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PERFORMANCE AUDIT REPORT

MALAWI

**GEF/SADC LAKE MALAWI/NYASA BIODIVERSITY
CONSERVATION PROJECT**

GEF TF 28671 and CIDA TF 22676

June 28, 2001

*Sector and Thematic Evaluation Group
Operations Evaluation Department*

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Currency Equivalents (annual averages)

Currency Unit = Indian Rupees (Rs.)

Appraisal (1993) US\$1 = MWK 7.14

At Completion (2000) US\$1 = MWK 58.0

Abbreviations and Acronyms

CIDA	Canadian International Development Agency
DANIDA	Danish International Development Agency
DFID	Department for International Development (UK)
DNPW	Department of National Parks and Wildlife
FAO	Food and Agricultural Organization
FWI	Freshwater Institute (Canada)
GEF	Global Environment Facility
GOM	Government of Malawi
ICR	Implementation Completion Report
PAR	Performance Audit Report
PM	Project Manager
PS	Principal Secretary
RAG	Research Advisory Group
SADC	Southern African Development Community
SC	Steering Committee
TFA	Theatre for Africa
TCP	Technical Cooperation Programme
TOR	Terms of Reference
UNDP	United National Development Programme
WSM	Wildlife Society of Malawi

Fiscal Year

Government: April 1 – March 31

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June 28, 2001

MEMORANDUM TO THE EXECUTIVE DIRECTORS AND THE PRESIDENT

**SUBJECT: Performance Audit Report on Malawi
GEF/SADC Lake Malawi/Nyasa Biodiversity Conservation Project
(GEF TF 28671-MAI & CIDA TF 22676-MAI)**

Malawi's Lake Malawi/Nyasa Biodiversity Conservation Project, supported by a GEF Grant (TF 28671-MAI) of US\$5.0 million was approved in 1995. Subsequently, under separate agreement CIDA made a grant (TF 22676-MAI) of CD\$4.0 million. In addition, DFID provided assistance in kind by allowing use of their Malawian research facility and direct support to repair, operate, and maintain their fisheries research vessel. The bulk of the funding (63%) was used to pay expatriate consultants' fees and service contracts. At project closure in June 2000 after a one-year extension, total costs amounted to US\$7.6 million of which GEF financed US\$4.96 million and CIDA US\$2.64 million. DFID's contribution in kind was equivalent to £0.36 million.

The objective of the project was to assist Malawi, Tanzania, and Mozambique in creating the scientific, educational, and policy basis required to ensure conservation of the biological diversity and unique ecosystem of Lake Malawi/Nyasa and producing a Biodiversity Map and Management Plan for the lake. There were seven components covering four main areas: building riparians' fisheries research capacity; basic surveys of the lake, its fish stocks, and water quality; reviewing riparians' environmental legislation to identify needed improvements and making recommendations for harmonization; and producing strategic management plans for the lake and special areas in Malawi.

Malawi, as the Sector Coordinator for Inland Fisheries within the Southern Africa Development Community (SADC), took the lead in preparing and executing the project. Implementation arrangements were complex and spread over eight institutions. Weak horizontal linkages to the riparians' national environmental institutions jeopardized the potential synergy from collaborative research as did weak ownership by Tanzania and Mozambique. A lack of clarity in describing the management functions of the international Steering Committee and a failure to establish an effective Research Advisory Committee created friction that undermined achievement of some project components.

The resources and time required to bring the Malawian research facilities and the DFID research vessel to operational status were underestimated. Salary supplements were provided to local staff without reference to their implication for overall civil service equity. Project design did not appreciate that each riparian had different priorities, levels of interest, and capacity to contribute to the project. And directing GEF funding through Malawi led to disagreement over the distribution of resources and benefits among the riparians.

Notwithstanding the above problems, the capacity building and research program was substantially completed to high international standards. The research and survey work has provided the basis for a number of landmark publications relating to the ecology, biodiversity, limnology, and water quality studies of Lake Malawi/Nyasa—and more are under production. The way in which the training was conducted has given the riparians' researchers an entrée into the international environmental and biodiversity research fraternity which should be highly beneficial in the long term. Three Lake Malawi/Nyasa reference fish collections were established, one each in Malawi, Belgium,

and South Africa. During the extended phase of the project funded by CIDA, key environmental monitoring indicators were established. Conservation of the Lake's biodiversity is now seen in the context of national environmental management.

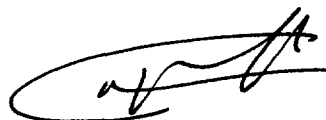
However, major weaknesses remain. There should have been more attention to training in natural resources management, and fisheries research staff are isolated from the mainstream environmental management institutions. Budgets are inadequate to maintain an active Lake research program and the DFID research vessel, while cessation of staff benefits provided from GEF funds reduce performance incentives. Piloting use of a touring drama group to promote environmental awareness in riparian countries is not sustainable without external funding, and awareness training may have targeted the wrong people, thus limiting its effectiveness. A high-quality strategic management plan for a selected area of Malawi was completed – but lack of implementation has caused enthusiastic stakeholders to lose interest. The Environmental Legislation component that was transferred to the FAO has yielded little to date, and is still ongoing. The scientific research and training agenda, which eventually cost more than twice the appraisal estimate, displaced forward-looking lake management planning: the Management Plan for Lake Malawi/Nyasa was not produced and the Biodiversity Map is only partially complete.

The OED audit downgrades the ICR rating of project outcome from satisfactory to moderately unsatisfactory. Institutional development impact is rated as modest compared with the ICR rating of substantial. Sustainability is downgraded from likely to unlikely. While the Bank agrees with the ICR that borrower performance was unsatisfactory, it downgrades Bank performance from satisfactory to unsatisfactory primarily because the problems created by deficient appraisal and initial poor supervision allowed the research agenda to dominate the project – at the expense of institutional development and mainstreaming.

There are five major findings:

- Establishing regional institutions for international waters projects requires very careful planning, extensive consultation, clear and unambiguous agreements, protocols on communication, and an effective umbrella organization to coordinate and synergize riparians' efforts. All this requires a high level of Bank effort and facilitation to avoid GEF projects becoming enclave activities of questionable operational value.
- Achievement of multi-country objectives is put at risk if only one partner receives and manages GEF project financing. It is probably better to support cross-boundary resource conservation through free-standing projects to individual countries and deal with the inter-regional coordination in parallel.
- GEF biodiversity and environmental projects require objective management and technical review to ensure continued focus on their development and operational goals—and thus avoid becoming hostage to increasingly demanding scientific agendas.
- GEF projects need to be strongly linked to all relevant national environmental and natural resource agencies to mainstream the development effort and leverage outputs.
- Partnership with bilateral development agencies (who have a comparative advantage in many areas) need to be carefully structured and based on shared objectives for which country ownership is assured if they are to significantly enhance the effectiveness of GEF projects.

Attachment



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This report was prepared by Mr. George Keith Pitman (Task Manager) who audited the projects in February 2001. Mr. William Hurlbut edited the report. Ms. Soon-Won Pak provided administrative support.

Preface

The Malawi Lake Malawi/Nyasa Biodiversity Conservation Project, supported by a GEF Grant (TF 28671-MAI) of US\$5.0 million was approved in 1995. Subsequently, under separate agreement CIDA made a grant (TF 22676-MAI) of CD\$4.0 million. In addition, DFID provided assistance in kind by allowing use of their Malawian research facility and direct support to repair, operate, and maintain their fisheries research vessel. The bulk of the funding (63%) was used to pay expatriate consultants' fees and service contracts. At project closure in June 2000 after a one-year extension, total costs amounted to US\$7.6 million of which GEF financed US\$4.96 million and CIDA US\$2.64 million. DFID's contribution in kind was equivalent to £0.36 million.

The PAR presents the findings of a mission by the Operations Evaluation Department (OED) that visited Malawi in February 2001. The findings are based on the Global Environmental Facility Project Documents, project files, field visits to the project, and discussion with officials of the Malawian government, respective government departments, officials and staff concerned with fisheries and environment, donors working in the fisheries sector as well as meetings with project beneficiaries, fisherfolk, and beach village communities. The author would particularly like to acknowledge the courtesy and facilitation of the Fisheries Department and its staff at Senga Bay and the helpfulness of the Bank task manager.

