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PROJECT PERFORMANCE ASSESSMENT REPORT

ROMANIA

**DANUBE DELTA BIODIVERSITY PROJECT
(GET GRANT 28860)**

June 20, 2005

*Sector, Thematic, and Global Evaluation Group
Operations Evaluation Department*

CURRENCY EQUIVALENTS

Currency Unit = Romanian Lei

1994	US\$1.0	=	1,683 Lei (appraisal)
2000	US\$1.0	=	24,129 Lei (completion)

ABBREVIATIONS AND ACRONYMS

DDBR	Danube Delta Biosphere Reserve
DDBRA	Danube Delta Biosphere Reserve Authority
EBRD	European Bank for Reconstruction and Development
GEF	Global Environment Facility
GET	Global Environment Trust
GIS	Geographic Information System
ICR	Implementation Completion Report
IUCN	International Union for the Conservation of Nature
MoE	Ministry of Waters, Forests and Environment Protection
NGO	Non Government Organization
NIB	Nordic Investment Bank
OED	Operations Evaluation Department (of the World Bank)
PIU	Project Implementation Unit
RIZA	Rijkswaterstaat, The Netherlands
WWF	World Wildlife Fund

FISCAL YEAR

Government: January 1 - December 31

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OED Mission: Enhancing development effectiveness through excellence and independence in evaluation.

About this Report

The Operations Evaluation Department assesses the programs and activities of the World Bank for two purposes: first, to ensure the integrity of the Bank's self-evaluation process and to verify that the Bank's work is producing the expected results, and second, to help develop improved directions, policies, and procedures through the dissemination of lessons drawn from experience. As part of this work, OED annually assesses about 25 percent of the Bank's lending operations. In selecting operations for assessment, preference is given to those that are innovative, large, or complex; those that are relevant to upcoming studies or country evaluations; those for which Executive Directors or Bank management have requested assessments; and those that are likely to generate important lessons. The projects, topics, and analytical approaches selected for assessment support larger evaluation studies.

A Project Performance Assessment Report (PPAR) is based on a review of the Implementation Completion Report (a self-evaluation by the responsible Bank department) and fieldwork conducted by OED. To prepare PPARs, OED staff examine project files and other documents, interview operational staff, and in most cases visit the borrowing country for onsite discussions with project staff and beneficiaries. The PPAR thereby seeks to validate and augment the information provided in the ICR, as well as examine issues of special interest to broader OED studies.

Each PPAR is subject to a peer review process and OED management approval. Once cleared internally, the PPAR is reviewed by the responsible Bank department and amended as necessary. The completed PPAR is then sent to the borrower for review; the borrowers' comments are attached to the document that is sent to the Bank's Board of Executive Directors. After an assessment report has been sent to the Board, it is disclosed to the public.

About the OED Rating System

The time-tested evaluation methods used by OED are suited to the broad range of the World Bank's work. The methods offer both rigor and a necessary level of flexibility to adapt to lending instrument, project design, or sectoral approach. OED evaluators all apply the same basic method to arrive at their project ratings. Following is the definition and rating scale used for each evaluation criterion (more information is available on the OED website: <http://worldbank.org/oed/eta-mainpage.html>).

Relevance of Objectives: 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 (expressed in Poverty Reduction Strategy Papers, Country Assistance Strategies, Sector Strategy Papers, Operational Policies). *Possible ratings:* High, Substantial, Modest, Negligible.

Efficacy: The extent to which the project's objectives were achieved, or expected to be achieved, taking into account their relative importance. *Possible ratings:* High, Substantial, Modest, Negligible.

Efficiency: 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 to alternatives. *Possible ratings:* High, Substantial, Modest, Negligible. This rating is not generally applied to adjustment operations.

Sustainability: The resilience to risk of net benefits flows over time. *Possible ratings:* Highly Likely, Likely, Unlikely, Highly Unlikely, Not Evaluable.

Institutional Development Impact: The extent to which a project improves the ability of a country or region to make more efficient, equitable and sustainable use of its human, financial, and natural resources through: (a) better definition, stability, transparency, enforceability, and predictability of institutional arrangements and/or (b) better alignment of the mission and capacity of an organization with its mandate, which derives from these institutional arrangements. Institutional Development Impact includes both intended and unintended effects of a project. *Possible ratings:* High, Substantial, Modest, Negligible.

Outcome: The extent to which the project's major relevant objectives were achieved, or are expected to be achieved, efficiently. *Possible ratings:* Highly Satisfactory, Satisfactory, Moderately Satisfactory, Moderately Unsatisfactory, Unsatisfactory, Highly Unsatisfactory.

Bank Performance: 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). *Possible ratings:* Highly Satisfactory, Satisfactory, Unsatisfactory, Highly Unsatisfactory.

Borrower Performance: The extent to which the borrower assumed ownership and responsibility to ensure quality of preparation and implementation, and complied with covenants and agreements, towards the achievement of development objectives and sustainability. *Possible ratings:* Highly Satisfactory, Satisfactory, Unsatisfactory, Highly Unsatisfactory.

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Principal Ratings and Key Staff Responsible

ROMANIA DANUBE DELTA BIODIVERSITY PROJECT (GET GRANT 28660)

	<i>ICR*</i>	<i>ICR Review</i>	<i>PPAR</i>
Outcome	Satisfactory	Satisfactory	Moderately satisfactory
Sustainability	Likely	Likely	Likely
Institutional Development Impact	High	Substantial	Modest
Bank Performance	Satisfactory	Satisfactory	Satisfactory
Borrower Performance	Satisfactory	Satisfactory	Satisfactory

- The Implementation Completion Report (ICR) is a self-evaluation by the responsible operational division of the Bank. The ICR Review is an intermediate OED product that seeks to independently verify the findings of the ICR.

<i>Project</i>	<i>Task Manager</i>	<i>Division Chief/ Sector Manager</i>	<i>Country Director</i>
Appraisal (1994)	Majorie-Anne Bromhead	James T. Goering	Michael Wiehen
Completion (2000)	Donna Rachita	Majorie-Anne Bromhead	Andrew Vorkink

Preface

This is the Project Performance Assessment Report (PPAR) prepared by the Operations Evaluation Department (OED) for the Romania Danube Delta Biodiversity Project. The project, estimated at appraisal to cost US\$4.8 million, was approved in August 1994 for a Global Environment Trust Grant of US\$4.5 million of which US\$4.3 million was disbursed due to exchange rate fluctuations. The project closed on schedule in June 2000 when US\$66,000 was cancelled. At completion total project costs were US\$4.5 million.

This report is based on the Implementation Completion Report (ICR) prepared by the Europe and Central Asia Region (Report No. 21537 dated December 2000), the Memorandum and Recommendation of the President, the Global Environment Facility Project Document, loan documents, project files, and discussions with Bank staff. An OED mission visited Romania in October 2004 to discuss the effectiveness of the Bank's assistance with representatives of the government, project implementing agencies, nongovernmental agencies, and with beneficiaries. The cooperation and assistance of central government and regional officials and staff, the Danube Delta Biosphere Reserve Authority, the Danube Delta National Institute, nongovernmental stakeholders, and other interested parties are gratefully acknowledged.

The project was selected for performance assessment for two reasons. First, this project was part of the first global round of GEF's biodiversity grants that are now reaching completion. Second, an almost identical GEF project, covering the Ukrainian portion of the Danube Delta, has also been completed and was assessed along with this project to draw lessons from the different approaches to biodiversity conservation.

Following standard OED procedures, this draft PPAR was sent to the borrower for comments but none were received.

Summary

The Romanian Danube Delta Biodiversity GEF Project, the first project aimed at protecting Black Sea wetlands, was designed as a pilot for a broader regional initiative including two GEF regional projects, one for the Danube River basin, and one for the Black Sea. During the identification of the Romanian project, Ukraine became a member of the World Bank and the scope of the project was amended to provide parallel support to the Ukrainian portion of the Danube Delta. Both projects aimed to raise the level of national and international interest in the protection and management of the whole Danube Delta area.

The global objective of the project was to protect and enhance the ecosystems and biodiversity of the Danube Delta within Romania. There were six components: strengthen the wardens' department of the Danube Delta Biosphere Reserve Authority; undertake ecosystem restoration of wetlands, fisheries and buffer zones; pilot restoration of polders to natural conditions and assist research into reed restoration; implement monitoring to provide the basis for the development of a natural resource management plan; raise public awareness and foster activities with community involvement; and coordinate the project with the GEF Ukrainian Danube Delta Biodiversity Project. It was originally anticipated that the European Bank for Reconstruction and Development would provide parallel financing to support socio-economic development in the Danube Delta based on tourism and some modest infrastructure components. However, following cancellation of the EBRD project, the community development activities of the GEF project also tried to incorporate natural resource-based economic activities.

The project objective was substantially achieved but with significant shortcomings and the outcome is rated as moderately satisfactory. Ecosystems were protected because the GEF project strengthened the capacity of the Danube Delta Biosphere Reserve Authority to implement effective regulation. The quality of the landscapes and biodiversity was enhanced through reclamation of abandoned polders and small-scale local improvements. However, the Reserve Authority gave almost no attention to ensuring sustainable livelihoods for the 14,300 residents of the Danube Delta when they privatized many of the common pool resources or changed traditional land management practices.

Overall institutional development impact is rated as modest notwithstanding the significant capacity-building within the Danube Delta Biosphere Reserve Authority and the Danube Delta National Institute. While it is positive that the management and regulation of the Reserve had been separated from science and conservation, there has been little progress with integrating the economic concerns of local residents within the reserve's management plan. Extensive public awareness is not the same as inclusion.

Sustainability is rated as likely. The Reserve Authority has enlarged and legally secured the integrity of the biosphere reserve. Budget support from the Ministry of Environment appears assured – even if less than required. Income generated within the reserve from licensing, reed cutting, fisheries leases and tourism fills some of the gap between the central budget contribution and total running costs. The Institute's growing

environmental consultancy work provides 40 percent of its income, and government budget support is assured. Exogenous factors give the Reserve and Institute high international visibility and the requirements for EU accessions and subsequent support almost guarantee its sustainability.

