisdictional, administrative and national borders making it difficult to establish a sound management framework. Furthermore, active stakeholder involvement has been lacking in the establishment of many institutions responsible for lake and reservoir basin management. This is particularly challenging for international lakes, often because complex arrangements for sharing costs and benefits of management interventions are more difficult to define. Comprehensive lake and reservoir basin management strategies should include sound policy and institutional frameworks, effective organizational arrangements and clear and transparent procedures for resolving conflicts and inequities that may arise over resources allocation and management actions.

Managing lakes and reservoirs needs to be guided by a common long-term vision. For lakes to continue to provide benefits into the future requires a comprehensive management approach involving all stakeholders and covering all activities affecting the water resources throughout the watershed. To work effectively, management plans must be developed at the community level, involve the participation of all the groups who benefit directly and indirectly from the water bodies, and have clear and transparent procedures for resolving conflicts.

Formulating a strategy for managing lakes and reservoirs starts with defining a country's social, economic, and environmental objectives; evaluating the status of lake and reservoir resources; assessing the composition of projected demand for their services; and examining a country's existing policies for managing water resources in general and lakes and reservoirs in particular. The strategy needs to recognize that investments, policies, and regulations in one part of the watershed of the lake or reservoir or in one sector of the economy will affect persons and activities in other parts of the watershed and in other sectors. Thus decisions need to be guided by a broad strategy that takes a long-term view, anticipates the impacts on various users, and considers the ecosystems, economic activities, and social structures that exist in the watershed. The objective of formulating a lake and reservoir basin management strategy is to define measures to manage these water resources in accordance with adopted goals and policies on the basis of the entire ecosystem. The strategy for managing lakes and reservoirs should be incorporated into the broader national water resource management strategy.

Comprehensive strategies for managing lakes and reservoirs need to be designed for the unique physical and biological characteristics of the watershed, including the type of ecosystem, climate, and topography, and the socioeconomic conditions, including the population density and pressure on the resources, the economic and environmental objectives, and the legal, policy and institutional setting in which the waterbody is a part. Human activities affect the resources of the waterbodies and their watersheds. The effects follow watershed boundaries, not political boundaries. Thus, what people do in one political unit (country, municipality, or landowner), may affect those living in another political unit. Because the impacts cut across

political boundaries, what may be a wise use of the resource from the point of view of one political unit may not be from the point of view of another. The process can be complex, depending on the number and diversity of stakeholders, and the hydrological conditions of the lake or reservoir.

3. EXPECTED PROJECT OUTCOMES

The expected outcomes of the project are (see Annex I – Project Design Summary):

- ◆ Lessons for improving GEF and World Bank supported lake management projects and list of recent accomplishments for GEF and Bank use;
- ◆ Improved integrated water resources management approach for managing lakes and reservoirs in GEF-recipient countries and support for the implementation of the GEF International Waters strategy and the World Bank's Water Resources Sector Strategy and Environment Strategy;
- ◆ Improved understanding by lake management practitioners, through synthesized operational guidance drawn from management experience, of the scale of management challenges for tropical, arid, semi-arid and temperate lakes and reservoirs;
- ◆ enhanced capacity for implementing and addressing the principles of sustainable lake management;
- ◆ Improved capacity to document and disseminate information on lake management programs, among various lake management projects/programmes and to national and local governments, lake management practitioners, NGOs, and other stakeholders in lake basins;
- ◆ Presentation of initial findings to inform discussion at the 3rd World Water Forum to be held in Japan in March 2003 and preliminary findings at the 10th World Lake Conference to be held in the United States in May 2003;
- ◆ Case studies for the GWP IWRM Toolbox;
- ◆ Proposals for a World Bank initiative "Lake and Reservoir Basin Management Initiative"; and
- ◆ Identification of a roster of world-class lake and reservoir basin management practitioners to support Bank/GEF operations.

4. ACTIVITIES AND FINANCIAL INPUTS

Annex I gives an overview of the project design summary. In order to achieve the objectives, the following activities are planned:

Task I: Development of Implementation Framework.

The World Bank is the GEF implementing agency for this project. The International Lake Environment Committee (ILEC) Foundation will be the executing agency. ILEC will work in partnership with LakeNet and developing country NGOs and academic institutions and will work closely with the World Bank and other GEF-implementing agencies to execute the project.

The project will be guided by a Steering Committee (SC) that will comprise members from GEF, UNEP, UNDP, World Bank, WBI, and other representatives possibly including IUCN, IDEAL (International Decade for East African Lakes, Kenya), Zoological Institute of the Russian Academy of Sciences (Russia), International Institute of Ecology (Brazil) and academic institutions from developing countries. The World Bank will facilitate the establishment of the SC and organize and chair the first SC meeting. The role of the SC will be to finalize and approve the overall project design prepared by ILEC, to identify and endorse the GEF and non-GEF lakes for review, facilitate information access on GEF and World Bank, UNDP and UNEP supported lake projects, endorse selection of consultants to carry out studies, advise on the moderation of the web-based discussion, review draft documents and the final project document, and provide oversight and guidance to the executing agency. The two other GEF implementing agencies, UNDP and UNEP, are expected to facilitate access to information on GEF-lake management projects they have implemented.

The SC will be supported by a Project Management Team. The Project Management Team will include an ILEC appointed Project Manager and senior staff from ILEC and LakeNet. The Project Management Team will be supported by a Project Secretariat in ILEC. Guided by the Project Management Team, the Project Secretariat will prepare a detailed project implementation plan. This plan will detail the specific terms of reference for ILEC and LakeNet staff in the Project Management Team, including roles, responsibilities (including shared responsibilities), reporting arrangements and required outputs. It will also contain information on which projects are to be included in the study, terms of reference for consultants, draft outline for the project briefs, draft outline for the consolidated lessons learned report, suggested resource persons/consultants for reviewing each lake, a detailed schedule for the project, including workshop program and a monitoring and evaluation plan.