The Lake Malawi/Nyasa Biodiversity Conservation Project was audited for the following reasons:

- Trans-boundary and biodiversity resource management is a growing area for GEF involvement. As the design and organization of the subject project gave rise to some implementation problems it was expected that a number of lessons would emerge from a performance audit.
- A cluster audit with the Malawi Fisheries Development Project (MFDP) (Credit 22250-MAI) that also focused on Lake Malawi would allow a sector overview. The MFDP was completed at the same time and its objective to mitigate unsustainable levels of in-shore fishing complements the objectives of the Biodiversity Project. Yet, the Africa Region's Staff rated MFDP as unsatisfactory on most elements - in contrast to the Biodiversity Project – and the reasons for these differing outcomes need examination.

Following standard OED procedures, the draft PAR was sent to the borrower and development partners for comments before being finalized. Comments received are incorporated and included in Annex D.

Principal Ratings

	<i>ICR</i>	<i>ES</i>	<i>Audit</i>
Outcome	Satisfactory	Moderately Satisfactory	Moderately Unsatisfactory
Sustainability	Likely	Likely	Unlikely
Institutional Development	Substantial	Substantial	Modest
Borrower Performance	Unsatisfactory	Unsatisfactory	Unsatisfactory
Bank Performance	Satisfactory	Unsatisfactory	Unsatisfactory

Key Staff Responsible

	<i>Task Manager</i>	<i>Division Chief</i>	<i>Country Director</i>
Appraisal (Feb 1993)	Emmanuel Asibey	Chaim Helman	K. Marshall
Midterm (Jan 1998)	Francisco Pichon	Sushma Ganguly	Barbara Kafka
Completion (June 2000)	Francisco Pichon	Sushma Ganguly	Darius Mans

1. Background

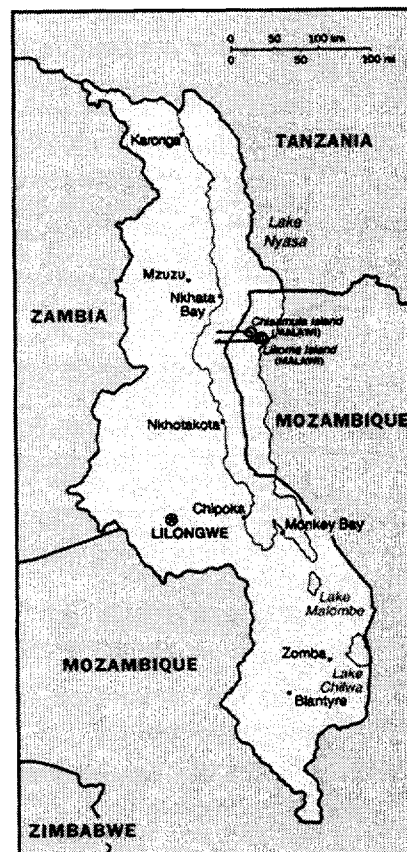
1.1 Lake Malawi/Nyasa, the fourth largest freshwater body in the world, is shared by Malawi and Mozambique and its northern end forms Malawi's border with Tanzania. The high and fairly rapidly growing populations in the riparian countries—particularly in Malawi, which occupies 80% of the shoreline—are steadily increasing human pressure on the region's limited natural resources. For the people on its shore, the lake provides abundant fresh water, fish production, and transport while for the riparian states it has large tourism potential. The lake is endowed with unique biodiversity and is estimated to contain 500–1,000 species of fish—the world's most diverse fish population in a single lake. Only about a third of these species have been fully described and new species are discovered regularly. Particularly noteworthy are about 400 species of near-shore mouth-breeding *cichlids* which are endemic to the lake. Many of these unique *cichlids* have localized distributions and are vulnerable to over-fishing, pollution, and the effects of longer-term degradation of the lake's watersheds induced by unsustainable land use practices.

1.2 **Objectives.** The project objective was to assist the three riparian states in creating the scientific, educational, and policy basis necessary for conserving the biological diversity of the lake and its unique ecosystem. Seven components were designed to achieve this objective (Box 1). As part of the capacity-building effort, research stations were to be rehabilitated at Metangula in Mozambique, Kyele in Tanzania, and the Senga Bay and Cape MacClear research stations in Malawi were to be upgraded. The most important outputs were to be a Biodiversity Map and Management Plan for the lake, a plan for ecologically compatible development of Malawi's Nankumba Peninsula and Lake Malawi National Park, and strengthened institutions, including recommendations for legislative changes to protect the lake's biodiversity.

1.3 **Implementation Arrangements.** These were complex and spread over eight institutions. Malawi, as the Sector Coordinator for Inland Fisheries within the Southern Africa Development Community (SADC), took the lead in preparing the project in collaboration with Mozambique and Tanzania. Malawi also managed the GEF grant agreement for this regional project on their behalf.

1.4 Government of Malawi (GOM) charged the Principal Secretary of Ministry of Forestry and Natural Resources (which is also responsible for the Fisheries Department) in his capacity as SADC Coordinator with managing the project guided by an advisory Steering Committee. The committee was chaired by the Malawian Principal Secretary and its membership was drawn in equal parts from the riparians' Fisheries and National Parks Departments, NGO/community representatives, and international expertise as needed. An internationally-recruited Project Manager was appointed to manage the project on a day-to-day basis and be guided by the Principal Secretary and the Steering Committee. A tripartite Research Advisory Group (RAG) comprising Chief Fisheries Officers and Chief National Parks and Wildlife Officers representing each riparian was to undertake periodic reviews and advise on research activities. An educational

Figure 1: Lake Malawi and its Riparians



and awareness component was to be managed by Malawi's Wildlife Society in cooperation with Malawi's Department of Parks and Wildlife.

Box 1: Project Components:

- Building scientific capacity within the riparian countries to survey, study, and monitor the lake's biodiversity, identify threats, and provide recommendations for the lake's management.
- Increasing conservation awareness among the lakeshore population and regional and national policy makers, whose decisions regarding regional development have an impact on the lake's ecosystem.
- Surveying and inventorying species, identifying critical habitats and biodiversity hotspots, and recommending preliminary measures to demarcate and protect such areas.
- Identifying pollution sources and measuring water quality at sites where human activities threaten biodiversity.
- Preparing a Strategic Plan for the Nankumba Peninsula and Lake Malawi National Park for eco-tourism development, consistent with the protection and conservation of the lake's biodiversity.
- Preparing a comprehensive Biodiversity Map and Management Plan for Lake Malawi/Nyasa based on the information provided by the species, habitat, and water quality analyses.
- Reviewing the adequacy of existing national environmental legislation in Malawi, Mozambique, and Tanzania and making appropriate legislative recommendations for revising and/or strengthening enforcement for conservation of the lake's biodiversity.

1.5 Five international organizations were also involved. DFID agreed to provide access to its project facilities and equipment at Malawi's Senga Bay Research Station and use of its fisheries research vessel R.S. *Usipa*. Malawi agreed to enter into a separate arrangement proposed by the Bank under which UNDP, through its country offices, would administer the design and contracting of the fisheries research stations at Matguela in Mozambique and Kyala in Tanzania. Shortly after negotiations, CIDA approved a grant of \$4.0 million (initially administered by them under a separate agreement) to enable a twinning arrangement by which researchers at the Freshwater Institute of the University of Manitoba worked with the project. After the first year, the environmental law component was subcontracted by the project to the regional FAO management. Half way through the project, the project manager facilitated a joint program, funded by DANIDA, on bilharzia research to supplement the scientific and educational thrusts of the project.

2. Implementation

2.1 **Overview.** The project was slow to start. Meeting the conditions of effectiveness—appointing a project manager, preparing a Project Implementation Plan, and forming the Steering Committee—delayed the project six months. Subsequent failure by GOM to hold regular meetings of the Steering Committee, whose role included clearing staff appointments and management plans, meant that key expatriate and local technical staff really only started to contribute to the research agenda 18 months later. Additionally, it was found that the research facilities at Senga Bay and the R.S. *Usipa* needed far more work to make them serviceable (mainly because of deferred maintenance) than was estimated at appraisal, and newly arrived scientific staff spent the initial few months on upgrading activities. These delays, changing priorities, and subcontracting some components jeopardized achievement of some objectives even though the project was extended by a year using CIDA funding.