Overall Bank and Borrower performance is rated as satisfactory.

There are four lessons:

- Biodiversity conservation cannot be carried out in isolation. It has to be integrated within the economic interests of local and regional communities. Resentment is created when financing of nature conservation appears to have preference over unmet local needs, be it employment or delivery of basic services. Failure to integrate local interests in the conservation and management strategy of a biosphere reserve can endanger its longer-term sustainability.
- Conservation areas will be sustainable only if there is good management and sufficient funding. GEF project designers must help establish sound management and governance arrangements that include local stakeholders and promote income-generating activities. This is particularly important in biosphere reserves where people are as important as the flora and fauna being protected.
- When establishing biodiversity reserves, facilitate networking of the reserve staff with the national and international NGOs and promote recognition by international conventions. The benefits are two-fold. First, it provides a conduit for research funding. Second, it creates a supportive network.
- GEF should move towards a country-focused strategic approach to complement its thematically-driven development framework. By doing so GEF would develop synergy from a more coherent policy framework, thus improving effectiveness and reducing transaction costs for Romania.

Ajay Chhibber
Acting Director-General
Operations Evaluation

1. Background

1. Romania, with a population of 22 million, is the second-largest country in Central and Eastern Europe that initiated, in 1990, transition from a rigid, centrally planned and self-reliant command economy to a market economy. In an attempt to minimize the social costs of transition the Romanian government initially hesitated to impose tight fiscal constraints and privatize large loss-making enterprises; as a result, the economy continued to decline. Subsequently, attempts to impose macroeconomic stability without underlying reforms in the late 1990s led to negative economic growth, and poverty increased sharply, doubling from 20 percent in 1996 to 41 percent in 1999. Romania then became a pilot country for the Comprehensive Development Framework from 1999. National consultations revealed a clear consensus among Romanians that the country's twin development objectives should be reducing poverty and joining the EU.

2. The World Bank is Romania's largest creditor and Bank assistance to the country covers practically all areas of the economy. Main focal areas have been facilitating interregional trade, infrastructure rehabilitation, including mitigation of earthquake damage, transport, assistance to close down uneconomic extractive industries, and social programs including those directed at poor rural communities and urban street children. The Bank Group and GEF environmental portfolio in Romania, although modest in size, has become increasingly important because of the need to meet EU accession requirements on the environment prior to entry in 2007.

3. The Danube Delta Biodiversity Project (1994) was the first environmental project to enter the portfolio, followed by the Biodiversity Conservation Project for the forests of the Carpathians in 1999. Since 2001 three projects focusing on reducing pollution to the Danube River and the Black Sea and on increasing energy efficiency have been approved. Current Bank/IFC/GEF commitment is US\$257 million, most of which (US\$203 million) is for mitigation of the hazard imposed by mine drainage and tailings ponds.

4. The Danube Delta, an important wildlife habitat and economic resource shared between Ukraine and Romania, is the second largest wetland in Europe and, despite the attempts to commercially develop its land and water resources over the period 1950-90, remains remarkably intact.^{1,2} Romania's Sulina channel, straightened for shipping in the 1890s, provides the basis for important navigation and port activities, and commercial

1. The total area of the Danube Delta is 5,640 square kilometers of which about a fifth (1,220 square kilometers) lie in Ukraine, the rest in Romania. The Kiliya branch, the northernmost major distributary of the River Danube, conveys about 60 percent of the River Danube's annual discharge to the Black Sea and forms the boundary between Romania and Ukraine.

2. Reed harvesting for cellulose and pulp was a major activity in the 1950s. Polders were constructed to control water levels and encourage reed growth and eventually 160,000 ha was harvested. However, the heavy equipment destroyed the reed beds and production dropped from 200,000 tons/year to about 50,000 tons/year in the last decade. There then followed a phase of aquaculture (1960-1970s), followed by attempts to convert to agriculture in the 1980s. In February 1990 all state activities stopped. Personal communication: Mr. Virgil Munteanu.

fishing targets about a third of the 75 species of fish. Tourism is important accounting for over 100,000 visitors in 1991 – a marked decline from the 173,000 visitors in 1987.

5. The Danube Delta is an important wildlife habitat and has the largest number of birds of any South European wetland. Over 170 bird species breed in the Delta and it is a key area for passage of an additional 150 species of migrants and wintering birds. The total number of winter wildfowl may exceed two million. Exploitation for agriculture, pond fisheries and sand extraction and lack of sustainable resource management put the Delta's status as a wildlife habitat and economic resource at risk.³ Decline of fisheries allied with closure of many government ventures led to high unemployment. By the mid-1990s the population of the Romanian part of the Delta has declined by 30 percent, to an estimated 15,000 people.

6. In 1979 the Romanian government declared an international biosphere reserve and extended it in 1992 to cover 590,000 ha of the Delta, including 53,000 ha under strict protection, adjacent coastline and water bodies (Table 1). The biosphere concept followed UNESCO's Man and Biosphere Program in which a strictly protected area is surrounded by a buffer zone which in turn is surrounded by a transition zone that includes traditional land use, settlement and recreation, and limited economic activity. The idea is that endangered resources will be protected if the interests of the surrounding community and sustainable natural resource use are fully integrated under reserve management. Table 2 summarizes the sequence of institutional recognition and status of the transfrontier Danube Delta Biosphere Reserve.

Table 1: The composition of the Romanian Danube Delta Biosphere Reserve

Designation	Area, ha	Proportion of Total Area
Strictly Protected Core Area nature Reserves (18)	53,000	9%
Buffer Zones	333,200	56%
Marine Buffer Zone	103,000	17%
Agricultural polders, fish culture ponds, and silviculture	102,000	17%
Danube Delta Biosphere Reserve – Total Area	591,200	100%

7. The Danube Delta Biosphere Reserve Authority (DDBRA) was established as the main regulatory and management organization.⁴ A governmental decree also stopped all future reclamation works, banned sand mining and established a policy that gives priority to conservation in the Delta. At the start of the GEF project the Danube Delta accounted for more than half of all the nature reserve area in Romania.

3. One indication of this is the decrease in the catch of migratory (sturgeon, shad) and other fish (carp, pike, zander, bream), once a major resource. For example, the annual sturgeon catch has declined from 1,000 tons in the 1930s to the current 10 tons.

4. The functions and structure of the DDBRA were clarified in Law 82/1993, approved in December 1993.

Table 2: International institutional recognition of the transfrontier Danube Delta

COUNTRY	UNESCO BIOSPHERE RESERVE	WORLD HERITAGE SITE	RAMSAR WETLAND
Romania	Danube Delta Romania Biosphere Reserve created 1979 and extended in 1992. ⁵	Danube Delta (Romania 1991)	Danube Delta (Romania 1991)
Ukraine:	Ukrainian part (Dunainsky) added to make a transfrontier Biosphere Reserve in 1998.	Ukraine: Not yet recognized	Kyliiske Mouth (Ukraine 1995)

8. A team coordinated by the International Union for the Conservation of Nature (IUCN) sponsored the first International Danube Delta Biosphere Reserve Planning Seminar in September 1991. Apart from the interest this raised from a range of international organizations, bilateral donors, and environmental NGOs, the seminar also produced the components of a management plan including establishment of legal and administrative objectives, and conservation, socioeconomic, research and monitoring and public awareness objectives for improved Delta management. Support to develop the administrative framework and a management plan (including looking at local livelihoods) was provided through a small grant from the European Bank for Reconstruction and Development (EBRD).⁶ The GEF project was designed to complement EBRD's program by focusing on the technical aspects of biodiversity conservation and on protected area management.

2. The Project

9. The original Danube Delta GEF Project planned assistance only to the Romanian part of the delta. During the identification of the Romanian project, when Ukraine became a member of the Bank, it was decided to increase the scope of the GEF's support to cover the whole delta and raise the level of national and international interest in the protection and management of the area. A single project for the whole Danube Delta was considered but rejected as being impracticable given the widely differing institutions in the two countries. Thus the two projects were approved and implemented in parallel.

5. In 1979, an area of 18,145ha was internationally designated as Rosca-Letea Biosphere Reserve. An area of National Decree No. 983 with supporting Articles 5, and 6 on 27 August 1990 increase this area to 500,00 ha. This area was further enlarged to 547.000 ha in 1991.

6. It was expected that the EBRD grant would be followed by a ECU2.3 million loan to finance the headquarters building for DDBRA, a visitors' center and rangers' field posts. This did not happen.

OBJECTIVES

10. The GEF Trust Fund Agreement defined a very broad objective: to protect and enhance the ecosystems and biodiversity of the Danube Delta within Romania. This objective was to be achieved through six components (Table 3.)