The first SC meeting will be held 1 month after commencement of the project to review and finalize the project design and launch the project. It is envisaged that the SC will meet three times during the implementation of the project.

Total cost: \$ 221,087

Task II: Data Collection and Establishment of Electronic Web-based Forum and Clearinghouse.

Upon approval of the project design, ILEC and LakeNet will initiate data and information collection. Under the guidance of the project management team, project staff will visit the World Bank and the other GEF implementing agencies to collect relevant information on each GEF-lake. Furthermore, the Project Secretariat will collect available information on the non-GEF lakes through literature search, use of existing databases, scientific journals, research institutions and other institutions (including governmental and non governmental organizations) as appropriate. The professional networks of ILEC and LakeNet are anticipated to contribute significantly to this process.

ILEC will contract LakeNet to moderate a special electronic forum and to manage a web-based clearinghouse of information on lake basin management. The special electronic forum and website clearinghouse will be closely linked to ILEC's website, the World Bank's Global Development Gateway and the 3rd World Water Forum's "Virtual Water Forum" and "Water Voice Messenger" initiatives. The special electronic forum will be a continuation of the "World Lakes Dialogue", a pilot phase of which was conducted during July-Oct 2001. The special electronic forum will make use of the existing Lake Net egroup to communicate globally with diverse stakeholders regarding general information about lake basin management as well as to invite input or announce opportunities for dialogue on specific aspects of the

project as needed. LakeNet and ILEC will establish and co-chair a session of the Virtual Water Forum on the topic of “Lessons Learned in Lake Management” and will use this outlet for global and/or regional web-based “public” dialogue related to the project.

LakeNet will enhance the www.worldlakes.org website with a searchable database of lake basin management topics that is open to all users with Internet access. A special section of the website will be devoted to the project and the ongoing “World Lakes Dialogue”. The www.worldlakes.org website will be enhanced with additional Active Server Pages databases to include and better integrate information on regulatory and statutory approaches, best practices and geo-referencing of as much information as possible.

LakeNet will work with the Project Management Team to develop a restricted access electronic forum and/or website for project management purposes to receive input during the project design phase, data and information collection phase, drafting phase and to review drafts of the various lake project briefs and the final report.

ILEC and LakeNet will use their existing membership base to identify a network of professionals and lake management projects as well as a network of professionals working on GEF/Bank-supported projects that will be invited to join the electronic forum. LakeNet will also play a key role in supporting ILEC in the design and implementation of the regional workshops to facilitate multi-stakeholder dialogue and ensure multi-stakeholder input. Efforts will be made to extend stakeholder participation and involvement beyond those with web access, by using web-to-email, web-to-fax technologies and standard postal services.

The initial data collection phase will be executed over a period of six months and the moderation of discussion on the draft report will continue for about 3 months, in total 9 months.

Total cost: \$ 109,838

Task III: Experiences and Lessons Learned Briefs

Consultants, endorsed by the SC and contracted by ILEC or LakeNet, will be engaged to facilitate the preparation of individual lake project briefs for each selected lake/reservoir. ILEC/LakeNet consultants supported by the SC will facilitate this process. The Lake Experience Briefs will contribute to meeting the primary objective of the study, which is to improve implementation of lake management projects.

There will be a lead consultant for each lake who will be responsible for the production of the lake brief. As needed, experts with relevant experience on the specific lakes will be contracted as sub-consultants to assist the lead consultants in the collection of relevant on-the-ground information for each lake.

The method for preparation of the experience briefs will emphasize multi-stakeholder meetings to ensure that the views and interests of all major stakeholder groups are accurately and fully recorded. At the same time, this method will provide an opportunity for stakeholders to review the status of the vision statement, the strategy or the implementation plan for their lake, if such documents exist. Therefore the primary role of the Consultants will be to facilitate communication among and from local stakeholders. A major consideration in selecting Consultants will be their demonstrated capacity to work with local stakeholders.

To the extent possible, local stakeholder meetings to develop the experience briefs will be conducted within the context of existing lake management institutions, with the objective of strengthening local management capacity, as a precursor to producing an experience brief.

The briefs will be posted on the electronic forum website to get discussions going among different project staffs to share experiences iteratively and elicit recent experiences, recent actions completed, and recent implemented strategies that are important for lake and reservoir basin management. The electronic forum will continue to be moderated to support this phase of analysis.

The electronic forum will be only one of several media for data collection. One-on-one interviews and regional workshops will also be used to gather information.

All lake management projects in the GEF portfolio will be included. In addition, a sample of non-GEF supported lakes and reservoirs will also be included. Some of these lakes are in non-GEF-recipient countries. Lakes and reservoirs from temperate, semi-arid, arid and tropical climates will be included.

Generally, published data on tropical, arid and semi-arid lakes is scarce since basic data either have not been collected or published or are insufficient to allow understanding of long-term trends. However, a significant amount of unpublished data exists in the form of project studies, documents and reports. Therefore, the management of tropical and semi-arid lakes would benefit from appropriate lessons learned from temperate lakes.

Each brief will define:

- the importance of the lake/reservoir,
- the key biophysical and socio-economic characteristics, and
- the principle environmental management challenges.

and will assess:

- the principles, approaches and methodologies used for addressing different environmental and sustainable development problems of the lake in question.

The brief will pay particular attention to assessing:

- the critical policy, legislative and institutional reforms adopted, and
- the investment, human resources and institutional capacity and other constraints on the environmentally sound management of the lakes.

The brief will also assess key issues of relevance to the GEF and the implementing agencies:

- approach to investments,
- capacity building efforts,
- stakeholder participation in the design and implementation of the programs,
- sustainability of the lake management institutions,
- linkage of the lake management programs to the broader national and regional water resources management reforms, and
- scientific quality of the program/project.