2.2 To add to these initial difficulties, both the Bank and GOM changed managers several times in the first 18 months. In response to pressure from GOM, CIDA, DFID, and the project manager, the Bank designated in mid-1997 a staff member from the Malawi Country Office to attend Steering Committee meetings, and supervision frequency increased to twice a year. Project

oversight and guidance became more consistent primarily because of a highly motivated task manager who continued until the end of the project.

2.3 The agreement with UNDP to rehabilitate the fisheries research stations in Tanzania and Mozambique failed to deliver, and shortly after mid-term review the project manager reassumed responsibility for these constructions. By project closure, the Tanzanian station was completed and the audit mission was informed that work is nearing completion in Mozambique under Malawian management. As neither station was available to supplement research conducted from Malawi's Senga Bay during the life of the project, this posed an additional constraint on trilateral cooperation and the field research.

2.4 **Capacity Building.** The objective of this component was to ensure capacity in riparian countries to continue biodiversity surveys and monitoring beyond the life of the project. Capacity building focused on formal and informal on-the-job training in fisheries research and reached 32 staff selected equally from the riparians using mostly CIDA funding supplemented by South African research scholarships. On-the-job research training performed to expectations and two staff from each riparian were trained at Senga Bay Research Station.

2.5 Identifying and clearing the nine research staff selected for formal postgraduate training, and addressing language deficiencies of a few, meant that only three of the nine students were able to complete their training and contribute to the project before closure. Some of the research theses, when delivered, are expected to make a significant contribution to achievement of project objectives. On the whole, training was effectively carried out and, even though the number formally trained was relatively few, it significantly increased the riparians' technical capacity in fisheries research—but not fisheries management.

2.6 In a short-term move that is now having adverse long-term consequences for retaining the capacity built and for maintaining productivity, government representatives on the Steering Committee pressed for increases in salaries of counterpart scientific staff, even though their salaries were similar to government levels. Regrettably, the Bank accepted that this was necessary to attract high-caliber staff and agreed increases of 25–50% derived from expatriate account benefit savings and project contingency.¹ When external funding ceased, these staff reverted to their lower-level salary scale. This and a different basis for paying other country staff caused some resentment in Malawi.

2.7 The Wildlife Society of Malawi was supposed to sponsor two trainees to mainstream the environmental training program but could not find the money to do so. Eventually, CIDA funding was squeezed to allow the Environmental Educational Officer to be trained in South Africa and the project recruited a full-time expatriate Education Officer who designed and implemented the two six-month environmental training courses. At completion, 22 people selected by the riparian governments were trained in environmental education through two six-month courses held at Cape MacClear in Malawi (see para. 2.9). GOM staff interviewed at audit said that the people selected for the course came from inappropriate backgrounds given its general nature, and that courses were too fisheries-focused and not oriented to community needs. While some of those trained were reabsorbed into their organizations and communities, others took up positions unrelated to environmental/biodiversity conservation. Thus the environmental education component did not become the seed from which a larger program grew.

1. Government scales were \$800/month for Research Officers and \$400/month for Research Technicians. Under the project the Bank agreed that these salaries could be raised to \$1,000-1,200 for ROs and up to \$600 for RTs. Additionally, Malawian staff were paid in local currency while those from Mozambique and Tanzania had their salaries pegged to the dollar budget which appreciated significantly against the Malawian Kwacha over the life of the project.

2.8 **Building Conservation Awareness.** The intent of this component was “to use informal educational techniques to raise awareness and explain the need for new fishing regulations or techniques for conservation of the lake’s biodiversity.” Project staff in Malawi held a number of workshops and organized events that reached local area schools, wildlife clubs, villages, and community leaders. Posters and artwork produced by the project’s scientific artist made a major contribution to this outreach effort and the audit noted their large-scale distribution throughout Malawi.

2.9 The project also sponsored novel outreach activities using the Theatre for Africa in countries around the lake and the Wildlife Band in Malawi. When expected sponsorship by Wildlife Society for Malawi failed to materialize, Theatre for Africa was subcontracted by the project (at considerable expense) and trained 11 local actors from the riparian countries. By all accounts and follow-up surveys, these drama- and music-based outreach activities raised significant environmental awareness among a large number of people. How this awareness will be translated, if at all, to improved fisheries and hinterland management is unclear. In addition, it was independent of local drama groups, such as the one at Chancellor College. As with the other outreach activities it is not sustainable - it was a one-off event only feasible with the external support and funding provided from the project.

2.10 Apart from outreach, the project financed the rehabilitation of the Environmental Education Facility in the Lake Malawi National Park at Cape MacClear and housing for project staff but, as this is a fairly isolated spot, the facility catered primarily to the residents of the Nankumba Peninsula in Malawi. In early 1988, DANIDA was allowed to accommodate its bilharzia field program in project buildings at the site and it was still there at the time of the audit. Currently, the only active environmental education center is operated by Department of National Parks and Wildlife on an adjacent site. The outreach capacity-building efforts sponsored by the project and based in Malawi have not been sustained ex-post because of lack of direction and negligible financial support from either the other riparians or the Malawian Fisheries Department.

2.11 **Research: Survey and Inventory of Species.** For the first two years only a small boat donated by CIDA was available for survey work and this seriously limited what could be done. The R.S. *Usipa* only managed 6 sea-days in this period (compared with 200 planned) because of the poor condition of the vessel and its equipment. Once repaired, however, fieldwork accelerated in the last two years aided by three 8-meter twin-hull boats purchased by the projects and delivered in 1998. Meeting the operating costs of research vessels was a major headache even with the project, and ex-post the vessels are idle for lack of operating funds.² A major and unresolved problem is that both the Senga Bay research facilities and the R.S. *Usipa* remain in ownership of DFID because the U.K. government is unwilling to hand over these assets when there is still considerable doubt about the future use of the research facilities and the source and sufficiency of operation and maintenance funding.³

2.12 Despite the logistical difficulties, extensive survey work was accomplished and much of this has been written up by members of the GEF-financed resident research team and officially reported. Two international workshops were held by Malawi to disseminate findings in 1999, one sponsored by GEF, the other by DFID. A stream of more detailed and specialist scientific papers is under publication. The survey was undertaken in two phases occasioned by the project manager’s different opinion on research methodology after which the fisheries ecologist resigned and was replaced. The first survey included lake-wide fish distribution by depth, locality, and

2. During the project, the eleven berth RS *Usipa* cost about \$650 a day to operate - at audit this had risen to \$960 a day.

3. See Annex D for additional clarification and comments by DFID.

sediment type, and life history information such as breeding condition, size distribution, diet, and the genetic differentiation of stocks. A second phase focused on the ecology of 150–300 species of deep-water fish in an area at the southern end of the lake similar to that being trawled further east. In addition, several other donor-funded studies provided invaluable information.⁴ While both surveys yielded much new and valuable information vital to sound management of the lake, only that for the second and more limited survey was completed and written up.⁵

2.13 Once surveyed and sampled, the fish were systematically classified and about half of the species caught identified by the team of taxonomists based at Senga Bay. The large number of unidentified species were informally described and reference collections established for future research: one for each riparian country, and back-up collections were sent to the Africa Museum at Tervuren in Belgium, and the JLB Smith Institute of Ichthyology at Grahamstown, South Africa. The audit mission was informed that the extensive database from this work is available on CD and met recently-returned research graduates continuing the systematic classification and taxonomic studies. It appears the work has wound down at Senga Bay with the closure of the project and the focus of research has now shifted to the almost-complete Fisheries Research Department at Monkey Bay that was assisted by the sister Fisheries Development Project (Credit 22250-MAI), which closed at the same time.

2.14 The audit noted the generally poor condition of Malawi's reference collection stored at Monkey Bay. The array of differing (and sometimes inappropriate) storage and the number of partially or fully dried-out specimens gently decaying away paints a bleak future for this collection. It also indicates that the project was clearly overwhelmed by the large number of species, and that present funding is inadequate to maintain the collection.