11. Originally, the objective was more nuanced: “the project aims to protect and enhance the Romanian delta ecosystems, contributing to the conservation of biodiversity within the delta, strengthening the capacity of the DDBRA to manage protected areas effectively, and working with local community groups to ensure sustainable resource use. The project must also be seen in the context of three other GEF projects being developed in the region...and an objective of all three projects is to demonstrate the value of a coordinated approach to resolving water pollution and biodiversity problems with trans-border linkages.”⁷

Table 2: Project Components and Costs

<i>Components</i>	<i>Costs (US\$ million)</i>	
	<u>Planned</u>	<u>Actual</u>
1. Strengthening the institutional and operational capabilities of the Ecological Warden’s Department to improve its work in support of nature protection, nature surveys and interpretation, and public awareness, including technical assistance, training, housing, offices and park-related infrastructure, and equipment, vehicles and boats.	\$1.50	\$1.80
2. Carry out a monitoring program to provide the basis for development of resource management plans. Monitoring would include population species inventories, ecosystems surveys, hydrological monitoring, and development of an integrated database using a geographical information system.	\$0.65	\$1.14
3. Initiate ecosystems restoration covering lakes, establishment of village woodlots, willow planting, pilot fingerling protection, landscape enhancements, and establish a small grants fund to finance applied research to improve ecosystem and land zoning management.	\$1.17	\$0.81
4. Carry out of a pilot program of up to 60,000 ha for polder restoration to natural condition and of an applied research program for wetland reed restoration, including technical assistance, training, civil works and equipment.	\$0.57	\$0.27
5. Develop modalities for regional cooperation and coordination in Black Sea environmental programs and with the Ukrainian authorities involved in the protection and enhancement of ecosystems and biodiversity of the Danube Delta. Strengthen the capacity of the Danube Delta Biosphere Reserve Authority and Danube Delta Institute in procurement, financial management and program coordination.	\$0.19	\$0.24
6. Increase public awareness of, and community and local non-governmental organizations involvement in, ecological protection including training, equipment and materials, a visitor’s center, district exhibition centers and field observation posts.	\$0.16	\$0.24
Price and Physical contingencies	\$0.56	-
Total Project Cost	\$4.80	\$4.50

7. Final Executive Project Summary. September 14, 1993. The three other projects were: The Ukraine Danube Delta Biodiversity Project (GETGrant 28654), the UNDP/World Bank Environmental Programme for the Danube River Basin and the Black Sea Environmental Programme.

IMPLEMENTING ARRANGEMENTS

12. The executing agency was the Ministry of Waters, Forests and Environment Protection. (hereafter the MoE). At project initiation the Ministry's Department for Environmental Protection was responsible for management of the project through the Reserve Authority and the semi-autonomous Danube Delta Institute that undertakes research activities. Concerned that institutional weakness at the MoE would delay decision-making, the government agreed to decentralize management to the Reserve Authority without need of a specialized project management unit, thus building local skills and ownership, with the MoE maintaining a coordinating role. In addition to EBRD's inputs, other organizations were to help in the early years of the project to implement some of the GEF components through bilateral technical assistance given by the World Wildlife Fund (Germany), Birdlife International, the American Academy of Sciences (coordinating participation of American Universities) and the Dutch Rijkswaterstaat (RIZA).

IMPLEMENTATION

13. After the initial delay of six months awaiting effectiveness, implementation proceeded smoothly and the project closed on schedule. Soon afterwards, a cooperative agreement was drawn up between the Romanian Reserve Authority and the Ukrainian Danube Plavni Reserve Authority to facilitate exchange of information and joint activities between the two countries. Counterpart funding became an issue in 1998 (after the government imposed budgetary constraints and limits on recruitment), but this was resolved quite quickly. Even so, there was significant staff turnover (25 percent) because of the non-competitive public sector salaries. The Reserve Authority's unfamiliarity with the Bank's procurement requirements, allied with inattention to development of sound accounting and managerial procedures following the early termination of the EBRD support (para 8), created procurement problems such that a procurement specialist joined some of the later supervision missions.

3. Evaluation

Counterfactual

14. Without the project it was feared that the biodiversity of the Romanian portion of the delta would become increasingly threatened by illegal hunting and fishing driven by the relatively high levels of unemployment and poverty in the region. This would come about because the Reserve Authority had insufficient staff and resources to effectively regulate, access and license the biosphere reserve, and because there were substantial areas of administrative overlap among the Reserve Authority, the Tulchea Prefecture and the Environmental Protection Agency.

15. It was also believed that, without the GEF grant, interest in the delta would languish. Romania politicians regarded environmental conservation in the early 1990s as an

unaffordable luxury given the more immediate economic and political issues, and the need to generate employment and sustain basic services (para 1). And while there was considerable external NGO interest in working on Danube Delta biodiversity and related research, few would commit to working with the Reserve Authority given its uncertain future and funding. Thus without GEF grant support it was feared that the Reserve Authority would be isolated from the European conservation mainstream and the international conservationist NGO community.

Monitoring and Evaluation

16. Great attention was given to enhancing the monitoring, evaluation and mapping of the reserve's land, biodiversity and aquatic resources, including dealing with a large backlog of observations and establishing appropriate databases. Less attention was given in by the GEF to M&E systems for strategic planning and management. .

17. The level of biodiversity monitoring and evaluation was brought to international standards with the assistance of a number of international and local NGOs (e.g., WWF, Bird Life International, the Romanian Ornithological Society and others). The standards adopted comply with the Bank's guidelines for biodiversity projects.⁸ Evens so, the absence of a comprehensive baseline at the start of the project means that success cannot be fully assessed. Consequently they have to be inferred from partial data of differing standards.

OUTCOME

18. **The outcome of the GEF Danube Delta Biodiversity Project is rated moderately satisfactory at the time of this evaluation.** This rating is based on disaggregation of the objective according to Table 4 and the individual ratings for how far the project protected or enhanced ecosystems and diversity (Table 5).⁹

RELEVANCE

19. **Overall relevance was high at appraisal and remains high.**

20. The project was consistent with the GEF Operational Strategy and the Short Term Response Measures under the Operational Strategy, in that this GEF intervention addressed urgent needs associated with the transition, which, since 1989, had resulted in increasing threats to biodiversity.

21. GEF's principal rationale for the project was that it would protect biodiversity and improve the management of international waters. Categorized as a GEF Type-2

8. World Bank. Guidelines for Monitoring and Evaluation for Biodiversity Projects. Environment Department Papers. No. 065, June 1998.

9. The ECA Region staff disagree with OED's outcome rating: "The stated basis for downgrading Outcomes is insufficient attention to local economic development, and for Institutional Development it is insufficient inclusiveness/local participation in Reserve management. However, neither of these elements were included in the project's stated objectives, as they were to be addressed through a parallel EBRD project, which was later cancelled. Local economic development was not a stated objective of the project."

intervention, the project support enabled the Government of Romania to realize important global benefits from activities which have insufficient national benefits to rank in domestic priorities. The Romanian Danube Delta Biodiversity Project was designed as a pilot for a broader regional initiative with two other GEF regional projects, one for the Danube River basin and one for the Black Sea, to synergize the effectiveness of GEF interventions.¹⁰

Table 4: Evaluation Matrix – Relationship of Objectives to Components

	Ecosystems	Biodiversity
Protect	1. Strengthening the institutional and operational capabilities of the Ecological Warden's Department 2. Carry out a monitoring program 5(a). Improve regional cooperation and coordination in Black Sea environmental programs 5(b). Strengthen the capacity of the DDBRA and DDI in procurement, financial management and program coordination 6. Increase public awareness and involve community and local non-governmental organizations in ecological protection	<i>(by inference, protecting ecosystems will also protect their biodiversity)</i>
Enhance	3(a). Initiate ecosystems restoration 3(b). Establish a small grants fund to finance applied research to improve ecosystem and land zoning management 4. Carry out of a pilot program of up to 60,000 ha for polder restoration	

Table 5: How the Outcome Rating was Derived

<i>Objectives</i>	<i>Relative Importance</i>	<i>Relevance</i>	<i>Efficacy</i>	<i>Efficiency</i>	<i>OUTCOME</i>
1. Protect ecosystems and thus their biodiversity	1	High	Substantial	Substantial	Satisfactory
2. Enhance ecosystems and thus biodiversity	2	High	Moderate	Moderate	Moderately unsatisfactory
<i>Overall ratings</i>		<i>High</i>	<i>Substantial</i>	<i>Substantial</i>	<i>Moderately Satisfactory</i>

22. Further indicating ownership and relevance, the Government of Romania ratified most relevant international conventions related to the environment.¹¹

10. The Danube River basin project has attracted funding of US\$56.7 millions and focuses on preparation of an action plan, improved river basin management, a regional environmental survey, an inventory of biological resources, strengthening monitoring, data management, and applied research. The Black Sea program, for US\$9.3 millions, has as its objectives reversal of environmental degradation of the Black Sea, and rational natural resource management, development of a pilot pollutant monitoring program, database, policy and legislative enhancement, preparation of investment proposals, and donor mobilization.

11. Biodiversity Convention (Rio de Janeiro), implemented by Law No. 58 of 1994; Convention for the Conservation of European Wildlife and Natural Habitats (Bern), implemented by Law No. 13 of 1993; Convention on the Prevention of Marine Pollution (London), implemented by Law No. 6 of 1993; Convention on the Protection of World Cultural and Natural Heritage (Paris), implemented by Law No. 187 of 1990; Convention on Wetlands of

Subsequently, the project implemented priority actions identified in the National Biodiversity Conservation Strategy and Action Plan (1996).¹² Its focus, specifically on *in situ* conservation, supports implementation of Article 8 of the Convention on Biological Diversity through strengthening support for protected areas and sustainable use in adjacent buffer zones. The project is consistent with Agenda 21 and guidance from the Conference of the Parties since it promoted conservation, management and sustainable use of wetland ecosystems, which include endemic species; involved local communities and build partnerships at local, national and regional levels; and promoted cost effective measures to conserve biodiversity.

23. The objectives of the project are currently relevant. Enhancing the ecosystems by removing derelict infrastructure and returning it to nature increased tourism potential and thus local incomes. The view of most government and other Romanian stakeholders interviewed by OED was that the project's capacity-building substantially contributed to the general knowledge and scientific and managerial networking on environment and underpinned Romania's ability to address the sort of imperatives critical to EU accession.

EFFICACY

Overall efficacy is rated as substantial taking into account the relative importance of objectives and their level of achievement.