The resource requirements for the different projects will vary from project to project based on the stage of implementation. For some lakes the quality of existing information might need to be supplemented with additional data collection.

A typology of lakes and reservoirs and associated management problems will be developed to categorize the various lakes.

This phase will be executed over a period of 8 months. The electronic forum will continue to be moderated to support this phase of analysis.

Total cost: \$ 538,000

Table 1. Tentative List of Lakes and Reservoirs to be Included in the Study. The final list will be endorsed by the Steering Committee

GEF Lakes/Reservoirs		Non-GEF Lakes/Reservoirs	
Lake/Reservoir	Country	Lake/Reservoir	Country
<i>Africa</i>			
Victoria	Kenya, Tanzania, Uganda	Nakuru, Naivasha	Kenya
Chad	Cameroon, Central African Republic, Chad, Niger, Nigeria, Sudan		
Tanganyika	Burundi, Congo Tanzania, , Zambia	Kariba	Zambia, Zimbabwe
Malawi	Malawi, Mozambique, Tanzania		
Volta	Ghana		
Baringo	Kenya		
<i>Middle East and North Africa</i>			
Manzala	Egypt		
<i>Eastern Europe and Central Asia</i>			
Ohrd	Albania, Former Yugoslav Republic of Macedonia	Baikal	Russia
Caspian	Azerbaijan, Iran, Kazakhstan, Russia Turkmenistan,	Balaton	Hungary
Peipsi	Estonia, Russia		
Aral	Kazakhstan, Kyrgyz Republic, Tajikistan, Turkmenistan, Uzbekistan		
<i>South and East Asia</i>			
Tonle Sap	Cambodia	Chilika	India
		Biwa	Japan
		Dianchi Laguna de Bay Khanka/Xingkai Toba	China Philippines China, Russia Indonesia
<i>Latin America and Caribbean</i>			
Titicaca	Bolivia, Peru	Nicaragua	Nicaragua, Costa Rica
		Tucurui	Brazil
<i>North America and Western Europe</i>			
		Mono Champlain Great Lakes	USA USA, Canada USA, Canada
		Constance	Austria, Germany, Switzerland

Task IV: Regional Experience Sharing and Review Workshops.

Three regional Experience Sharing and Review Workshops will be held one in Africa, tentatively to be held in Arusha or Dar es Salaam, Tanzania (due to the fact that the country is riparian to three African great lakes—Victoria, Tanganyika and Malawi/Nyasa); one in Asia, tentatively to be held in the Philippines at Laguna de Bay; and one in Central, South or North America (venue to be finalized in the near future). The purpose of these workshops will be to increase local capacity for lake management by facilitating the

exchange of lessons learned and sharing of experiences as well as to solicit supporting information among professionals and stakeholders working on lake management issues. The workshops will also provide a multi-stakeholder forum for discussing and refining the draft project briefs.

The Regional Experience Sharing and Review Workshops will provide a unique opportunity for lake management practitioners and stakeholders (between 80-120 participants), especially from regions where access to Internet services is limited, to share lessons and experiences for improving the project briefs and the lessons learned report. The target audience for these regional review workshops will therefore be professionals and stakeholders actively engaged in lake management projects. The workshops will also include papers prepared by experts and stakeholders from and/or affiliated with various lake management programs.

Under the guidance of the Project Management Team, the Project Secretariat and local partners will be responsible for organizing and facilitating the Regional Experience Sharing and Review Workshops.

The regional review workshops in Africa and Asia will be held in early-February and early-March 2003, respectively, while the workshop in South/Central America will be held in September 2003. .

In addition to the three regional review workshops, the project will report to the 3rd World Water Forum and the 10th World Lakes Conference. The reporting format may take the form of panel discussion(s) or roundtables intended both to provide operational models and to motivate lake management practitioners to take actions to implement the successful practices.

Total cost: \$ 992,950

Task V: Preparation of Consolidated Report and Dissemination

The Project Management Team will prepare the final report of the project. Through the electronic forum, input to the final report will be solicited from stakeholders and lake managers involved in the various lake/reservoir management projects. The draft report will also be posted on a dedicated web site and feedback will be sought. The SC will review all comments received before it endorses the final report. To assist the SC's review process two independent reviewers will be engaged. The final report will be disseminated through ILEC, the World Bank and other GEF-implementing agencies and posted on various web sites. ILEC and LakeNet will use their normal channels of dissemination of information to inform a wider audience about the outcome of the project. ILEC's scientific journal, *Lakes and Reservoirs: Research and Management*, will be an important vehicle for dissemination of project related information. Furthermore, work in progress will be presented at the 3rd World Water Forum and the 10th World Lake Conference.

The draft final consolidated report will be prepared over a period of four months. The draft final report will be presented at the 3rd World Water Forum and the 10th World Lake Conference. Comments obtained will be used to finalize the report. The final report will be translated into French, Spanish and Japanese for broader dissemination.

Total cost: \$ 239,975 (inclusive of translation into 3 languages)

Task VI: Identification of Lake Management Experts

The Project Management Team will identify a roster of qualified lake management experts who could support the planning and implementation of future GEF/World Bank lake management projects. Efforts will

be made to ensure diversity of experience and technical background as well as regional backgrounds, in identifying mid-level technical experts and senior advisors.

Total cost: \$5,000

Task VII: Contingency

A 5 % contingency is provided.

Total cost: \$ 105,343

5. SUSTAINABILITY ANALYSIS AND RISK ASSESSMENT

Current lake management practices in both developed and developing countries are inadequate and unsustainable. Water is a limited and vulnerable resource. Degradation of the resource base is increasing water scarcity and threatening the functioning of important ecosystems. Aquatic ecosystems and aquatic biodiversity, particularly in lakes, are increasingly under threat from competing uses of water, discharges of waste, poor land-use practices, introduction of alien species and climate change.