2.15 **Research: Identifying Pollution Hazards and Threats.** Financed by the CIDA component and carried out by the Freshwater Institute (FWI) of Canada with support from two counterpart staff and graduate students, this research produced the first comprehensive survey of water quality of the lake and its source rivers. The reports clearly show that increased land use and nutrient inflow has adversely affected the lake's water quality, decreased water clarity and is in danger of causing a thinning of the oxygen and species-rich upper layers of the lake. The quality of inflowing river water is declining and rainfall water quality is affected by atmospheric pollution caused by deforestation and bush-burning. A GIS-based Water Quality/Physical Processes model for Lake Malawi was developed by the FWI team and is capable of generating predictions about the future states of Lake Malawi and confirming the causes of past changes. The large number of visiting scientists involved in this research, and several cooperating organizations, has raised the awareness of the fragility of the lake's ecosystem and the need for action to manage the watershed and land use practices.⁶ Most importantly, the research has produced a baseline that will enable evaluation of the success of lake management plans.

2.16 **Preparing a Strategic Plan for the Nankumba Peninsula and Lake Malawi National Park.** Originally scheduled for mid-1996, an excellent plan was produced at the end of the project after a rocky start—it remains to be implemented. A reason for this is that project design specified a highly participatory planning process without reference to the means, timing or

4. Genetic studies were carried out by the University of Hull (UK) and University of Montpellier II (France), a cooperative agreement with the DFID-funded Ncheni Project which examined two fish genera in detail, while DANIDA funded a Bilharzia study.

5. The first fisheries ecologist left without describing the protocols and access to the first-phase data base. Thus about 70% of the ecological data collected remains unanalyzed.

6. Cooperating organizations included the Canadian Centre for Earth Observation Science who used GIS to examine erosion hazards, sedimentation and biodiversity mapping in the watershed.

financing of implementation. Its objective is to ensure biodiversity conservation and economic growth, balancing the demands of tourist development and open-access natural resource use while taking into account community preferences. A major issue that had to be resolved was inequitable access to natural resource use that had marginalized local communities and thus provided few incentives for conservation. An initial information-gathering phase was conducted by CIDA-funded international consultants in 1994–95 and proposals put forward for a larger study to be financed under the GEF project. This provoked considerable discussion in Malawi that took four years to resolve. The main items of contention were GOM's intent to omit community participation, non-compliance with the Bank's procurement process, and the project manager's desire to reduce the budget for this activity in order to increase funds for research.

2.17 The outcome of the planning process has extremely important implications for overall management of the lake. Local communities were recognized as central to the success of biodiversity management. First, communities have to be empowered through legally-established Village Trusts that enabled them to enter into contracts for management of village assets which included changing from open-access to natural resources to community-managed access. Second, tourism development has to be systematically designed to ensure the benefits go largely to local communities. There was considerable synergy between this activity and the community education and environmental awareness campaigns which has raised local stakeholders' expectations.

2.18 Even though the Nankumba Strategic Plan was not implemented, promising first steps are being taken by some stakeholders. The first village trust was constituted in Chembe Village, the main human settlement in Nankumba, with the assistance of a local eco-tourism operator and was registered in July 2000. It is expected that Trust will enter into a co-management agreement with the Department of National Parks and Wildlife in order to secure a share in tourism revenues, and provide a new incentive towards the conservation of the Park's resources. During the audit, however, the mission detected considerable cynicism within the National Park communities and many interviewed felt that nothing will come of the plan. Indeed, a recent GTZ study shows that, over the past two years, there is growing evidence that catches from communally-fished areas have declined.⁷

2.19 **Biodiversity Map and Management Plans for the Lake.** The Plan was not produced. The biodiversity information was partly collated into a digital database and maps and was not linked to the Lake Management Plan. This was because, as noted earlier (para. 2.12), the ecological work was only partially collated. On the one hand, it was accorded a low priority by both the Steering Committee and the project manager and on the other, it was highly dependent on the outputs of the research program, the Strategic Plan for the Lake Malawi National Park and Nankumba Peninsula, and the findings and action resulting from the review of environmental legislation. Notwithstanding these constraints, there was no reason why an outline strategic plan could not have been produced if only to provide a focus for the GEF activities. Properly drawn up, it could have identified and prioritized research and needed inter-regional consultation on aspects of the plan. Instead it was seen as a final blueprint rather than a continuously evolving framework growing in response as new information and stakeholder input was generated. Achievement was also undermined by the high turnover of Bank management in the first two years of the project, and infrequent supervision thereafter that could only react to successive failure by the project manager to deliver even a draft report. Eventually, the Bank at mid-term review (1998) agreed to very much reduced "interim management recommendations" whose prime purpose was to identify critical follow-on scientific work and the terms of reference for a

7. GTZ. 2001. Socio-Economic Survey No.1 Msaka Village (Nankumba Peninsula). Report by Elvira Ganter, National Aquatic Resource Management Program, Department of Fisheries, Malawi.

“second phase” project “to advance development of a more detailed Lake Management Plan.” Thus, the research agenda and its management completely displaced this strategic objective.

2.20 Environmental Legislation. It was planned that this work would be undertaken by a senior legal advisor contracted by the project who would collaborate with the riparians’ legal experts and organize a workshop at the end of the first year. The output expected before mid-term review was to have been a report providing recommendations to riparian countries for revising and strengthening legislation and enforcement ability, and preparation of draft legislation when appropriate. This was a central feature of the project, yet very soon after project effectiveness, the legal aspects were treated as if they were marginal. The project manager facilitated an offer from FAO to assume responsibility for management and funding this component as this freed budget (\$137,000) and management time for the increasingly demanding research program.

2.21 Subsequent bureaucratic process delayed the review by three years. Government of Malawi took a year to submit its Technical Cooperation Program request to FAO and, in response, FAO asked for similar requests from Tanzania and Mozambique. Even though the FAO’s senior legal advisor produced a work program after a reconnaissance mission in November 1997, trilateral approval of this document was delayed because of disagreements over the name of the Lake. As a result, national consultants in law and natural resource management were only recruited in September 1999. Even so, the final report was not finished by project closure, and FAO approved a further sum of \$299,000 to fund completion. Part of this latter delay is because FAO enlarged the scope to include capacity-building and development of a framework for environmental monitoring. The current plan is to consolidate country reports into a joint report for discussion at a workshop to be organized by FAO/TCP. The eventual date for delivery of a final product is unknown.

3. Ratings

Outcome

3.1 *The outcome criteria take into account the extent to which the project's major relevant objectives were achieved, or are expected to be achieved, efficiently.* The audit rates project outcome as moderately unsatisfactory. The justification for this rating is described below:

Relevance: Were the Project Objectives Right?

3.2 *Relevance is the extent to which the project's objectives are consistent with the country's current development priorities and with current Bank country and sectoral assistance strategies and corporate goals.* The project objectives were and remain highly relevant. They are consistent with GEF’s Global Environmental Strategy which emphasizes safeguarding areas of biological diversity, maximizing benefits from sound management of international waters, and reducing risks caused by uncertainty. The tourism development potential of the lake is a significant economic prospect, particularly for Malawi and Tanzania and maintaining the quality of the lake’s environment and its biodiversity are key components to marketing this potential. All three countries have highlighted their concerns about the lack of reliable data to plan and manage the lake in the process of developing their own National Environmental Action Plans. Notably, Malawi, which completed its NEAP in 1994, was somewhat in advance of the other riparians and had a significantly greater interest in the management of the lake. Malawi’s Fisheries Conservation and Management Act of 1997 affirms the continued relevance of project objectives for its portion of the lake.

3.3 Concerns for conservation of the biodiversity of Lake Malawi/Nyasa were and still are relevant given the recent experience with the other great lakes of Africa and in North America. The two main threats to Lake Malawi/Nyasa biodiversity are over-harvesting of fish and water quality degradation as a result of increased pollution from intensified human activity within the watershed. Population density is not merely high, but is growing at about 3.5% per year—among the highest rates globally. And between 1990 and 1999, the forested area of Malawi declined by 21%. The lake's fisheries are the main source of low-cost animal protein—as much as 75%—for the adjacent rural populations in the biggest riparian, Malawi, and signs of over-fishing emerged in the early 1990s. In the southern part of the lake, commercial trawl fisheries reported declining catches and fish size despite being better regulated than inshore artisanal fisheries.⁸ And inshore, due to intensified localized fishing and use of smaller mesh nets, some *cichlids*, including unique endemic species, showed precipitous decline.⁹ As a result of these findings, the Bank cancelled the fish production component of the sister Malawi Fisheries Development Project (Credit 22250-MAI) and restructured it in 1993. While research conducted by the subject project indicates that there are plentiful stocks of deep water fish, inshore over-fishing it is still a cause for concern.