Objective 1: Ecosystems were protected: the GEF project strengthened the capacity of the Danube Delta Biosphere Reserve Authority to protect ecosystems

24. **Regulation of fishing appears to be protecting resources.** Enhanced policing of fisheries has halted the declining yield of freshwater fish (Figure 1.) Between 1969 and 1990 the annual harvest of freshwater fish plummeted from about 11,000 tons to 4,500 tons due to over-fishing, water pollution and the building of dams on the River Danube that prevented seasonal migration to spawn. This downward trend continued until 1996, when the Reserve Authority started paying serious attention to regulation, and production stabilized.¹³

25. The rapidly diminishing catch of sturgeon was a particular concern at appraisal because recorded catches in 1989 (20 tons) were 90 percent below the 1960 harvests (250 tons) and sturgeon were listed as an endangered species under CITES in 1998.¹⁴ While the

International Importance Especially as Habitat for Waterfowl (RAMSAR), implemented by Law No. 5 of 1991; and the Convention for the Conservation of Wild Migratory Species (Bonn), implemented by Law No.13 of 1998.

12. The top three priorities of the National Biodiversity Conservation Strategy are: (i) development of the legal framework and strengthening the institutional capacity for conservation of biological diversity; (ii) organization of the national systems of protected areas, and (iii) in-situ and ex-situ conservation of threatened, endemic and/or rare species, and those with a high economic value.

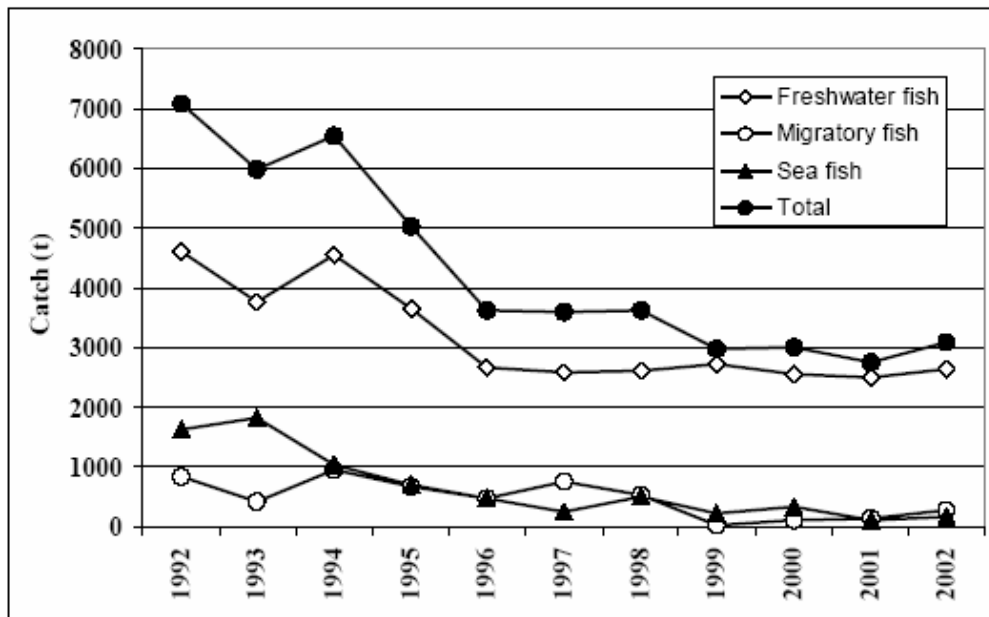
13. Bell, Sandra. 2004. *Integrated Management of European Wetlands*. A Project of the European Commission's Fifth Framework Programme (Contract # EVK2-CT2000-22001), contributing to the implementation of the Key Action "Towards Sustainability" within Energy, Environment and Sustainable Development. The research, initiated in 2001, covered wetlands in four countries: Finland, Greece, Lithuania and Romania (the Danube Delta).

14. Ministry of Agriculture Order No. 350/2001. CITES (the 1966 Convention on International Trade in Endangered Species of Wild Fauna and Flora) is an international agreement between Governments. Its aim is to ensure that international trade in specimens of wild animals and plants does not threaten their survival.

project's proposal to establish a fish-breeding center to rejuvenate stocks was abandoned after research indicated that it was infeasible, monitoring established by the Institute has led to improvements in the regulation of sturgeon fisheries. Prior to 2002, weight-based sturgeon quotas led to a predominance of small fish in measured catches. After research demonstrated a correlation between weight, age and size, the CITES Secretariat accepted the Institute's recommendation that sturgeon quotas be set by weight and size. As a result, in 2003 larger beluga and stellate sturgeons were caught increasing the proportion of third-time spawners to more than 50 percent. Conversely, it was found that Russian sturgeons were heavily over-fished and the quota for 2003 was cut by 83 percent.^{15, 16}

26. Because much of the baseline information was absent in the early 1990s the impact of improved protection and ecosystem enhancement on biodiversity is almost impossible to determine. Certainly the scientific research assisted by the project produce a quantum-leap in knowledge of the species of flora and fauna occupying the Delta (Table 6). Also the few available time series derived from monitoring indicate that the occurrence of some species has risen dramatically (Figure 2.) Samples from the Martinca bird colony show there is an overall improvement with some contractions in 2003 due to drought and low water levels (Table 7.)

Figure 1: The decline in fish harvest has been halted



Source: Bell *op cit.* 2004 (93).

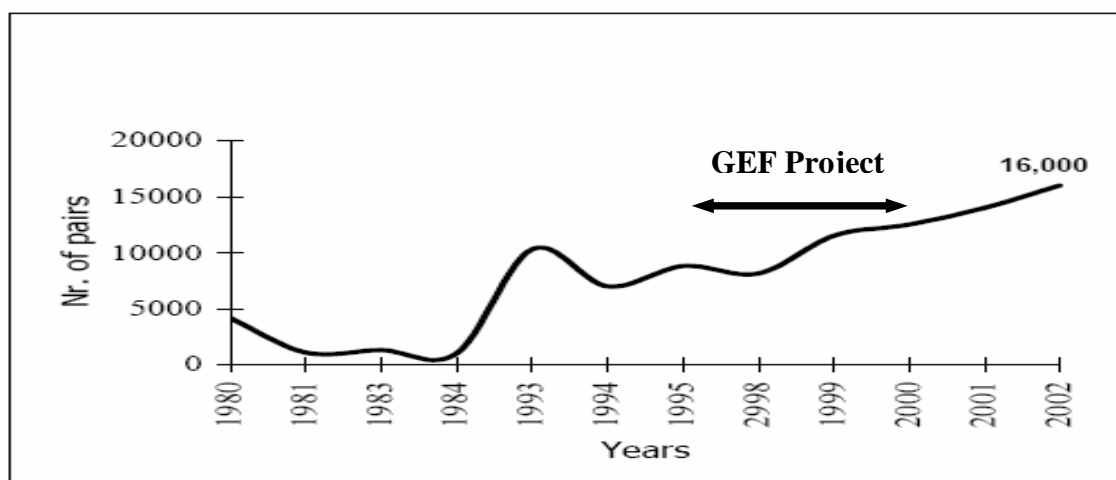
15. There were no male Russian sturgeon and no first-time female spawners (9-11 years old). First-time female beluga spawners are 14- 15 years old, second-time 17-19 years, third-time 19-22 years, and fourth-time 23-24 years. Stellate sturgeons have the same spawning cycles but start about 6 years earlier.

16. Suci, Radu, M. Paraschiv and M. Suci. 2004. *Monitoring Of Biological Characteristics Of Adult Sturgeons Captured In The Danube River And Effective Management Rules*. Proceedings of the Deltas and Wetlands Scientific Symposium, Tulcea, Romania 2003. Scientific Annals of the Danube Delta Institute. 2003-04. Vol 10.

Table 6: Knowledge on the Delta's Biodiversity Significantly Increased 1990-2004

	Total in the Reserve	Newly Recorded	New to Romania	New to Science
Flora	1,668	277	28	1
Fauna	3,846	1,921	267	37
Birds				
	Total in the Reserve	Protected by the Bern Convention	Declared Nature Monuments	
	325	202	9	

Source: Danube Delta Institute, 2004.

Figure 2: The Danube Delta Great Cormorant population has recovered**Table 7: As have other bird species**

Bird Species	2001	2002	2003
	(pairs)	(pairs)	(pairs)
Great Cormorant	1000	800	500
Pygmy Cormorant	500	400	600
Black-crowned Night Heron	250	100	400
Squacco Heron	50	30	300
Little Egret	200	150	600
Grey Heron	12	30	10
Glossy Ibis	50	100	200
Spoonbill	3	2	4

Source: Figure 2 and Table 5 from Bell *op. cit.* 2004 (88-89)

27. The Pelican, symbol of the Reserve, have increased also over the last decade. Great White pelicans increased from 3,000 to 3,500 pairs, and Dalmation Pelicans – the third largest colony in Europe - from 300 to 400 pairs in 2003. But in 2004, erosion of nesting sites caused many birds to move temporarily to Bulgaria, a move reversed once

their habitat was restored by the international NGO community.¹⁷ Most of these improvements are the result of improved capacity of the Reserve Authority and Institute facilitated through the GEF project.

28. **The GEF grant contributed towards building the capacity to implement sound biosphere management during the period when the Danube Delta Biosphere Reserve Authority was increasing its control over the reserve area.** National and local legitimacy is high because the Governor of the Reserve Authority is appointed by the Romanian Government at the proposal of the MoE subject to approval of the Tulcea Prefect and the Academy of Science. The Reserve Authority effectively regulates all access to the strictly protected core and, in consultation with its governing Scientific Council that includes all the other organizations involved in the reserve (local authorities, ministries, health services, research institutions, Romanian Academy of Science, economic companies, etc.), it has a major role in approving economic activities in the buffer zones and economic areas. In 2000, the legal framework of the authority was modified to harmonize its role with the national Environmental Protection Agency.¹⁸ And it is expected that an additional 94,000 ha of County Council public lands will be transferred soon to the Reserve Authority.

29. The Reserve Authority also has the right to establish its own local regulations concerning waste disposal, pollution prevention, access, resource use and related matters within the reserve. And since 1997 the Reserve Authority had the authority to establish fish quotas, species-specific open and closed seasons, and to regulate all fishing with the reserve area. This was reaffirmed in 2001 when Parliament also approved laws establishing allowable fishing gears and penalties for infringement of regulations. In 2002, the Reserve Authority was further empowered to lease out medium-term fishing rights in consultation with the County Council.¹⁹ By the same legislation, the Ministry further ordered restriction on the hunting of all water bird and transitory species within the reserve.