This project will address issues of sustainability at four distinct levels: within each lake basin; within ILEC and LakeNet; within the GEF, its Implementing Agencies, and other United Nations and multilateral institutions; and globally, in the context of ongoing discussions about freshwater.

Within each lake basin in the project, the aim of the project activities is to improve management. This will be accomplished through the multi-stakeholder meetings that will be the primary method for compiling information for the individual case studies. These meetings will offer an opportunity to identify practical measures to continue and intensify dialogue, to develop or refine a vision for the lake, and to develop and monitor a strategic action plan. Improved management at the lake basin level will also be promoted through sharing of experience from other comparable lake basins. There is now a substantial body of evidence that such experience-sharing can reduce by years the time required to identify optimal solutions.

The contributions of ILEC and LakeNet to the sustainability of project outputs is found in the fact that both are independent international organizations that are governed and funded by diverse sources and with charters in perpetuity. The ongoing activities of both organizations are entirely consistent with those to be undertaken under this project, and both organizations are committed to continuing their work throughout the foreseeable future, long after the project is completed.

For the GEF, its Implementing Agencies, and other United Nations and multilateral institutions, the sustainability of this project will depend on the extent to which it makes a persuasive case that lakes are unique elements of hydrological systems. This would influence the GEF to continue funding projects that would improve lake management and would influence the World Bank to initiate the Lakes Management Initiative it identified in 1996.

Finally, at the global level, the sustainability of the project will depend on the extent of its impact on events such as the 3rd World Water Forum, the International Year of Freshwater, where past experience suggests that lakes will scarcely appear on the agenda unless there is compelling evidence that they are strategically and tactically important in the long process of achieving integrated water resources management.

On-the-ground creation of knowledge and sharing and dissemination of experiences, lessons learned, best practices and recent accomplishments would assist in improving lake and reservoir basin management in

GEF-recipient countries. Without such exchange, the process of integrating management of lakes into water resources management will be slow and costly, and may result in re-inventing the wheel and precipitate social, economic, and environmental insecurity. More information is needed to learn about the conditions in important lakes and reservoirs in developing countries, and how these are changing over time to improve their management. Applied monitoring efforts need to focus on collecting basic data on water and environmental quality, hydrology, and hydrogeology to inform decision-making. Monitoring is also needed to understand the linkages between lakes and reservoirs and the larger freshwater systems of which they are a part. Knowledge of the inter-relationships between land use, watershed management practices, and impacts on lakes and reservoirs is especially important to guide decision-making regarding future use of land and lake resources. Studies on the potential role of water markets in developing countries in encouraging the more efficient use of water resources from lakes and reservoirs, particularly in basins where significant water use is taking place from rivers feeding into lakes, would also be very useful for developing management options. Long-term management of lakes and reservoirs in poorly resourced countries requires innovative, low-cost technical, financial, institutional, and policy approaches that balance the needs of multiple users, reduces pollution, encourages water conservation, and improves the management of aquatic ecosystems and resources. Finally, it is important that information on successful practices and proven technologies is properly detailed and widely disseminated.

Technical assistance to help countries to build capacity and to strengthen their institutions will improve the chances of better environmental performance. Better education, training, and dissemination of best lake and reservoir basin management practices would contribute to building stronger institutions. Particularly helpful would be technical assistance to help countries develop and implement legal, policy, and regulatory frameworks for better environmental management; improve countries' operational capacities to monitor water quality and water use; develop mechanisms for coordinating agencies across sectors and jurisdictions; formulate ways to foster participation by stakeholders in managing lakes and reservoir resources; facilitate regional planning; and prepare and implement projects. Training is needed to develop human resources and strengthen managerial systems. Skills that are needed include technical skills (e.g. fisheries specialists, hydrologists, limnologists, and toxicologists), managerial skills, including skills in financial analysis and project management, and cross-disciplinary skills (e.g. ecologists). Management of international lakes requires additional skills; this area requires a special staff profile that includes an ability to look into the future, a skill for diplomacy, geopolitical knowledge, familiarity with legal, policy, and technical aspects, an ability to work with others, and patience.

A key risk associated with the project is the availability and accessibility of information. Several lake projects to be included are under implementation and information on project status is not readily accessible except by project staff. To ensure timely availability of information, the World Bank will assign a staff member to facilitate the sharing of information from World Bank-implemented projects with the Project Management Team. The assistance from the GEF-Secretariat will be essential to ensure that all relevant information is being provided from the other GEF-implementing agencies. As already mentioned, the World Bank is considering establishing a "Lake/Reservoir Management Initiative." This project will recommend the main elements for such an initiative, thereby ensuring the sustainability of the project.

Both ILEC and LakeNet are strongly committed to continue to expand and support global information-sharing about lake management after this project ends. Both organizations are implementing strategic business plans that emphasize continued organizational growth over the next two decades; mastery of emerging information technologies; and delivery of excellent service.

The project will draw heavily from the experience and capacity of the executing agency. ILEC has been in operation since 1986 and has a Scientific Committee comprised of world-class professionals, who guide its

work. ILEC also has a longstanding relationship with UNEP (United Nations Environment Programme). ILEC receives considerable support from various Japanese Government agencies. ILEC has proven capacity, capability and professional standing, and considerable experience in implementing projects funded by international organizations.

The networks of ILEC and LakeNet will be given access to all outputs of the project and this will strengthen their efforts in disseminating information on lake management. The sustainability of the outcome of this project will be ensured by the active dissemination of project- relevant information through these networks.

The World Bank will actively support the project and facilitate information sharing with the executing agencies and ensure that the outcomes of the project will be communicated to the various Task Team Leaders in the Bank to improve future lake management projects. If the project identifies major policy obstacles to sound lake management in the various countries, the Bank will address these issues in the ongoing policy dialogues, and through the implementation of the Environment and Water Resources Sector Strategies. Sensitive project information such as unresolved policy issues will be treated carefully and will be cleared by the Bank before being released publicly.