3.4 At the same time, research highlighted the vulnerability of the world's other great lakes—Victoria, Tanganyika, and those of North America—to restocking, poor watershed management, and over-fishing, and raised concerns for Lake Malawi/Nyasa. In Lake Victoria, water hyacinth had burgeoned in response to poor urban area and land management which generated high nutrient inflows to the lake, closing harbors and impeding navigation. The same nutrients also led to excessive growth of algae, deoxygenation of deeper waters, and augmented the loss of *cichlid* biodiversity, already degraded by introduction of exotic Nile perch. Many once-common species in lake Victoria were no longer found and feared extinct (Witte et al., 1992).

3.5 Planning for sustainable management of Lake Malawi/Nyasa, however, was hindered by inadequate knowledge of the lake's fisheries and their ecology and this provided the rationale for the GEF project. While some research of one of the two major *cichlid* groups had been undertaken, the DFID-funded joint Malawi-Mozambique-Tanzania Pelagic Fish Resource Assessment Project (completed in 1994) focused on the wide-ranging species, and little systematic work was done on the less-mobile sedentary species. No work had been attempted on larger-scale ecological, water quality, or watershed investigations. And one area that had been granted legal protection, Lake Malawi National Park, had been identified by Malawi as a site for major casino/hotel development even though the environmental impacts of this were unknown. The GEF project set out to rectify these omissions and was highly relevant.

3.6 The objectives of the GEF project correctly recognized that research had to be factored into development of a lake-wide management plan owned by Malawi, Mozambique, and Tanzania. Raising environmental awareness among these riparians and addressing the problem of harmonizing their legal and enabling environment is becoming increasingly important if a lake-wide management plan is to be agreed.

Efficacy: Did the Project Achieve its Stated Objectives?

3.7 *Efficacy is a measure of the extent to which the project's objectives were achieved, or expected to be achieved, taking into account their relative importance.* The audit rates the overall efficacy as modest based upon the relative importance of the development objectives.

8. The FAO/UNDP *Chambo* Fisheries Research Project (FI:DP/MLW/86/013), conducted over the period 1991-93, claimed that severe over-fishing in the demersal trawl fishery in the SE arm of the Lake indicated collapse of fish stocks in the late 1980s.

9. Findings from the Traditional Fisheries Assessment Project (1993).

3.8 The project achieved most of its environmental research and capacity building objectives with few shortcomings. It was less successful in achieving its institutional objectives, which include addressing tripartite management of Lake Malawi/Nyasa, developing strategic plans to facilitate this objective, and making recommendations about the legal and enabling framework. The audit rates the overall efficacy as modest given the importance of the regional development objectives.

3.9 The evidence indicates that institutional project objectives were too ambitious in the time frame available. Unlike OED, however, the Africa Region Staff believe the scientific knowledge and capacity-building objectives were more important: "it is hard to imagine how the project, with its weak institutional base and narrow scientific constituency, could have managed to provide not only scientific understanding of the scope of issues involved, but also "the social, legal, and economic challenges needed to be overcome before a sound biodiversity management plan can be implemented. On a more fundamental basis we question the appropriateness of adding such an objective to what was at heart a scientific research project"¹⁰

Table 1: The Extent to Which the Project's Development Objectives were Achieved

<i>Objective Type</i>	<i>Description</i>	<i>Relative Importance</i>	<i>Achievement</i>
Institutional	Trilateral Cooperation	High	Modest
	Transboundary Resource Management Plans	High	Negligible
	Sector Capacity Building	High	High
	Legal Framework	Substantial	Modest
	Raising Environmental Awareness	Modest	Substantial
Environmental	Knowledge of the Resource Base	High	High
Physical	Rehabilitation of Research Facilities	Modest	Modest

Efficiency: Was the Project Cost Effective?

3.10 *Efficiency is a measure of the extent to which the project achieved, or is expected to achieve, a return higher than the opportunity cost of capital and benefits at least cost compared with alternatives.*

3.11 This is difficult to measure as only qualitative indicators are available. The project was not particularly efficient and the overall rating is modest. The delays in starting the scientific research had a domino effect on achievement of other objectives. Many difficulties—particularly lack of research vessels and laboratories—were not foreseen at appraisal and this adversely affected an efficient start of the research program. Infrequent meetings of the Steering Committee and an ineffective Research Advisory Committee meant that there were significant delays in agreeing the work plan, recruitment, and initiating capacity-building. Poor management meant that half the work and investment in lake ecology research remains unused. Thus the benefits could have been achieved at a lower cost.

Institutional Development: Has the Project Led to Better Management of Human and Financial Resources?

3.12 *This is a measure of the extent to which a project improves the ability of a country or a region to make more efficient, equitable, and sustainable use of its human, financial, and natural resources through better definition, stability, transparency, enforceability, and predictability of*

10. Comments from the Bank's Africa Region Staff, June 12, 2001.

institutional arrangements. Overall, the audit rates the institutional development impact of the project as modest.

3.13 In terms of building research capacity among the riparians on environmental/biodiversity issues, the audit rates achievement as high. The way in which the training was conducted has drawn them into the international environmental and biodiversity research fraternity which should be highly beneficial in the long term. All three countries now have groups of trained researchers who have worked together for a common cause and this is an important building block to improved riparian cooperation and may accelerate the process. However, a major weakness of the project is that there should have been more attention to training in natural resources management.

3.14 The project has made a substantial contribution to knowledge of Lake Malawi/Nyasa through better definition of the resource base and the threats to it. However, this knowledge was not operationalized - the level of achievement among the riparians in terms of reaching agreements and formulating plans on how to manage that resource sustainably is modest at best. The process to achieve the Strategic Plan for the Namkumba Peninsula and Lake Malawi National Park illustrates the complexity and socially demanding nature of facilitating sustainable management of natural resources. The high level of stakeholder involvement and the need to align divergent interest provides a good model of what needs to be done by each riparian. This process highlighted the need to ensure a common understanding of the scope of issues involved and the social, legal, and economic challenges that need to be overcome before a sound biodiversity management plan can be implemented.

3.15 The audit rates achievements in the area of regional cooperation as modest. This is not unexpected given the relatively low political priority of biodiversity conservation, the wealth of other social and economic challenges in region, and time-scale needed to achieve agreement on this institutional objective. Rather than establishing a common vision about lake management, the project polarized the interests of the riparians and, apart from Malawi, ownership was low. Most of the trilateral consensus building was through the legal review process taken over by FAO. The GEF and CIDA grants were given to Malawi to implement on behalf of all riparians. While this was in the spirit of the SADC arrangements, it was not conducive to the full involvement of Tanzania and Mozambique in this regional initiative. The bulk of the funds was spent on researchers and facilities based in Malawi and this subsequently caused Tanzania and Mozambique considerable resentment as they became aware of the details through their membership of the Steering Committee. At the end of the project the workshops held to disseminate the findings were primarily Malawian affairs with little involvement of Tanzania and Mozambique at the policy level.

Sustainability: Are the Results Likely to Last?

3.16 *Sustainability is evaluated by assessing the risks and uncertainties faced by the project and by ascertaining whether adequate arrangements are in place to help avoid known operational risks or mitigate their impact.*

3.17 Despite substantial achievements in capacity building, the audit rates overall sustainability as unlikely. While the results of the research training and knowledge building are likely to last, trained staff remain within a fisheries enclave that is weakly linked to national environmental organizations. Staff incentives are reduced with a return to government salaries.¹¹

11. In their review of this PAR, Africa Regional Staff note that "Within these agencies, the officers trained by the project show continued commitment to developing a meaningful research agenda for the Lake despite their return to standard terms of service. They are also providing the intellectual leadership that has made possible the planning of the three national programs for sustainable management of the Lake ecosystem. The project's principal fishery researchers

Given its more pressing food security, health, education and other problems, Malawi cannot provide sufficient budget to sustain the Lake research program, continue systematic monitoring and evaluation of biodiversity, and maintain the DFID research vessel. The Malawian Government's impasse over the future use of DFID's fisheries research facilities in Malawi is not reassuring either. More importantly, neither Malawi nor the other riparians have mainstreamed the scientific findings of the project or institutionalized Lake management. Agreement on a trilateral management plan to ensure conservation of the Lake's biodiversity – or even the process to achieve it – remains elusive. Without continued external funding and facilitation, biodiversity conservation activities initiated under the project are unsustainable.¹²

3.18 While national level economic interests are gradually aligning with conservation goals, there is a race between resource consumption driven by dire poverty and slowly evolving biodiversity management planning. There have been major advances in environmental legislation and stakeholder involvement in Malawi, the biggest user of Lake Malawi/Nyasa's resources. Community-managed fishery regulation is gradually developing through Beach Village Communities (piloted through Bank and other donor-funded projects) and GTZ is underwriting a national program. But related aspects are faltering and threaten biodiversity objectives. Fisheries credit to enable artisanal fishermen to upgrade equipment and move off-shore (where fish stocks are under-fished) is in short supply because the rural credit institutions and agencies see it as high risk. Even when credit is available, it is far below investment needs, and much is used for non-fishing alternative income-generating activities to make up for falling fisheries income.