30. **Staff of the Reserve Authority and the Danube Delta Institute benefited from extensive overseas and in-country training that brought them into the mainstream of the European and international conservation community.**²⁰ This also allowed foreign wetlands management specialists and NGOs access to the Danube Delta, contributing to capacity and network-building and a better understanding of international wetland management practice. In addition to extensive English language training, scientists received technical training that ranged from wetlands management and restoration to bio-business workshops and management of protected areas, and also included participation in a number of international workshops on wetlands. Some of this training was provided by the project, but there were substantive inputs from RIZA, WWF, BirdLife and through USAID-sponsored geographic information systems (GIS) training specialists.

17. The Romanian Ornithological Society. Newsletter. November 30, 2004.

18. Ordinance 112/2000.

19. Ministry of Agriculture, Forest Waters and Environment Order 637/September 2003.

20. In 2004, the Reserve Authority had 120 members of staff; the Danube Delta Institute had 116.

31. As a result of the training and networking, staff of the Institute are now better able to define the biosphere and its resources. Importantly, baseline surveys and subsequent monitoring and evaluation have not only provided basic management data, but have also helped to define the strategy adopted by the management plan for the reserve. Project funding and partner international NGOs facilitated training and participation in conferences, efforts that led to more efficient ways of data analysis and dissemination and the use of feedback to improve research and database methodology. Institute staff have also published 28 books (15 internationally), and over 310 papers, 70 of them internationally.

32. **The establishment of the GIS center enabled successful integration of hydrological, spatial and ecosystem information and increased productivity.** The major contribution of the project was to provide basic equipment (computers, software, and email) that enabled reserve staff to apply their research skills more effectively and develop closer contact with scientists abroad the global community of scientists. Among the many notable achievements the Reserve Authority and the Institute, in association with the Ukrainian Danube Plavni Reserve Authority and assisted by the Netherlands, produced in 2002 the first transboundary vegetation map of the whole Danube Delta.²¹ And within the reserve, the integration of ecological and fisheries data with geographical information led to identification and validation of 30 ecosystems. This in turn led to the designation of 25 fishing sub-areas within the delta that allowed fine-tuning of resource management and regulatory activities. Thus the GIS facility not only increased the Institute's and Reserve Authority's ability to better present and publicize their activities but it also supported development of paid contact work that enhances sustainability of the Institute (para 57).

33. Recognizing the marked improvement in the capability of the Danube Delta Institute, the government significantly expanded its mandate in 1999 and renamed it the Danube Delta National Institute. Thus it is now authorized to "undertake scientific research supporting implementation of national policies and international conventions related to biodiversity conservation and sustainable development in the Danube Delta and other wetlands of conservation interest."²²

34. **The project contributed to the regulation of the Reserve through training of wardens and publicity – but not as planned.** The number of wardens fell short of the targets set at appraisal – only 89 of the 152 planned being in-post at the end of the project. However, the regulatory set-up has evolved considerably with a marked shifting of the regulatory burden from the Reserve Authority to national and local environmental and police authorities. And to facilitate this switch 54 Reserve wardens - and their boats and equipment provided by the project - were transferred to become Ecological Guards under a new National Security Authority under the Prime Minister's Office. The remaining 35 wardens, now called '*Rangers*,' are now local reserve managers rather than regulators: their main tasks are managing visitors' centers, ecological monitoring and guiding visitors and tourists.

21. Directorate-General for Public Works and Water Management (RIZA), the Netherlands. 2002. Vegetation of the Biosphere Reserve "Danube Delta." RIZA Report 2002-049, December 2002.

22. Romanian Government Decision No. 409/1999.

35. Independent evaluation financed by the European Union indicates that the new regulatory set up, confusing to locals, is effective in guarding access to the reserve area and its resources – although corruption may be an issue (Box 1).

36. Tending to be only school leavers, all the wardens were put through induction and foundation courses covering reserve management and regulation. Two wardens participated in staff exchange programs with, and six undertook study tours of, similar reserves in Europe. A general Wardens' Training Manual was produced and 12 specific District Manuals were created taking into account specific ecosystems and issues to be followed in each area. Training was also provided on-the-job, and for staff from the Ukrainian Danube Plavni Reserve – the latter under a collaborative agreement under which Romanian staff also received reciprocal training in Ukraine.

Box 1: The Public's View Of Romania's Danube Delta Regulatory Bodies

“Using boats, the **Frontier Police** patrol the borders between Romania and the Ukraine — 30km inside the border and 10km each side of the Sulina Canal. Their distinct role in connection with natural resources is working to combat black market fishing and distribution at local level. A Frontier Police interviewee defined his role as fighting illegal fishing, illegal hunting, poaching and pollution. The Frontier Police are often thought to be corrupt. It is commonly said that they overlook many offences and see themselves as too poorly paid to carry out their duties as intended. The **Delta Police** are often referred to as the **County Police** or just the **Police**. Some interviewees thought that the Delta Police have nothing to do with fishing regulation. Others thought of them as responsible for issuing fines to poachers. Generally, the Delta Police were perceived to be less involved with fishing patrol than the Frontier Police. The **Environment Guard** is a different body from the **County Environment Inspection Agency**, but both were referred to as the same organisation in many interviews, as well as being labelled ‘ecologists’. The County Environmental Protection Agency (known until 2004 as the County Inspectorate) works for the Ministry of Environment and Water Management. It is responsible for ensuring that environmental authorisations are adhered to. The Environment Guard is a kind of ‘ecology department’ working under the authority of the National Control Authority (which also controls the Frontier Police and Custom House). Guard employees are expected to check that the Inspection Agency's authorisations are not defied in practice. The Guard and the Inspection Agency both work to monitor pollution and damage to the Delta, but are sometimes involved in noting illegal fishing activities. Although the **Rangers** are officially part of the DDBRA, they are talked of as a separate institution. Rangers patrol and control the fishing areas, being directly involved in preventing fish capture for sale on the black market. A DDBRA employee suggested that the role of the Rangers has recently changed. He maintained that they have become less involved in direct patrol because the Frontier Police (also dubbed the Army) and the County Police have ‘*got the power to make decisions...The Danube Delta is better guarded than the prison*’ (Romanian interview SSI 7). All these regulatory bodies, especially the police and rangers, were referred to as corrupt in a number of interviews.”

Source: Bell 2004 (38) Based on 51 interviews over 2001-04 with 60 people living in the delta.

37. **Public awareness was addressed very late in the project but appears to be effective.** Supervision reports indicate that the Reserve Authority and the Institute dragged their feet on this component despite the active and effective involvement of three local NGOs under the project.²³ Much of the delay was the result of entrenched attitudes

23. These NGOs were: ProDelta that works throughout the Delta with village and school groups to develop a better understanding of the resources, zoning and need for conservation; ECOs that works with teenage groups on developing community involvement; and the Romanian Ornithological Society (supported by BirdLife) that works on community involvement.

and a top-down management style. However, following Bank recommendations the Reserve Authority contracted technical assistance from Fauna and Floral International in 1999 to assist them in developing a public awareness strategy – the first such strategy developed in Romania.²⁴ Judging from OED’s observations in Romania and independent evaluation, this comprehensive and outcome targeted awareness strategy remains partially adopted.

38. Publicity material and signboards describing the Reserve Authority’s purpose, strict reserve areas, maps, postcards and posters are plentiful in Tulcea and in the three other visitors’ centers (Uzlina, Crisan (1995), Sulina (1999) and Tulcea 2000). There is a web site and the Tulcea visitors’ center undertakes significant awareness-raising activities aimed at all age groups.²⁵ Starting in 1999, for example, ten local teachers were made aware of the Reserve Authority’s activities by BirdLife and each one implemented a pilot ecological project in their school – this program continues. Rangers also visit local schools and distribute booklets and folders with plants and animals from the Delta. Special books were produced including: the *Practical Handbook for Environmental Education (2000)*, the *Practical Handbook for Environmental Education- for Kindergarten (2002)* and the *Children’s Newspaper “Micii Ecologisti”* that by 2004 had published two editions containing drawings, pictures, and essays produced by children. And there are periodic events for children and teenagers: “*Environment Day*,” “*International Day of Water*”, and “*The International Day of Wetlands*.”

39. **Hunting remains a threat to the Reserve even though it is regulated.** To raise revenue for social programs the County Council has organized shoots over 77,000 ha of public lands within the economic zones of the Reserve.²⁶ While this is not meant to affect the strictly protected areas and buffer zones, it does in practice. Strictly protected areas and their buffer zones are generally enclaves within the economic zones. Thus birds flying from one protected area to another may have to transit an economic zone and risk being shot – and the Governor of the Reserve is reported to have said that bird numbers are decreasing as a result.²⁷ In 2002 Parliament passed a new Hunting Law forbidding hunting in national parks, nature reserves and strictly protected areas but the Danube Delta Biosphere Reserve, because of it was a “one-off” creation outside the normal national system nature reserves, is not on the prohibited area list. The MoE is aware of the issue and tried in 2002 to introduce a three-year species-specific ban on hunting in the Reserve – because of the emphasis in government on productive rather than protective land use, the ban applied only to migratory birds and lasted for four months. More recently a national mechanism for issuing 10-year hunting contracts against quotas set by the MoE was agreed but insufficient field staff preclude effective regulation (and most of

24. Ministry of Water, Forests and Environmental Protection. 2004. Danube Delta Biosphere Reserve Authority – Public Awareness Strategy. 65pp.

25. During OED’s visit to the Reserve Authority the public awareness center’s activities were as follows. October 20: a group of 25 10-year old children from a local school attended a video and discussion about the reserve and conservation; October 21: a group of 23 High School students average age 16 years; October 22: visiting delegation from the EU (Denmark, Germany, Norway and Belgium).