6. STAKEHOLDER INVOLVEMENT AND SOCIAL ASSESSMENT

Successful integrated water resources management depends largely on the extent to which stakeholders have been engaged and empowered to participate in the process of designing sustainable solutions to complex challenges. For lake and reservoir basin management plans to work effectively, they must be developed at the community-level, have the support of all levels of government and involve the participation of all the groups who benefit directly and indirectly from lake resources. Stakeholders in lake and reservoir resources may include fishermen, farmers, recreational users, water and energy utilities, municipalities and consumers, and the public as a whole. Involving these stakeholders in the electronic forum and at the Regional Experience Sharing and Review Workshops will help elicit a wide variety of views, and in addition, it will:

- ◆ foster commitment to the process and outcomes of the project;
- ◆ ensure that the project briefs are prepared transparently and with accountability; and,
- ◆ enhance creativity. Stakeholders can often provide a range of information that would improve the project briefs and provide alternative views to the “official” view of the implementing and executing agencies.

Stakeholder participation in the project will be ensured through the active involvement of ILEC’s network of professionals and LakeNet’s network of lake management practitioners as well as the inclusion of GEF project-related stakeholders. ILEC collaborates with a range of environmental organizations, including international organizations, which have relevant information for this study. Examples are: National environmental organizations: Ministry of Environment (Japan), Ministry of Foreign Affairs (Japan), National Institute for Environmental Studies (Japan), Lake Biwa Research Institute (Shiga Prefectural Government, Japan), UNEP International Environmental Technology Centre, International Center for the Environmental Management of Enclosed Coastal Seas; international organizations: United Nations Environment Programme (UNEP), United Nations Development Programme (UNDP), Food and Agriculture Organization of the United Nations (FAO); international financing institutions: World Bank, Asian Development Bank, African Development Bank, Inter-American Development Bank; environmental convention secretariats: Ramsar Convention, Convention on Wetlands of International Importance

Especially as Waterfowl Habitat, Convention on Biological Diversity, UN Framework Convention on Climate Change, Vienna Convention for the Protection of the Ozone Layer, and UN Convention to Combat Desertification.

ILEC's main objective is to support lake conservation, particularly in developing countries. ILEC has been engaged in studies for the protection and conservation of lakes in developing countries and in providing training courses for officials and engineers from developing countries both independently and in collaboration with the Japan International Cooperation Agency (JICA). ILEC collaborates extensively with other international partnerships such as the World Water Council, Global Water Partnership, International Commission on Large Dams, International Commission on Irrigation and Drainage, International Water Association, International Association of Hydrological Sciences, International Association for Hydraulic Research, United Nations University International Network for Water, Environment and Health, and Living Lakes. Information on the project will be provided to and solicited from these and other relevant organizations.

LakeNet is global network of people and organizations interested in the conservation and sustainable management of lakes. The network was established in 1997 among a group of lake management practitioners involved in lake exchange programs. A Secretariat was established in 1998 and the first international gathering of the network occurred in Copenhagen at the Lake99 conference in May 1999. A committee of founding members agreed to serve in an advisory role to the Secretariat until such a time as a more formal structure was needed.

LakeNet has grown rapidly since its founding – it now has more than 800 members and serves people and organizations in more than 80 countries. The network has also undertaken several important initiatives at the global level, including one to conserve lake biodiversity and another to document lessons learned in lake management, in collaboration with the International Lake Environment Committee (ILEC).

Network Goals and Guiding Principles. The activities of the network are guided by the following goals and principles:

- Promote and demonstrate sustainable lake management techniques using an integrated, watershed-based approach that **involves all stakeholders** ;
- Share watershed management knowledge, experience and practices;
- Strengthen institutional capacity to manage lakes on the scale of a watershed, considering the experience in other parts of the world; and
- Elevate the status of lakes in international, national, regional, local policy discussions.

Partners. LakeNet partners are organizations that share the goals and guiding principles of the network and are actively cooperating to support network activities. The nature and terms of the partnership are defined in a written agreement signed by the Secretariat and the partner organization, usually in the form of a Memorandum of Agreement. The designation of “Strategic Partner” is reserved for those organizations that the LakeNet Secretariat is cooperating with at an international or global level. For example, LakeNet formalized a strategic partnership with ILEC when both parties signed a Memorandum of Understanding in 2001.

Members. LakeNet membership is free and open to all individuals and organizations interested in the conservation and sustainable management of lakes. Members of the network reflect a diversity of interests, backgrounds and geographic distribution. Network members include international and inter-governmental organizations; national, provincial and local governments; parastatal enterprises; private

businesses; universities and research organizations; NGOs and CBOs, and individual citizen activists. Organizations and individuals become LakeNet members by subscribing to the LakeNet electronic forum and/or by completing a membership form. Some members do not subscribe to the electronic forum, either because they do not wish to participate in this aspect of the network or because they do not have email access. In the latter case, members are given the option of receiving communications via fax or regular mail. If any member of the network abuses the rights and privileges of their membership, including but not limited to the misuse of the electronic forum, the Secretariat reserves the right to deny or cancel membership at any time.

Steering Committee. As an international, multi-stakeholder body, LakeNet is governed by a seven-person Steering Committee comprising five Regional Coordinators who serve as representatives of lake-related organizations, an international expert, and a representative of the Secretariat. The Regional Coordinators are selected from among LakeNet Partner organizations to coordinate activities of the network in their regions, as needed. Regional Coordinators represent the following geographic regions: Africa; Asia; Central & South America; Europe & Central Asia; and North America. A majority (four out of seven) of the members of the LakeNet Steering Committee represent GEF-recipient regions.

Members of the Steering Committee are initially appointed for staggered two- and three- year terms. Subsequent appointments will be made in accordance with Rules and Procedures adopted by the Steering Committee.