3.19 Small-scale fishing effort on the Lake is increasing, yet production and incomes have decreased. Between 1995 and 1999, the number of inshore boats increased by about a quarter and the number of fishermen by 16% - yet production fell by almost 10%.¹³ The indications are that the current small-scale inshore fishing efforts exceed sustainable fisheries resources, particularly at the southern end of the Lake.¹⁴ And regrettably, it is these inshore areas that contain many of the unique sedentary – and thus higher risk – fish species. Biodiversity is thus under increasing threat. Neither the GEF Biodiversity Conservation Project nor the Bank's Fisheries Development

from Tanzania, Mozambique and Malawi are currently attending an international fisheries conference hosted by Malawi (June 5th to 9th, 2001), and have each presented papers of relevance, some based on research undertaken since the project closed.”

12. The Bank's Regional Staff do not fully agree with OED's evaluation and comment: “It is evident that establishing a sustainable research program and appropriate institutional mechanisms for collaborative management of the Lake's biodiversity will take considerable more effort, support and time than available under what was first and foremost a science program. Given the Lake's globally significant biological resources, analysis of sustainability should not therefore be limited to Malawi's capacity to shoulder the entire expense of future activities; rather this should be seen as a three-country endeavor involving multiple external partners, and the sustainability question should look at the likelihood of such partnership's ability and willingness to provide sufficient resources. In this case, given the importance of Lake Malawi and its biodiversity and fishery resources, multiple donors are in fact interested in long-term partnership and financial support.”

13. Malawi Department of Fisheries. 1999. Frame Survey. Personal communication, Peter Jarchau GTZ.

14. The Bank's Regional Staff points out that OED's evaluation is too pessimistic: “Recent studies into trophic structure conducted under the EU-financed Demersal Fish Stock Trophic Ecology Project, a sub-program of the GEF Project, suggest that in the heavily trawled waters of the Lake's South East Arm a fishing-related depression of demersal fish community complexity returned to previous levels within five years, either as an adaptive response or a recovery (depending on assumptions made about the disposition of fishing effort). While some individual fish species have (almost certainly) been lost as a result of intense fishing--and others will probably follow--it would be simply wrong to view the resources of Lake Malawi as on the brink of collapse. In fact, given the current heavy level of inshore fishing pressure and planned sector development initiatives in support of experimental and demonstration activities to transfer artisanal fishing effort from biodiversity-rich nearshore areas to under-exploited offshore stocks, the interests of biodiversity conservation and economic development coincide.”

Project have been able to slow these adverse trends. Therefore for these and other factors discussed, sustainability is rated as unlikely.

Bank Performance

3.20 *This is a measure of the extent to which services provided by the Bank ensured quality at entry and supported implementation through appropriate supervision (including ensuring adequate transition arrangements for regular operation of the project).* Overall the audit rates Bank performance as unsatisfactory. The adverse effects of poor appraisal dogged the project. While there was marked improvement in supervision toward the end of the project, it was too late to redress these failings.

3.21 Quality at entry was unsatisfactory. Appraisal overlooked the poor condition of essential research facilities and uncritically accepted a poor management set-up inherited from a previous project. Even though the basic research program was well-designed, not enough emphasis was given to using the results of this research for environmental management. As a result, the project became a specialized enclave effectively operating in isolation from other agencies and departments—most notably Malawi’s Fisheries and Environmental Departments—and failed to take advantage of this potential synergy. While it was well grounded in the GEF agenda for the region and national and regional environmental management goals, the overall objective to achieve a lake management plan among the three riparians was over-ambitious. Each stakeholder had differing levels of interest and ownership which the appraisal process failed to take into account.

3.22 Neither Tanzania nor Mozambique were treated as equal partners by the Bank. All the appraisal activities were centered on Malawi and the other riparians were only involved on the periphery. The Bank’s identification of UNDP during appraisal to manage the design and construction of the fisheries research stations in Tanzania and Mozambique was *de facto* recognition that neither had ownership of the project. During the Yellow Cover review, it was pointed out that the U.K.’s DFID was concerned at the apparent lack of regional equity in the project—yet the Bank uncritically accepted the task manager’s response that, as neither Tanzania nor Mozambique had raised this issue, it was not a concern. Tanzania and Mozambique (in response to a Bank request) formally give their no-objection to the GEF grant agreement with Malawi and neither participated in negotiations even though these were held in Lilongwe, Malawi.

3.23 The Bank’s approach to partnerships created problems for the project. The Bank did not secure full consensus and country ownership with partners about project objectives before shifting the main responsibility for vital project components (legislation, building research stations) to them. As a result, the schedule of the final output is not matched to project objectives. DANIDA are continuing the Bilhazia work which has limited relevance to study objectives and, at the same time, occupying project rehabilitated space that is in far better condition than that allocated to permanent line agency outreach staff. In effect, the GEF grant subsidized the DANIDA program.

3.24 The DFID relationship, while it was not a formal partnership, built on DFID’s considerable and long-term interest in the Lake’s fisheries as illustrated by its Pelagic Fish Resources Assessment project which ended in 1994. Subsequently, DFID offered its facilities and research vessel – and background advice during appraisal and supervision. However, the poor state of repair of the research vessel and facilities should not have been missed by DFID and the appraisal team. Given DFID’s substantial and continued commitment in kind, the Bank should

have made representations to government to have DFID as a member – rather than an observer – of the Steering Committee.

3.25 After an initial poor start due to three changes of task manager, supervision quality improved substantially toward the end of the project when it finally reached levels planned during appraisal. However, by the time better supervision became effective, the broader regional cooperation and cross-boundary resource management components had been effectively squeezed out of project implementation. While later supervision provided timely identification of implementation problems and was proactive in follow-up of remedial measures with the Steering Committee, these were ineffective because the expatriate project manager proved intransigent to pressure for biodiversity and lake management plans despite his terms of reference.¹⁵ The Bank did not press for an effective Research Advisory Committee and instead substituted for it. Toward the end of the project supervision, when it was clear that some of the objectives would not be achieved, the Bank effectively worked with government and CIDA to facilitate a bridging plan during which time it formed a partnership with DFID for a follow-up second-phase project.

Borrower Performance

3.26 *Borrower performance is rated by the extent to which borrower assumed ownership and responsibility to ensure quality of preparation and implementation, and complied with covenants and agreements, toward the achievement of development objectives and sustainability.* The audit rates borrower performance as unsatisfactory.

3.27 Borrower interest and ownership was uneven.¹⁶ Preparation was dominated by Malawi and participation by the other riparians was marginal. Borrower performance is judged by the performance of the trilateral Steering Committee managed by Government of Malawi on behalf of the three riparians and project management. On the whole it was unsatisfactory. The infrequent meetings of the committee and its inability to reach a consensus on many issues caused significant delays to the project. The Steering Committee neglected to establish a strong and independent Research Advisory Committee and there was no effective oversight of the project's science agenda.¹⁷ It neglected to establish links to riparian government's own line agencies involved in biodiversity and ecological management. It failed to take timely action on the technical issues relating to the ecology program and that led to the significant loss of the research effort (para 2.12). It was ineffective in keeping the project focused on its biodiversity management objectives and clearly had difficulty in steering the activities of the expatriate research team.

15. The last item on the Project Manager's TOR is: "coordinate the preparation of the Biodiversity map and management plan for Lake Malawi/Nyasa drawing on the outputs of the project components."