26. The annual income from hunting is reportedly Lei 30 billion (US\$1.24 million or \$16/ha).

27. Personal Communication. Professor Vadineau, University of Bucharest. October 26, 2005.

these staff are low-paid salaried women with no transport). Even then, hunting is not the only cause of bird mortality: parts of the Delta are crossed by redundant high tension lines that have yet to be removed.

Objective 2: Ecosystems and biodiversity was enhanced by the project but there was a significant shortcoming—people’s livelihoods were ignored.

40. **Protection and enhancement of the Reserve has not been universally approved – particularly by those people earning the livelihoods in the Delta.** Many people feel marginalized by the emphasis on nature protection and some argue that reduced water levels and predation by an increasing number of birds have further decreased fish stocks. This adds to their concerns that management of the fisheries by the Reserve Authority is inequitable (paras 58-59). Research indicates that Great Cormorants and Great White pelicans alone probably consume almost 9,000 tons/year compared with the official freshwater catch of only 2,500 tons.²⁸ Given that Great Cormorant numbers have doubled since the mid 1990s, it could be inferred that the establishment of the biosphere reserve has reduced the potential in 2003 by about 2,000 tons/year from just this one species. Thus local concerns about adverse impacts of biodiversity protection on their livelihoods seem to be justified.

41. **Local people also think the Reserve Authority’s reed bed management practice was counterproductive.** Reed beds cover almost a third of the Reserve area and are the third most important commercial resource in the area after fisheries and agriculture.²⁹ In 2004, the Reserve Authority licensed seven reed bed to private companies for harvesting, the remaining five being offered to locals on a yet to be determined basis. Authorized management practice, introduced by the Reserve Authority, does not allow annual reed bed burning and there is a strong view among locals (Box 2) and some environmentalists that this is counterproductive.³⁰

42. **Enhancement of the land resources, flora and fauna was more successful.** The principle contribution of the project, in addition to protection, was assistance to design and manage improved water circulation to improve ecological conditions. And improved ecological conditions were generally beneficial for biodiversity. Some of the positive impacts on fish, flora and fauna populations have already been presented (paras 24-27). Generally positive impacts were achieved by returning agricultural and fish polders to wetlands, reducing entry of silt into naturally clear lakes and modifying the flow of water through the Delta after simulating the likely effects of interventions using a hydraulic model developed through the project.

43. Of the planned 8,050 ha of polder restoration, only 3,060 was restored during the project because disputes over land ownership of the agricultural polders slowed the

28. Summarized in Bell *op. cit.* 2004 (91-95).

29. Reed bed area varies from year-to-year. In 2003 they covered 170,000 ha and reed bed products (straw for thatching/export, fodder) was worth about US\$1.5 million a year in 2002.

30. The ECA region staff disputes OED’s finding: “It seems highly unlikely that an unnatural process of annual burning would be essential for maintaining a natural ecosystem, so such a contention would have to be backed up by data to be credible.”

work. However, the restoration work continued and 7,280 ha had been completed by 2003 and an additional 2,115 ha were under implementation.³¹

Box 2: Traditional reed bed management has been abandoned and biodiversity is reduced

Traditional methods of wetland management involved burning the reed in winter to allow for more vigorous new growth in spring when ‘young’ reed is cut and dried to provide animal fodder for winter. In most villages hay meadows are either insufficient or altogether absent, as is sufficient agricultural land to grow maize for fodder. Tending and harvesting the young reed is therefore important for animal husbandry, even at primary subsistence level. There are however, what local people consider important ecological benefits to accrue from reed burning, a practice nowadays prohibited by the regulations of the DDBRA: *‘Prior to 1989 the water was clean and the channels were clean. In winter and early spring people burnt the reed from the bank and the floating reed islets (plaur). When fish spawned the water ways were clear... This is a most important thing not only for fish but for vegetation too’* (40-year-old fisherman Mila 23). During a focus group four young fishermen from Crisan village became extremely vexed over the question of reed burning. They signalled enthusiastic agreement to this statement by one of them. *‘Since it began the DDBRA has caused mostly harm. They do not allow the burning of reed. When the reed is burnt it regenerates the fish and birds and everything else. Otherwise during the summer the water becomes foul.’*

Source: Bell *op. cit.* 2004 (62) based on 51 interviews with 60 people.

44. Research on the 5,630 ha Holbina-Dunavat fishpolder clearly demonstrated that the eutrophication process is far more complex than expected and that, while shallower water depths may encourage reed growth and sequestration of phosphate, the changes to the ecosystem may have a number of costs for local livelihoods.^{32, 33} Thus the resultant restoration strategy urged discussion with all stakeholders to decide on acceptable trade-offs between economic and ecological benefits. Elsewhere, NGOs and the Institute used the project’s small grants program to pilot community and local activities including woodlot management, medicinal herbs, handicrafts and eco-tourism. Outcomes and impacts of these activities are not available.

45. Ex-post monitoring by the Institute staff of the project’s 3,600 ha pilot restoration of the Babina and Cernovca agricultural polders demonstrate significant environmental and financial benefits (Table 8.)

EFFICIENCY

46. **Overall, efficiency is rated as substantial.** A formal economic rate of return was not estimated at either appraisal or completion and efficiency is rated on cost-

31. Babina agricultural polder 2,100 ha (1994); Cernovca agricultural polder 1,580 ha (1996); Popina fish polder 3,600 ha (2000); and Fortuna agricultural polder 2,115 ha (2002-ongoing.)

32. Drost, H.J., D. Bos and M. Tudor. 2002. *Research For Ecological Restoration In The Dunavat-Dranov Region, Danube Delta*. Report No. 2002.188x, Lelystad. Danube Delta Institute and the Institute for Inland Water Management and Waste Water Treatment (RIZA), the Netherlands.

33. The ECA Region staff question this statement: “The fact is, that the polder restoration component gave big benefits (in terms of increased fish catch, for example) to local people, in addition to the environment benefits, and this is documented in the project files. Also, the ecosystem restoration component (for example, the woodlots for fire for local people, or the small grants to develop pilots for alternative occupations in the Danube Delta) benefited the local people.”

effectiveness. Efforts to improve the capacity and elevate the status of the Reserve Authority, accounting for 76 percent of project costs, were conducted efficiently primarily because of the high degree of coordination among the principal actors (the Reserve Authority, government, national and international NGOs, and RIZA) and agreement on well-defined objectives. The efficiency of the restoration component is rated as high because successful restoration was achieved at about half the estimated cost.³⁴ And it also appears to be financially efficient based on the results from Babina and Cernovca agricultural polders (Table 8.)

Table 8: Ecosystem rehabilitation produces environmental and financial benefits

Ecological Improvements	Productivity improvements and their value		
Nutrient Removal	Research, design and construction	Sum	€100,000
15 kg Phosphorous/ha/year			
333 kg Nitrogen/ha/year	Fish production 34 kg/ha/year	€0.5/kg	€60,000
Sediment Retention	Reed Harvest 1 ton/ha/year	€16/ton	€60,000
11 tons/ha/year	Pasture 100 ha /0.5 cattle/year	€ 2/kg	€10,000
Improved habitat for birds and fish	Tourism 10 tourist/10 days/year	€10/day	€10,000
Improved aesthetic value	Total per year		€140,000
Water storage	Net annual benefits over 10 years		+€130,000

INSTITUTIONAL DEVELOPMENT IMPACT

47. **Overall, institutional development impact is rated as modest.** The project supported creation of a technically viable Reserve Authority with enhanced legal authority to implement its mandate to protect and conserve biodiversity in the Danube Delta. From being relatively unknown, in fewer than six years the Danube Delta Biosphere Reserve has become internationally recognized and supported. Additionally, strong links have been created and maintained with national and international NGOs, pan-European organizations, bilateral donors interested in promoting wetlands and biodiversity and the Ukraine Danube Plavni Reserve.

48. The governance structure clearly separates management of the Reserve and regulation from the science and conservation functions. It is certainly a good model for the Ukraine's Danube Plavni Reserve Authority.

49. **However, one aspect of institutional development, participatory management, is rated modest at best.** Participatory management was not a specific project objective because the EBRD grant was supposed to cover this aspect. It is clear, however, after EBRD withdrew their support, that it became a major component of the Reserve Authority's Public Awareness Strategy in 2000 (para 37.) Revealingly, comments presented by the Governor of the Reserve Authority to the International School for Advanced Studies (Italy) in 2004 reiterated the recommendations of the 2000

34. At appraisal it was estimated that restoration of 8,050 ha would cost US\$0.57 million or US\$70/ha. By the end of the project 7,280 ha was restored at a cost of US\$0.27 million or US\$32/ha.

Strategy - but reported no progress.³⁵ And the failure to move towards a more inclusive management policy may jeopardize the Reserve's biosphere status. Even so, Authorities in both Romania and Ukraine have a similar problem – an inherited communist culture fails to recognize that local people could help them manage the Reserve more effectively, and a passive acceptance by local people of their position (para 51.)

50. People living in the Delta were found to be more highly motivated (than those in the other EU study-countries) about changing the environment for the better through a mix of changes for people and for nature – and this appears to be driven by environmental concerns that affect local livelihoods. One notable regulatory failing observed by OED is that discarded trash³⁶ and water pollution disfigure the waterways. When Bell disaggregated her findings she found adults, teachers and young adults all put general pollution as their most significant concern. The second concern among the teachers and adults was illegal fishing and poaching; young adults citing water pollution. And while teachers and young adults identified illegal fishing, farming and water pollution as third in importance, adults named water pollution. (Bell 2004, *op cit* (122)).