Advisory Committee. In consultation with the Secretariat, an Advisory Committee has been appointed, selected from among LakeNet's members and partners, to serve in an advisory capacity to the Secretariat and the Steering Committee.

Scientific and Technical Advisors. A panel of international experts has been appointed to provide advice on specific issues, upon request, to the Secretariat and to members. Generally, the Scientific & Technical Advisors are not compensated as such, unless funding is available.

Secretariat. The network is supported by a Secretariat at Monitor International, a nonprofit organization based in Annapolis, Maryland. The Secretariat provides staff to coordinate ongoing activities and special projects of the network, to the extent that funds are available for such activities. Current activities include:

- Moderate an online forum for sharing of information and experience in lake management;
- Publish LakeNet News an on-line newsletter with news and announcements from members and partners;
- Host a website to serve as an online clearinghouse of information about sustainable lake management and links to other relevant websites;
- Participate in and co-sponsor international conferences, workshops and technical training programs;
- Advise international bodies about the conservation and sustainable development of lakes;
- Link together people and organizations involved in lake exchange programs; and
- Facilitate the creation of partnerships and sister lake relationships to exchange lake and watershed management experience, technologies and practices.

Funding. The Secretariat takes the lead in securing funding for coordination of the network. The Secretariat, Steering Committee and Advisory Committee members and Partners secure funding jointly and independently for the network as a whole, for special projects, and for activities at the regional and national levels.

Cooperation. LakeNet is a member of the Council of the Inter-American Water Resources Network and cooperates actively with the International Joint Commission (IJC); the Great Lakes Commission (GLC); and the Great Lakes Information Network (GLIN) and is an institutional member of the International Water Resources Association (IWRA), the North American Lake Management Society (NALMS), and the International Association for Great Lakes Research (IAGLR). LakeNet also collaborates with the UN Economic Commission for Europe secretariat to the Convention on Transboundary Watercourses and International Lakes, the World Water Council (WWC), the International Network of Basin Organizations (INBO); Living Lakes; the Ramsar Bureau; and Wetlands International. Through its Secretariat, LakeNet is accredited as an NGO with ECOSOC; with UNEP; the Convention on Biological Diversity (CBD); Convention to Combat Desertification (CCD); Global Environmental Monitoring System (GEMS/Water); GRID and the GEF.

LakeNet's strategic partnership with the International Lake Environment Committee (ILEC) is described in a Memorandum of Agreement dated 12 July 2001, through which the Chairman of the ILEC Scientific Committee serves as an *ex officio* member of the LakeNet Steering Committee.

Effective use will be made of the website and moderated electronic discussion forum to solicit further information, recommendations, comments and concerns. ILEC and LakeNet will employ their networks of members and affiliated organizations (in consultations with Bank/UNDP/UNEP/GEF Task Managers to broaden their networks) to advertise the discussion group and the Regional Experience Sharing and Review Workshops and ensure that they attract the needed participation. The electronic discussion group will be moderated by LakeNet, facilitating a broad and extensive dialogue with lake management professionals and stakeholders.

Additionally, the Project Management Team will utilize every venue, meeting and opportunity (e.g. the World Lake Vision process and other lake forums) to broaden the dialogue on lake management and incorporate relevant information from other agencies on related cases. Results of initial work and reports will be presented to the 3rd World Water Forum in Kyoto and to the 10th World Lake Conference in the United States. The discussion will contribute to the completion of the final documents.

7. INCREMENTAL COST ASSESSMENT

This project both complements existing activities described in the section on the current situation (baseline course of action) and adds new activities (alternative course of action) to the baseline for achieving additional global environmental benefits. (See Table 2 for Incremental Cost Matrix).

Goals and Objectives

This project will strengthen and expand the ongoing experience sharing between managers and stakeholders on lake-related GEF and non-GEF projects. By collecting recent accomplishments and drawing early lessons, it will accelerate learning and implementation of best practices of lake management. The project is expected to contribute to a shift in the approaches to sustainable lake management. It will

strengthen the capacity for managing complex ecosystems by addressing critical policy, investment and capacity barriers toward the management of lake ecosystems.

Even though the Lakes Management Initiative goes far beyond consideration of isolated contaminant issues, the GEF Operation Program manual, chapter 10.8 – Expected Outcomes – states that the fourth component of the Operational Program represents.... *“the collection of global and regional projects that provide programmatic and strategic benefits for the global environment through technical support, assessment and derivation of lessons learned across operational programs in this focal area”*. This is elaborated further in Chapter 10.17, which describes directly and succinctly the importance of supporting this project:

“The complexity of International Waters projects raises technical questions about how and what contaminants to monitor, how to analyze complex sets of data, where to get help, how countries can institutionally work together, and how to involve the public in decision-making. Targeted regional or global capacity-building projects may be necessary to help increase awareness on how to jointly address these contaminant problems. Global projects in this component can help individual groups of countries to share experience with other areas around the globe and lessons can be derived from the experience. New computer simulation models, remote sensing tools, and information systems have been developed...that can help countries sort through complex decisions for dealing with root causes of transboundary environmental degradation. Targeted technical information sharing, capacity building, and training opportunities may also be appropriate. In addition, certain global projects of a strategic nature that assess contribution of contaminants to the environmental status of International Waters or that develop longer-range approaches may be programmed in this operational program.”

During implementation, the project will involve a wide range of stakeholders, and will achieve significant improvements in understanding of the complex issues surrounding environmental management of lakes and reservoirs. The project will have significant national benefits for GEF-recipient countries in addition to its regional and global benefits. The GEF instrument is explicitly designed to ensure public involvement and participation throughout the project identification, design and implementation process. In lake management projects this is an exceptionally important facet and the GEF instrument is therefore particularly well placed to facilitate this aspect in the program cycle.