16. Malawi, as the largest riparian, had easy access to the shallowest and most productive southern end of the lake and a number of donor-funded fisheries research projects provided it with a strong comparative advantage. Conversely, both Tanzania and Mozambique rely primarily on extensive sea fisheries along the Indian Ocean rather than the Lake. Institutionally, Tanzania was also heavily involved in the GEF Lake Victoria initiative and had little capacity to expand to Lake Malawi/Nyasa. Mozambique was distracted by its civil war.

17. DFID in its review of this report states that both the Steering Committee and the Research Advisory Group (RAG) intended to direct project activities. However, the Steering Committee never actually had any effective representation of NGO/Community groups; and the RAG never met. Donor representatives, including DFID, only attended the Steering Committee meetings by invitation as observers.

4. Lessons

This project raises two major issues. First, how does one ensure that there is balance between scientific research and pro-active planning for resource management? Second, how does one achieve sustainable management of trans-boundary resources when the riparians have differing interests and incentives to participate?

4.1 The balance between research and planning appears to be primarily determined by the terms of reference (TOR) of the project manager and, to a lesser extent, by the effectiveness of the steering committee. The TOR specified a scientist and, as a result, all other project activities were hostage to meeting the ever-increasing demands of academic excellence. It was also difficult for the non-specialists managers to argue the fine points of biodiversity. While this was no doubt good for scientists' careers and institutes, it did not provide much benefit to the riparian states as the scientific results were not used to develop practical and pragmatic guidelines to guide future development and conservation activities related to the Lake. If, on the other hand, a seasoned planner – a generalist able to see the “big picture” had been given charge of project management – there would have been a higher likelihood that the required Lake management plans would have been produced. OED found that a similar science-bias in the project set up caused a lack of focus on planning and resource management in two GEF forest biodiversity conservation projects in adjacent areas of Poland and Belarus.¹⁸ Like the Lake Malawi/Nyasa project, the PAR of these projects found that these operations were under-designed and noted issues such as the need for clearer and more operationally relevant objectives and targets, and the importance of greater inclusiveness during both the preparation and implementation stages

4.2 Achieving a balanced approach to biodiversity conservation among common riparians is difficult particularly when the resource is not equally divided. A joint project executed by one of them needs very careful design. In this case Malawi, as impartial SADC sector coordinator for fisheries and the largest user of the Lake, had a conflict of interest as it was the major beneficiary of the GEF grant it administered for all three countries. SADC, however, is still the obvious coordinating body, and the Lake Malawi/Nyasa experience suggests that another member country unconnected with the Lake should assume the chair for any future GEF activities.

4.3 A follow-up project is planned. Malawi is preparing a GEF-funded Lake Malawi Ecosystem Management Project for appraisal in November 2001 while Tanzania and Mozambique are initiating requests to the GEF for project development funds to bring forward their national programs for the Lake. Little is known at this stage about how these proposals will attempt to accelerate the slow progress towards regional cooperation and institution-building.

4.4 Malawi is also making efforts to develop an institutional structure and financing arrangement to take responsibility for project assets at Senga Bay and continue research and monitoring. With the support of the United Nations University's International Network on Water, Environment and Health (INWEH), the Ministry of Natural Resources and Environmental Affairs and the University of Malawi are currently exploring the feasibility and modalities of establishing an independent, non-profit international center for aquatic research and education (ICARE) to be based at Senga Bay. The proposed research would focus on transboundary ecosystem issues and support lake-wide ecosystem monitoring.

There are five major findings from this project:

18. OED. 2000. Project Performance Audit Report - *Poland Forest Biodiversity Protection Project (GEF Grant 21685)*. Report No. 20589. June 20, 2000.

- Establishing regional institutions for international waters projects requires very careful planning, extensive consultation, clear and unambiguous agreements, protocols on communication, and an effective umbrella organization to coordinate and synergize riparians' efforts. All this requires a high level of Bank effort and facilitation to avoid GEF projects becoming enclave activities of questionable operational value.
- Achievement of multi-country objectives is put at risk if only one partner receives and manages GEF project financing. It is probably better to support cross-boundary resource conservation through free-standing projects to individual countries and deal with the inter-regional coordination as a separate activity.
- GEF biodiversity and environmental projects require objective management and technical review to ensure continued focus on their development and operational goals—and thus avoid becoming hostage to increasingly demanding scientific agendas.
- GEF projects need to be strongly linked to all relevant national environmental and natural resource agencies to mainstream the development effort and leverage outputs.
- Partnership with bilateral development agencies (who have a comparative advantage in many areas) need to be carefully structured and based on shared objectives for which country ownership is assured if they are to significantly enhance the effectiveness of GEF projects.

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Basic Data Sheet

MALAWI GEF/SADC LAKE MALAWI/NYASA BIODIVERSITY CONSERVATION PROJECT (GEF TF 28671-MAI, CIDA TF 22676-MAI)

Key Project Data (amounts in US\$ million)

1995-2000	Appraisal Estimate 1995	Actual or current estimate 2000	Actual as % of appraisal estimate
Total project costs	5.44	7.60	140
GEF grant amount	5.00	4.96	99
Cofinancing			
CIDA	-	2.64	-
DFID	-	In kind ¹	-
Cancellation	0	0	-
Economic rate of return	Not applicable	Not applicable	-

1. Support for rehabilitating the Senga Bay research facility and the Research Ship Usipa was estimated at £ 0.366 million.

Project Dates

Steps in project cycle	Original	Actual
Project Concept Document		02/10/92
Appraisal		02/22/93
Board presentation		12/30/94
Effectiveness	01/31/95	07/31/95
Mid-term review	07/31/97	01/19/98
Loan closing	7/31/99	6/30/00

Staff Inputs (staff weeks/cost)

	No. staff weeks	US\$ (,000)
Identification/Preparation	96.40	230.70
Appraisal/Negotiation	69.0	200.90
Supervision	139.03	418.34
Completion	3.36	15.11
Total	307.79	865.05

* Not including FAO/CP ICR Mission.

Mission Data

	Date (month/year)	No. of persons	Specializations represented	Performance rating	
				Impl.	Status Dev. Obj.
Identification/preparation	02/92	NA	NA	-	-
Appraisal/negotiation	02/93	11	M, MM, AD, FI(3), WL, E, W (2), WS	-	-
Supervision	9/95	2	E, R	-	-
	12/95	2	E, R	-	-
	3/96	2	E, R	U	S
	3/97	3	NM, DI, CI	U	S
	1/98	7	E, NM (2), R, CI, DA, DI	S	S
	9/98	8	NM (2), R, CI (3), DI (2)	S	S
	3/99	9	NM (3), R, E, CI (3), DI	S	S
	9-10/99	5	NM (2), A, R, E	S	S
Completion	8/2000	1	NM	S	S
		3*	FI, AD, ID	-	-

A=Agriculture, AD=Adviser, CI= CIDA representative; DA=DANIDA representative; DI=DFID representative;
E=Economist; FI=Fisheries Specialist; ID=Institutional Development Specialist, M=Management Specialist; NM=Natural
Resource Management Specialist; R=Agricultural Research Specialist; S=Sociologist; W=Wildlife Specialist; WS=Water
Specialist.

Project Costs and Financing

Project Cost by Component (in US\$ million equivalent)

<i>Project Cost By Component</i>	<i>Appraisal Estimate US\$ million</i>	<i>Actual/Latest Estimate US\$ million</i>	<i>Percentage of Appraisal</i>
Research	2.46	4.18	170
Strengthening National Capacity	0.36	1.32	367
Legislation	0.13	-	-
Protected Areas	1.09	0.35	32
Project Administration	0.83	1.18	142
Total Baseline Cost	4.87		
Physical Contingencies	0.57	0.57	100
Total Project Costs	5.44	7.60	140
Total Financing	5.44	7.60	140

Actual/Latest Estimate includes costs expended under CIDA Grant.

Comparison under "Percentage of Appraisal" would not be valid as the appraisal estimates are based on GEF funds only, while the actuals include both GEF and CIDA funds.