51. **The evidence suggests that while public awareness activities are well-targeted, people do not feel empowered to participate in environmental management.** In-depth interviews and focal group discussions reported by Bell (2004 *op cit* (127)) led her to conclude: “Education seemed to be slightly more important in influencing the concern of Romanian adults than for adults in the other three countries. Experience in connection with other people, rather than taken in solitude seemed to be memorable for Romania. No Romanian adults mentioned the wider media; famous personalities, participation, relaxation and solitude as important influence.” And “Organisations were most important in Romania; this finding ties in with the evidence that Romanians seemed to engage in environmental action under the guidance or leadership of others” and not through their own actions. In most respects these attitudes reflect the continuance of the former communist ideology in which individuals looked to the state for leadership – such attitudes and are almost identical to found in the Ukrainian part of the Delta.

52. **The Danube Delta Biosphere Reserve is only partially managed according to the principles of UNESCO's Biosphere Reserve policy – 25 years after initiation (Table 9.)** Resource management by the Reserve Authority has effectively privatized the main economic activities in the Delta and marginalized local people who relied on its natural resources.³⁷ At the same time the Reserve Authority time is paying little attention

35. Munteanu, Vergil. 2004. *The Role Of Communication And Public Awareness In The Integrated Management Within The Danube Delta Biosphere Reserve Authority*. Journal of Science Communication. 3(3), September 2004.

36. Mostly left by visiting Romanian fishermen, not local people.

37. The ECA Region staff disagree with OED's findings: “Before 1990 fishing and reed harvesting were done by state companies and fishermen were just employees of these state companies, being paid a ridiculously low price/Kg fish, which encouraged overfishing; during the 1995s - early 2000s, there were a limited number of professional licensed fishermen, and only those were allowed to fish commercially and sell to several private collection points; recently, most of the Delta resources have been concessioned / leased to private investing companies - and this, because of better guarding of their areas and because of

to alternative sources of income for the 14,295 Delta residents living in the 26 settlements within the reserve, many of them accessible only by water or poorly-maintained roads.

53. **Government support for the environment is fickle.** The importance and resources allocated to environmental policy and management in Bucharest, while fairly constant during the life of the project, has been subsequently highly variable. Thus important and progressive environmental legislation enacted up until 2003 has not been monitored and enforced because of limited capacity at the central and local levels (e.g. see para 37). After the Ministry of Water, Forests and Environmental Protection had its forest department transferred to the Ministry of Agriculture it was completely absorbed as a department within the Ministry of Agriculture and Forests in June 2003. And in February 2004 it reemerged as the Ministry of Environment and Water but with the loss of many key staff and a reduced budget. Meanwhile its senior staff spent most of their time changing the legal framework to give them legitimacy and little practical work was done. Given that much of the funding for environmental management and improvement is from multiple external sources, balancing competing demands and ensuring sector coordination is now a major issue.

Table 9: UNESCO's principles of Biosphere management are only partially addressed

<i>Definition: A biosphere reserve is a unique concept which includes one or more protected areas and surrounding lands that are managed to combine both conservation and sustainable use of natural resources.</i>	
<i>Principles</i>	<i>Current Status</i>
Each biosphere reserve conserves examples of characteristic ecosystems of one of the world's natural regions, managed for their protection and study.	Yes
It is a regional centre for monitoring, research, education and training on natural and managed ecosystems.	Yes
It is a land and/or coastal/marine area in which people are an integral component, and which is managed for objectives ranging from complete protection to intensive yet sustainable production.	No, people are missing
It is a place where government decision makers, scientists, managers and local people cooperate in developing a model program for managing land and water to meet human needs while conserving natural processes and biological resources.	No, local people are missing
Finally, each biosphere reserve is a symbol of voluntary cooperation to conserve and use resources for the well being of people everywhere.	Voluntary cooperation is limited to NGOs

54. Owing to this hiatus a memorandum of understanding with the Nordic Investment Bank (NIB) for a €4 million loan to support sustainable development of the Delta remains stalled as the bank has no national interlocutor. This loan was extremely important for the future of the reserve as it included €5 million for improved monitoring systems, €0.6 million for public utilities, transport and communications to improve the

more strict reporting requirements, have reduced poaching considerably. The reported complaints during interviews can be in fact interpreted as a complaint for reduced possibilities of poaching.”

quality of life of Delta residents, € million to develop alternative economic activities focusing on tourism, and €13.3 million for further ecosystem restoration.

SUSTAINABILITY

55. **Sustainability is rated as likely despite institutional weaknesses.** Exogenous factors give the Reserve high international visibility and the requirements for EU accessions and subsequent support almost guarantee its sustainability.

56. The Reserve Authority has enlarged and legally secured the integrity of the biosphere reserve. Budget support from the Ministry of Environment appears assured – even if less than requirements. Income generated within the reserve from licensing, reed cutting, fishery leases and tourism fills some of the gap between the central budget contribution and total running costs.

57. The Danube Delta National Institute is an autonomous body able to set its own establishment and remuneration system. It has established an international reputation and is recognized as a European Centre for Excellence for Deltas and Wetlands and the National Reference Center in fisheries and land resource management. It has won national awards: in 2000 for ecological restoration and the hydraulic modeling of the Danube Delta and its contribution to the Lower Danube Green Corridor Project. Ecological restoration activities also won it the 1995 European Community Eurosite Award and a 1996 WWF Merit award. As a result it attracts considerable external funding for its research activities, amounting to 40 percent of its total budget, that also helps to cross-subsidize its Danube Delta work program. Importantly, it has continued to secure EU Framework Programme V and VI contracts and support for wetlands research, and PHARE/European Commission support for pilot projects. The Institute also undertook the GIS work for the follow-on GEF environmental program in Romania and continues its partnership with research institutes in France, Germany, Great Britain and the Netherlands.

58. Local people feel strongly that Reserve Authority puts economic activities above environmental work. Interviews with the Authority's governor and managers, and their independent assessment of the relative importance of all activities in the Delta (Table 6) indicate that this is not true. There are insufficient funds to cover all environmental management needs, and many of the economic activities sponsored or controlled by the Reserve Authority appear to act against the locals' interests. Thus, for example, the leases secured by the reed collecting companies give them command over a traditionally important natural resource of the Delta, excluding locals from a traditional resource. The companies are also influential in local politics because they have valuable contracts for international reed sales. Their employees are not usually residents of the Delta, but are 'poor people ... people with no homes ... from all other counties' (Bell (37)). Under these new arrangements, village mayors authorize a restricted and taxed personal allowance of reeds, cut for their own use (for roofing; animal houses, etc.). Locals are barred from selling reeds as the companies hold the monopoly.

59. Similarly, the Reserve Authority's administration of fishery leases, started in 2001, is highly controversial because it is believed to favor large private fishing

companies over individual fishermen. Under their leases all sales must be handled by the 13 new fishing companies and individual fishermen or associations can no longer buy and sell fish directly.³⁸ Locals are allowed to fish for personal consumption up to 3 kg a day for each of the 4,000 Delta families. To secure their leases, private companies employ their own guards, further complicating the regulatory system. Because of their sense of injustice over the loss of rights, Delta fishermen have held public demonstrations and challenged the fishery leasing process in the courts. As a result, the fisheries leasing process remains incomplete.

60. Most Delta people look to tourism as the only alternative source of income. To open bed and breakfast accommodation—the most popular option for foreign tourists who want an ‘at home’ experience—they have to be licensed by the Reserve Authority. Even here there are problems, not least, the poor infrastructure in the Delta – 19 of the 26 villages lack safe water supplies, good sanitation and garbage disposal facilities, and they take water directly from the river or canals. Indeed, the Reserve Authority does not seem to regard tourism to be relevant to their management planning for the Delta, giving low priority to tourism and transport (Table 10). Even so, they expect the number of tourist-days to increase from the current 40,000 a year as they see the potential to be about one million a year.

Table 10: Revealed preferences of the Reserve Authority’s management

Sector	Support to the Reserve Authority	Number of Companies	Number of employees	Annual Turnover US\$ million
Ecological Restoration	+5	1	80	\$0.10
Fisheries	+4	130	1,900	\$7.30
Services	+4	80	160	\$0.50
Agriculture	+3	28	1,800	\$5.90
Reed Harvesting	+2	4	400	\$1.50
Hunting	+2	2	30	\$0.50
Forestry	+2	2	60	\$0.10
Industry	+2	9	100	\$0.50
Local government	+2	169	415	\$0.50
<i>Tourism & recreation</i>	<i>+1</i>	<i>33</i>	<i>200</i>	<i>\$1.00</i>
Energy & heating	-1	1	20	\$0.10
Transport	-4	73	250	\$1.50
Totals	-	532	5,415	\$19.50

Source: UNESCO MAB Task Force. 2002. The Reserve Authority’s summarized answers to the Task Force’s Questionnaire for Biosphere Managers and Coordinators.

38. The fishing leases were publicly auctioned. Each lease runs for 10 years with an option for a 5-year extension. Local fisherman claim they could not compete given the relatively large-scale of the exercise compared with their experience, and their lack of funds and business inexperience.

BANK PERFORMANCE

61. **Overall Bank performance is rated as satisfactory with some shortcomings.** The project was thoroughly prepared and the project design provided the basis for a coherent approach to biodiversity conservation in the region. Supervision was very effective and all Romanian officials and Reserve staff were very complimentary about the quality, knowledge, and experience of Bank staff, their understanding of local issues and problems, and their ability to work at the local, national, and international levels and to bring NGOs, government, and other donors to help develop the Reserve Authority. There were two shortcomings. First, the Bank could have been more effective in securing Reserve Authority compliance with biosphere principles after EBRD withdrawal. The failure to assess the importance of access to the Delta's natural resources by local people was a major design shortcoming at appraisal and at mid-term review after EBRD had withdrawn. Second, most government and NGO officials felt that the Bank placed too much reliance on foreign experts to solve Romania's problems, particularly at the beginning of the project. Local experts expressed some resentment that Bank staff under-estimated Romania's sizeable skill base and existing institutions.³⁹

BORROWER PERFORMANCE

62. **Borrower performance is rated as satisfactory but with some reservations.** The Reserve Authority and Institute staff performed exceedingly well during project preparation and implementation. This wealth of expertise, enabled by the project funding, led to the production of scientific work, research, and conservation to international standards. Reserve Authority and Institute staff have actively engaged in international exchange and cooperation to enhance their skills and the management of the Reserve.