Baseline Scenario

Several lake management projects are currently under implementation around the world. International organizations and NGOs, e.g. ILEC and LakeNet, are collecting and disseminating information on lessons learned and best practices available within a limited context. There are also a few scientific journals on lake and reservoir basin management. With the advent of the Internet, information sharing on lake management issues has become easier. However, this is limited mostly to the developed world while in developing countries access to Internet is limited and still a problem.

GEF has supported and is expected to continue supporting a range of lake management projects within the framework of its various Operational Programs, most notable OP8, OP9 and OP10. Through this support, the GEF and its implementing agencies have gained considerable experiences that are used internally to improve the planning and execution of similar projects. Information sharing has, however, not been very effective and new operations are not fully benefiting from experiences already gained.

Under the baseline scenario, countries, international organizations and NGOs, including ILEC and LakeNet, would continue their efforts at disseminating information on lake and reservoir basin management activities at a limited scale and reaching a limited audience. Given the coverage, putting a value to the ongoing baseline activities at national and international levels, is a difficult if not an impossible task.

Incremental Scenario

By providing additional resources, this project will substantially improve the basis for integrating policy and investment decisions in developing lake and reservoir basin management projects for the benefit of local communities living around lakes, authorities responsible for lake management in various countries, professional associations, NGOs, and international organizations supporting the implementation of lake management projects. The project will add significantly to the 'baseline' by expanding the efforts to accelerate and improve the implementation of lake and reservoir basin management projects. This work is additional to the ongoing efforts on lakes and reservoirs and will raise the global significance of the issues and produce information that will strengthen the implementation of GEF-supported lake and reservoir projects.

In the absence of GEF support, the preparation of a comprehensive review of global lake management practices would be limited and based on existing efforts alone. Such an effort would not enable inclusion of lakes representatives from GEF recipient countries and would result in an inadvertent bias towards issues of greater concern to developed countries. In addition, such an effort would not fully be able to capture the knowledge and experience gathered in the UNDP, UNEP and World Bank supported projects. Several issues of core concern to the GEF, such as the ability of countries to effectively address issues related to biodiversity, the imperative of addressing transboundary issues in lake management, and the critical issue of land and water interface, would not play as prominent and integral a role in such discussions. Finally, issues of key importance to the GEF regarding design and implementation of lake management projects in recipient countries would not receive adequate attention.

GEF has supported several lake management projects and there is reason to believe that some project staff could have participated in such an exercise without additional funds. Therefore, only a partial cost of the review meetings (about 70% of the participant costs) is considered incremental. The 3rd World Water Forum and the 10th World Lake Conference offer an important opportunity to evaluate and present the work that has been done and to launch the Lakes and Reservoir Basin Management Initiative. The GEF is playing an important role as a catalyst for action in this respect.

Table 2. Incremental Cost Matrix

Activities and benefits	Baseline	Total	Alternative	Total	Increment
I. Project Design and Management	Steering Committee		GEF grant to support Steering Committee	44,500	44,500
	Project Secretariat	117,212	GEF grant to increase staff at Secretariat	176,587	59,375
Sub-total		117,212		221,087	103,875
II. Data Collection and Electronic Forum	Establish forum and moderate discussion	61,088		61,088	
	Data collection		Data collection in GEF-recipient countries	48,750	48,750
Sub-total		49,200		109,838	48,750
III. Lessons Learned and Experiences	Summarize experiences from developed countries	425,500	Summarize experiences from recipient countries	638,000	212,500
Sub-total		325,500		538,000	212,500
IV. Regional Experience Sharing and Review Workshops	Participation from developed countries	339,735	Increase participation from recipient countries	892,950	553,215
Sub-total		439,735		992,950	553,215
V. Dissemination	Produce final document	159,975		159,975	0
	Report translated in 3 languages	80,000		80,000	
Sub-total		239,975		239,975	0
VI. Identification of Lake Experts		5,000	Experts from recipient countries	5,000	0
Sub-total		5,000		5,000	0
Total		1,188,511		2,106,850	918,340
Contingencies		57,938		105,343	47,404
TOTAL		1,246,449		2,212,193	965,744

8. PROJECT IMPLEMENTATION PLAN

Executing Agencies

The executing agency, ILEC, is an international environmental NGO established in February 1986 by the Environment Agency and the Ministry of Foreign Affairs of the Japanese Government. ILEC's objective is to promote sustainable management of lakes and reservoirs around the world. Its key activities are to collect and provide information on the environments and management of the lakes of the world; to promote research on the environmental management of lakes; to support developing countries in their efforts towards the sustainable management of lakes and for environmentally sound development planning of lake resources; to organize training on the environment and management of lakes; to support the United Nations Environment Programme (UNEP) for activities that contribute to the lake environment conservation in developing countries; and to promote exchange of information with governmental agencies, local organizations and research institutes in Japan and the world that are engaged in international cooperation for conservation of lake environments. Since 1992 ILEC has also been designated as a supporting organization to the newly established UNEP International Environmental Technology Centre (UNEP/IETC), particularly its Shiga Office which is dedicated to the transfer of freshwater management technology to developing countries and countries with economies in transition.

ILEC will incorporate LakeNet Secretariat staff in the Project Management Team and also extend its contract with LakeNet to continue to provide an electronic discussion forum and additional professional input to the project.

Project Implementation Arrangements

Steering Committee (SC). The World Bank will be responsible for establishing the Steering Committee (SC). The SC will be comprised of members from the GEF, UNEP, UNDP, the World Bank, World Bank Institute, and other representatives possibly including IUCN, IDEAL (International Decade for East African Lakes, Kenya), Zoological Institute of the Russian Academy of Sciences (Russia), and International Institute of Ecology (Brazil). The SC will advise on strategies and approaches for design and implementation of project activities and supervise the overall use of project funds and the use of contingencies.

Project Management Team (PMT). The project will be executed by ILEC and managed by a Project Management Team. The Project Management Team will be headed by an ILEC appointed Project Manager and senior staff from ILEC and LakeNet and guided by key members of the ILEC Scientific Committee and the LakeNet Advisory Committee.