Key Performance Indicators

Outcome / Impact Indicators:

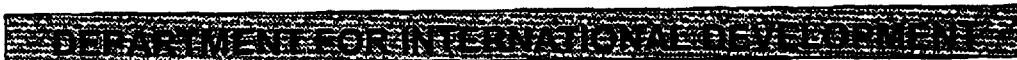
<i>Indicator</i>	<i>Description</i>	<i>Audit Findings</i>
<p>A comprehensive biodiversity map of Lake Malawi/Nyasa</p> <p>A management plan for Lake Malawi/Nyasa</p>	<p>A Biodiversity Map and Management Plan, drawing on the research, planning and legal review outputs of the project and other relevant published information in order to recommend appropriate Lake management strategies.</p>	<p>Databases containing information on fish distributions and ecology and shoreline habitats exist but those have only been analysed to a limited extent. The required output was not produced.</p> <p>The synthesis of project findings into management recommendations for conservation and development was not undertaken.</p> <p>The framework for regional collaboration is still under discussion.</p>
<p>Preparation of a plan for ecologically compatible development in the Nankumba Peninsula and Lake Malawi National Park</p>	<p>A Nankumba Peninsula strategic plan.</p>	<p>The Nankumba Peninsula strategic plan was fully developed through stakeholder participation. It has not been implemented. A management plan for Lake Malawi National Park remains incomplete.</p>
<p>Scope for regional harmonisation and strengthening of lake-related environmental legislation reviewed</p>	<p>A legal review report and new or amended environmental legislation proposed in draft.</p>	<p>Process for harmonising regional fisheries legislation under way in all three countries as a first stage in this process.</p>
<p>Awareness raised among all sectors of society on issues related to the biodiversity of Lake Malawi/Nyasa</p>	<p>Development of a conservation awareness programme, including media productions, for all sectors of society.</p>	<p>International standard theatrical and artwork products raised awareness of issues related to the Lake on many levels, from village to central government and political. Its appropriateness and replicability without external funding is questionable. A community environmental awareness programme was successfully implemented limited in area of Malawi.</p>
<p><i>Environmental Legislation Component</i></p>	<p>Recommendations to riparian countries for revisions to environmental legislation relating to the lake.</p> <p>New or amended legislation drafted as necessary</p>	<p>Analysis of relevant fisheries legislation in an advanced state in all three countries under an ongoing FAO-TCP project, with the intention of preparing a regional review of fisheries management options. International cooperation in other Lake-related environmental fields limited under this project to monitoring rather than regulation.</p> <p>Not yet achieved but revision of fisheries legislation is planned under a second-phase FAO-TCP project.</p>

Output Indicators:

<i>Indicator</i>	<i>Description</i>	<i>Audit Findings</i>
Research Component:		
(a) Biodiversity Surveys	Biodiversity report and maps showing critical habitat and biodiversity hotspots	A digital biodiversity atlas comprising 17 vector and raster maps, relational databases and data tables on a single compact disk, and multi-media presentations on 4 PAL format video tapes and 3 compact disks. These are accompanied by a final report and user manual.
(b) Limnology and water quality monitoring	Report on water quality of lake habitats outlining major threats to biodiversity	Report on water quality outlining major threats to biodiversity and including investigations of river discharge; atmospheric nutrient deposition; deep water renewal; nutrient upwelling and nutrient cycling; factors controlling algal abundance and composition, and contaminants in water, sediments and biota. The report provides outline recommendations for future management of the Lake's water quality.
(c) Fish taxonomy and ecology	Primary scientific information on species distribution and ecology	<p>Report on fish systematics and taxonomy, detailing the revision of eight species groups (including more than 100 species) and a description and discussion of the distribution and species richness of mbuna (rocky shore cichlids) and non-mbuna cichlids.</p> <p>5 reference collections of fish: one in each of the riparian countries with back-ups in Belgium and RSA.</p> <p>Report on fish ecology presents information derived in the project's final year on temporal trends and species composition of demersal trawl stocks; life history characteristics of 40 important demersal cichlid species; the diets of 9 important demersal species; a lakewide study on fish population continuity in 2 species and an assessment of the influence of suspended sediments on the distribution and abundance of rocky and sandy-shore cichlid species.</p> <p>An illustrated guide to the sandy-shore fishes is under final preparation.</p>
(d) Rehabilitation of research stations	<p>Species identification manual</p> <p>Enhanced facilities for local and visiting scientists</p>	<p>Senga Bay (Malawi): laboratories rehabilitated; two offices constructed; one dwelling converted into a systematics laboratory; fish store constructed; water pump, standby generator, laboratory equipment, three vehicles and one boat procured.</p> <p>Cape Maclear (Malawi): Research station rehabilitated but still incomplete; one boat procured. Kyela (Tanzania): a new research facility constructed; one boat procured.</p>

Comments from a Development Partner

Fax Message



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FOR : Alain Barbu

FROM ; Dr Harry Potter

OF : OED, World Bank

DATE : 28 June 2001

LOCATION : Washington

FAX NO : + 265 772 657

FAX NO : 101 1 202 522-3123

OUR REF NO : GEF/SADC 093/3

YOUR REF NO :

COPY TO : WB office, Lilongwe

Number of sheets including header:

SUBJECT : Project Performance Audit - GEF/SADC Lake Malawi/Nyasa Biodiversity Conservation Project (GEF TF 28671 & CIDA TF 22676)

Dear Mr Barbu,

Thank you for the copy of the PAR. I am afraid it only arrived today, so I am commenting after the 27th June date you mention!

You deserve congratulations on the frankness and constructive content of the report, which I am sure all stake-holders will take lessons from. I would wish to offer the following comments/suggestions, particularly to correct various remarks about the DFID contribution to the project:

¶ 1.4 – You may wish to say that for both the Steering Committee and the Research Advisory Group (RAG) *there was an intention* to have the composition and responsibilities you mention. This would then allow you to comment on the facts a) that the Steering Committee never actually had any effective representation of NGO/Community groups and b) that the RAG never met. You might also wish to mention that donor representatives, including DFID, attended the Steering Committee meetings by invitation as observers.

¶ 2.11 – The final sentence is basically correct, but the footnote no 3 does not reflect a correct interpretation of the DFID position. The statement from your Africa Regional staff does not accord with statement made by DFID. DFID reluctance to hand over the r.v. USIPA and the use of the Senga Bay site is based on the following:

- No credible plan for the operation and maintenance of the USIPA after the end of the SADC/GEF project was ever presented. The absence of clear maintenance arrangements following the closure of the former SADC Pelagic Fisheries Project and

the inception of the SADC/GEF Project led to the delays and unexpected costs you mention in the early part of the paragraph. Transfer of Ownership of a DFID asset of such value requires approval rather than a formal Act of the UK Parliament and in any event would require a clear legally recognised owner. The question of ownership should not be confused with use. The USIPA operated successfully during the SADC/GEF project under a licence arrangement. A similar arrangement under a follow-up project could be agreed with DFID, provided a clearly-resourced business and operational plan is evident, which would guarantee the integrity of the asset. The DFID Lilongwe office has continued to show good faith by maintaining the USIPA in a sea-worthy condition, while the protracted negotiations for a possible follow-up project have proceeded. This was confirmed during the discussions of possible management arrangements covered in your ¶4.3 & 4.4. As a result the total DFID costs to date have now risen to £0.5m.

- DFID has never "owned" the Senga Bay site. It is owned by Malawi Government. Access and use was legally conceded to DFID (previously ODA) for project use without any specified termination date. The assets are not of a value that would require parliamentary approval for transfer. An examination of the Steering Committee minutes will show that DFID has, on several occasions, requested the riparian partners to agree on an equitable disposition of the DFID assets at Senga Bay (buildings and moveables). This could then be the basis for an immediate formal hand-over through DFID Lilongwe office to appropriate legal entity or entities. The steering Committee appeared unable to meet this request, which is still open.

¶ 3.17 Will require amendment to replace the stated " DFID's ambivalence over the ownership...." to more accurately reflect the comments made concerning ¶ 2.11.

¶ 3.23 The text " yet it was unwilling to enter into a committed partnership" is patently incorrect and unfair comment. DFID agreed to make the USIPA available, complete with an International Captain, meeting the full cost of bringing up to seaworthiness after a two year lay-off. DFID also agreed to provide the project with the facilities (buildings and equipment remaining from the Pelagic fisheries Project) at the Senga Bay site and provide equipment and technical assistance support to the Remote Sensing activities. The recurrent value of these contributions was modest, but the capital value was significant – the project would have required a massive increase in funding to have provided equivalent assets from scratch. This clearly reflects DFID commitment to a partnership!

I trust that these comments will assist you in ensuring accuracy of the final version of the audit report.

Regards

Harry L Potter (Dr)
Natural Resources Adviser

cc. World Bank Office, Lilongwe (Attention Mr Liebenthal)