63. The reservation is that all the management principles of a biosphere reserve are not yet in place. NIB funding to assist this is being held in limbo because of ambivalent views in government on the utility of environmental protection given their other pressing development concerns. And within the Reserve Authority, there seems to be an unwillingness to embark on a comprehensive and cross-sectoral approach to rural development that includes productive working partnerships with communities and participatory management of the Reserve.

39. The origin of Biosphere Reserves goes back to the "Biosphere Conference" organized by UNESCO in 1968, the first intergovernmental conference to seek to reconcile the conservation and use of natural resources, thereby foreshadowing the present-day notion of sustainable development. The early foundations of the Biosphere Reserve Concept derived from this conference. The aim was to establish terrestrial and coastal areas representing the main ecosystems of the planet in which genetic resources would be protected, and where research on ecosystems as well as monitoring and training work could be carried out for an intergovernmental program called for by the Conference. This "Man and the Biosphere" (MAB) Program was officially launched by UNESCO in 1970. One of the MAB projects consisted in establishing a coordinated world network of new protected areas, to be designated as "Biosphere Reserves", in reference to the program itself.

4. Findings and Lessons

64. The objective of the project to establish a viable biosphere reserve was substantially established but with some shortcomings, the main one being very modest progress on developing stakeholder participation in the management and economic activities of the Reserve.

65. Participation of stakeholders in project design and implementation was a new practice in the early 1990s when this project was being designed and it took several years to understand what works best. Comprehensive evaluation of participatory experience only started to emerge in 1997 following a number of studies by the Bank, GEF and OED's thematic study *Participation Process Review* (2001).⁴⁰ More recently, UNDP/GEF produced guidelines to improve the design of small business development strategies in biodiversity projects, recognizing that sustaining benefit streams for local stakeholders is a key development challenge.⁴¹ Many of the findings reported resonate with the lessons derived from this evaluation. These are to build participation as soon as possible and recognize that significant project resources may be needed for local capacity building; use neutral parties to engender local participation; seek ways to increase income potential for local people from ecosystems targeted for conservation; provide alternatives to biodiversity-damaging activities; and generate sufficient income at the boundary of protected areas to reduce encroachment.

66. GEF grant funding played a pivotal role in helping the Reserve build capacity and the skills, knowledge and entrepreneurial spirit created subsequently leveraged considerable external contracts and funding that underpins longer-term sustainability. From a national perspective there will be an increasing demand for GEF grants even after EU accession, not only to increase local capacity but to improve the environment.⁴² While seemingly contradictory – surely EU funding will eliminate the need for GEF grants? – it is not. The reason is that all EU environmental support will require a matching Romanian 25 percent contribution, sums the government would have great difficulty in raising. There are several ways around this dilemma. One being to increase service delivery tariffs while increasing the efficiency of Romanian utilities, and thus generate the matching funding locally. The GEF and the Bank could help with grants and loans to

40. The World Bank. 1997. A Review of Participation in the World Bank's GEF Portfolio. Environmental Department Dissemination Notes. No.52. March 1997.

The World Bank. 2002. Biological Resource Management – Integrating Biodiversity Concerns in Rural Development Projects and Programs. Robin Grimble and Martyn Laidlaw. Environment Department Papers. Paper No. 85. January 2002.

The World Bank. 2004. Participatory Conservation for Protected Areas – An Annotated Bibliography of Selected Sources (1996-2001). Nancy Diamond, Elisabeth Nkrumah and Alan Isaac. Environment Department Papers. Paper No. 95. January 2004.

41. UNDP/GEF. 2003. Local Business for Biodiversity Conservation. Andrew Bovanick and Ajay Gupta (Authors). August 2003.

42. The total cost of meeting EU environmental directives is estimated to cost €2 billion phased over the period 2007-22, or about €1.5 billion a year and three-quarters of the funding could be through EU grants subject to a limit of 4 percent of Romanian GDP. This includes €9 billion for wastewater treatment, €5.6 billion for water supplies, €2.7 billion for solid waste treatment/disposal and €2.4 billion to reduce air pollution.

upgrade utility performance and assist building the considerable capacity to manage and regulate the utilities efficiently. Current estimates are that about €200 million (or US\$260 million) a year would be required.⁴³

67. It was found that the whole range of GEF activities implemented by several different international agencies in Romania lacked a country focus. In part this was due to the MoE's weak ability to coordinate the activities of the international agencies each of whom had their own development agenda and ways of doing business. Thus an opportunity to move towards a more coherent country-focused approach was missed.

LESSONS

68. Experience with this project confirms a number of OED lessons:

- Biodiversity conservation cannot be carried out in isolation. It has to be integrated within the economic interests of local and regional communities. Resentment is created when financing of nature conservation appears to have preference over unmet local needs, be it employment or delivery of basic services. Failure to integrate local interests in the conservation and management strategy of a biosphere reserve can endanger its longer-term sustainability.⁴⁴
- Conservation areas will be sustainable only if there is good management and sufficient funding. GEF project designers must help establish sound management and governance arrangements that include local stakeholders and promote income-generating activities. This is particularly important in biosphere reserves where people are as important as the flora and fauna being protected.
- When establishing biodiversity reserves, facilitate networking of the reserve staff with the national and international NGOs and promote recognition by international

43. The ECA Region staff made the following comment: "The report also states that the Reserve Authority does not devote sufficient attention/resources to improving infrastructure and transport to promote tourism, which locals see as their main economic opportunity. This, again, is not sufficiently documented. The Bank has followed up with two projects which include Danube Delta as well - the Rural Development Project (which meant rural roads and water supply) and the Social Development Fund (within which several community driven sub-projects were financed in the Delta). The EU-financed SAPARD program has also financed several both public and private developments in the Delta."

44. On review of this OED report the GEF Office of Monitoring and Evaluation made the following observation: "Maybe a more interesting recommendation could have been that projects with these [biosphere conservation] objectives should be phased or sequential whereby a focus on improving PA management and building capacity takes center stage at first (which this project seems to have done very well) while on a parallel track and towards the mid to end of the first phase, a project would conduct comprehensive studies to analyze the economic opportunities that the BR or PA management authority could promote in a participatory way. [This] would place the more difficult tasks of "local economic development" in this category of most challenging tasks in conservation projects. In addition, there would be some questions about the role of the GEF in supporting the local economic development since our role is to finance the incremental cost of to generate global benefits. Furthermore, it also appears that this project only took on the "income-generating activities" when EBRD left the project so it is hard to totally fault them for not delivering on this aspect of the project as it was not part of the original design." Rob van den Berg. May 27, 2005.

conventions. The benefits are two-fold. First, it provides a conduit for research funding. Second, it creates a supportive network.

- GEF should move towards a country-focused strategic approach to complement its thematically-driven development framework. By doing so GEF would develop synergy from a more coherent policy framework, thus improving effectiveness and reducing transaction costs for Romania.

Annex A. Basic Data Sheet

ROMANIA DANUBE DELTA BIODIVERSITY PROJECT (TF-28614 & 28660)

Key Project Data (amounts in US\$ million)

	<i>Appraisal estimate</i>	<i>Actual or current estimate</i>	<i>Actual as % of appraisal estimate</i>
Total project costs	4.8	4.5	94
Loan amount	4.5	4.3	93
Cofinancing	0	0	-
Cancellation	-	0.07	1.5

The difference between the appraised and actual loan amount is due to SDR devaluation.

Cumulative Estimated and Actual Disbursements

	<i>FY95</i>	<i>FY96</i>	<i>FY97</i>	<i>FY98</i>	<i>FY99</i>	<i>FY00</i>	<i>FY01</i>
Appraisal estimate (US\$M)	1.6	2.6	3.7	4.2	4.5	4.5	4.5
Actual (US\$M)	0.3	1.3	2.0	3.4	4.0	4.3	4.3
Actual as % of appraisal	18	50	54	80	88	95	95
Date of final disbursement:	November 3, 2000						

Project Dates

	<i>Original</i>	<i>Actual</i>
PCD	-	9/20/1993
Appraisal	-	9/26/1993
Board approval	-	8/26/1994
Effectiveness	9/25/1994	2/06/1995
Closing date	6/30/2000	6/30/2000

Staff Inputs

Stage of Project Cycle	Actual/Latest Estimate	
	No. Staff weeks	US\$ ('000)
Identification/Preparation	41.4	110.0
Appraisal/Negotiation	58.8	147.7
Supervision	87.1	231.1
ICR		
Total		488.8

Mission Data

	No of Person	Specializations	Implementation Progress	Development Objective
Identification/Preparation				
	1	Natural Resources Economist	S	S
	1	Biodiversity Specialist	S	S
	1	Environmental Specialist	S	S
	1	Financial Analyst	S	S
	1	Water Management Specialist	S	S
	1	Ecologist	S	S
Appraisal/Negotiation				
	2	Natural Resources Economist	S	S
	1	Environmental Specialist	S	S
	1	Biodiversity Specialist	S	S
	1	Water Management Specialist	S	S
	1	Procurement/Financial Management Specialist	S	S
	1	Regional Procurement Advisor	S	S
	1	Project Cost Specialist	S	S
Supervision				
	4	Economists	S	S
	1	Biodiversity Specialist	S	S
	2	Environmental Specialist	S	S
	2	Financial Management Specialist	S	S
	3	Procurement Specialist	S	S
	1	Public Affairs Officer	S	S
	1	Water Management Specialist	S	S
ICR				
	2	Biodiversity Specialists	S	S
	1	Economist	S	S
	1	Public Affairs Officer	S	S

Other Project Data

Borrower/Executing Agency:

FOLLOW-ON OPERATIONS

Operation	Credit no.	Amount (US\$ million)	Board date
None			

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