Project Secretariat. The Project Management Team will establish a Project Secretariat within the ILEC offices in Shiga, Japan. The Secretariat will be staffed by P and G level staff, and two supporting staff. ILEC's Scientific Committee will provide oversight and guidance to the Project Secretariat. The Project Management Team will organize and hold the three regional review meetings. The Project Management Team will, furthermore, produce the final report of the project. LakeNet will facilitate and moderate the electronic forum.

Financial Management and Auditing. ILEC's institutional and financial management capacity is considered acceptable and systems in place are sufficient to ensure fiduciary responsibility for GEF funds. ILEC's management will ensure the financial processing of the project, including disbursements and keeping of the accounts for the review of independent auditors. Auditing will be done in accord with ILEC's auditing procedures that have been judged satisfactory to the Bank. The financial report and audit will be sent within three months of the date of the last expenditure.

Disbursement. GEF funds will be disbursed in four quarterly tranches to ILEC based on a detailed disbursement plan and performance triggers. Funds from co-financing institutions will be disbursed following procedural requirements of each co-financing institution. Co-financing from ILEC (from the Shiga Government and Japanese Government contributions) and LakeNet (from the US Government contribution) will support the staff resources from the two agencies and related project activities.

Procurement. LakeNet will be sub-contracted by ILEC to continue to manage the electronic discussion forum and to provide additional professional support, if needed. ILEC, through the PMT, will contract consultants to prepare lessons learned briefs for each lake and reservoir. It is envisaged that ILEC will to the extent possible, use professionals within its own and LakeNet's networks, e.g. the Scientific Committee and the Advisory Committee, as well as other credible professionals to prepare these reports. Criteria for selection of consultants will be determined at the start of the project by Project Management Team and endorsed by the SC.

Implementation Schedule:

The project will be implemented over a period of 18 months starting in August 2002, subject to approval of grant agreement, and ending in January 2004.

Figure 1. Project Schedule.

	2002/2003																	
	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J
I. Project Management: Establish Steering Committee Steering Committee Meetings Finalize project design																		
		*								*						*		
II. Establishment of Electronic Forum Moderate discussion																		
III. Lessons Learned and Experiences Summarize experiences																		
IV. Regional Review Meetings								*	*			*						
V. Preparation of Consolidated Report																		
VI. Identification of Lake Experts																		

9. PUBLIC INVOLVEMENT PLAN

The identification of lessons learned on the basis of shared experiences will be a widely consultative process. The principal vehicles are: (a) an electronic forum; and (b) three Regional Experience Sharing and Review Workshops attended by experts and stakeholders from a wide-range of lake management projects, both GEF and non-GEF projects. Work in progress will be presented at the three regional meetings and, possibly, at other relevant forums as appropriate. These consultations will be undertaken to refine the analysis of lessons learned and ensure its readiness as an input to the 3rd World Water Forum (March 2003), the 10th World Lake Conference (May 2003), and the International Year of Freshwater (January-December 2003).

Stakeholder Identification

ILEC and LakeNet have a broad and diverse membership base that will be used to identify stakeholders. Participants for the regional review meetings will be decided jointly by the executing and implementing agencies and the SC. The GEF implementing agencies will provide the Project Management Team with a list of key stakeholders involved in the various GEF-supported lake and reservoir projects.

Information Dissemination and Consultation

A web site dedicated to the exercise will be established and will be operated and moderated for the duration of the exercise out of the LakeNet office. The forum and the webpage will be linked to ILEC's website as well. In addition, LakeNet and ILEC will employ necessary personnel to manage all correspondence and communications including this website and to ensure that every opportunity is afforded to interested parties to take part in the development of the lessons learned. This will involve both broad advertising of the site and targeted communications with key NGOs and individuals.

ILEC and LakeNet will use their existing information dissemination vehicles to ensure that the results of the project are communicated to stakeholders to ensure that the project outcomes are met and to ensure transparency.

Selection of Regional Review Workshop Sites

A key reason for holding the regional workshops is to enhance information sharing in regions where access to the Internet and scientific journals is limited. It is therefore suggested to convene the three regional review meetings in Africa, Asia, and the Americas. The proposed locations are:

- In Africa it is proposed to convene the meeting in Arusha or Dar es Salaam, Tanzania, due to Tanzania's proximity to three large international lakes, availability of conference facilities, and accessibility.
- In Asia it is proposed to convene the meeting at Laguna de Bay close to Manila in the Philippines.
- In the Americas, the location of the meeting will be decided by the Steering Committee. Lake Titicaca (Bolivia/Peru) and Lake Champlain (United States/Canada) have volunteered to host the meeting to be held between May-July 2003.

10. MONITORING AND EVALUATION PLAN

The Project Management Team will prepare a monitoring and evaluation plan to monitor project objectives, outcomes, and activities using the LogFrame indicators presented in the project summary (Annex I). The monitoring and evaluation plan will address the following issues: (i) procedures for collecting and reporting data on performance indicators (presented in the LogFrame); (ii) schedule for the following planned reviews: mid-term review after 9 months and end-of-project evaluation within 3 months after completion of the final report; (iii) description of how monitoring and self-evaluation activities will involve project participants and stakeholders; (iv) resources that will be allocated to monitoring (included in project budget); and (v) how monitoring and evaluation results will be used in project management.

The Project Management Team will be responsible for constant monitoring and evaluation to determine the success of project administration. ILEC will submit a progress report addressing technical and financial issues quarterly. Project accounts will be monitored and evaluated during ILEC's regular financial audits by a certified accountant.

The Steering Committee will provide oversight of the implementation of the project and will review the review reports. Monitoring results and conclusions reached as a result of evaluation reports will be used to recommend and implement changes in project management and for future reference in the development of similar or related projects.