

BULGARIA  
Wetlands Restoration and Pollution Reduction Project

## Project Appraisal Document

Europe and Central Asia Region  
Environmentally and Socially Sustainable Development Department

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| <b>Date:</b> May 6, 2002<br><b>Country Manager/Director:</b> Andrew N. Vorkink<br><b>Project ID:</b> P068858<br><br><b>Focal Area:</b> I - International Waters | <b>Team Leader:</b> Rita E. Cestti<br><b>Sector Manager/Director:</b> Laura Tuck<br><b>Sector(s):</b> VM - Natural Resources Management<br><b>Theme(s):</b> Environment<br><b>Poverty Targeted Intervention:</b> N |
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### Project Financing Data

Loan     Credit     Grant     Guarantee     Other:

#### For Loans/Credits/Others:

**Amount (US\$m):** \$7.50

| Financing Plan (US\$m):                                      | Source | Local | Foreign | Total |
|--|--------|-------|---------|-------|
| BORROWER/RECIPIENT   |        | 2.50  | 0.40    | 2.90  |
| LOCAL COMMUNITIES  |        | 0.15  | 0.00    | 0.15  |
| EC: PHARE  |        | 0.00  | 1.59    | 1.59  |
| AUSTRIA, GOV. OF (EXCEPT FOR FED<br>CHANCELLERY-DG DEV COOP) |        | 0.19  | 0.19    | 0.38  |
| GLOBAL ENVIRONMENT FACILITY                                  |        | 2.98  | 4.52    | 7.50  |
| BILATERAL AGENCIES (UNIDENTIFIED)                            |        | 0.33  | 0.43    | 0.76  |
| <b>Total:</b>  |        | 6.15  | 7.13    | 13.28 |

**Borrower/Recipient:** GOVERNMENT OF BULGARIA

**Responsible agency:** MINISTRY OF ENVIRONMENT AND WATER

Wetlands Restoration and Pollution Reduction Project - Project Coordination Unit

**Address:** Ministry of Environment and Water

22 Maria Luisa Blvd., Room 408

1000 Sofia, Bulgaria

**Contact Person:** Ms. Marietta Stoimenova, Project Manager

**Tel:** (359-2) 940-6551/940-6610

**Fax:** (359-2) 980-8734

**Email:** Wetlands\_ppu@  
moew.government.bg

### Estimated Disbursements ( Bank FY/US\$m):

| FY                | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |  |  |
|-------------------|------|------|------|------|------|------|--|--|
| <b>Annual</b>     | 0.60 | 1.54 | 1.93 | 1.81 | 1.19 | 0.43 |  |  |
| <b>Cumulative</b> | 0.60 | 2.14 | 4.07 | 5.88 | 7.07 | 7.50 |  |  |

**Project implementation period:** 5 years. The expected effectiveness date is September 16, 2002, the expected completion date is September 15, 2007, and the expected closing date is March 15, 2008.

## **A. Project Development Objective**

### **1. Project development objective:** (see Annex 1)

The project development objective is that local communities and local authorities in the Persina Nature Park and Kalimok/Brushlen Protected Site areas adopt sustainable natural resources management practices. The project will help demonstrate how environmentally-friendly rural development activities can improve livelihoods.

The global environmental objective is to demonstrate and provide for replication of reduction of transboundary nutrient loads and other agricultural pollution flowing into the Danube River and the Black Sea Basins while at the same time conserving key target threatened species in the project areas through: (i) wetlands restoration and protected areas management programs, and (ii) support for stakeholders to adopt environmentally-friendly economic activities in the two project areas.

In support of these objectives, the project will assist in: (i) the restoration of critical priority wetlands in the Danube River basin and piloting the use of riparian wetlands as nutrient traps; (ii) the establishment of comprehensive monitoring systems for water quality and ecosystem health; (iii) support for protected areas planning in Persina Nature Park and Kalimok/Brushlen Protected Site; (iv) strengthening capacity to protect and manage biodiversity and natural resources; (v) building public awareness of sustainable natural resources management and biodiversity conservation; and (vi) promoting and supporting entrepreneurial and agricultural activities within the project region which ensure the sustainability of natural resources and are compatible biodiversity conservation objectives.

### **2. Key performance indicators:** (see Annex 1)

Progress towards the project objective will be measured by the following key performance indicators:

- Gradual improvement in ecosystem health of restored wetlands, as measured through essential ecological indicators, i.e., nutrient removal (measured through the percentage reduction in nutrient loads in water in-flow and out-flows); critical biodiversity habitat (evidenced by increased species diversity and population numbers of key indicator species); critical fish reproduction habitat (measured through the increased fish diversity and population numbers, especially those of high economic value).
- Establishment of effective control structures and monitoring systems; staff knowledgeable in their operations and maintenance.
- Adoption of Protected Areas Management Plans for Persina Nature Park (21,000 ha) and Kalimok/Brushlen Protected Site (6,000 ha), based on broad stakeholder consensus and support and combining socio-economic development and conservation objectives.
- Establishment of effective protected area administrations, capable of implementing the Protected Areas Management Plans in close collaboration with other local institutions and communities.
- Establishment of effective, replicable models of participatory and integrated management of wetlands in areas with mixed land use and ownership patterns.
- Improved agricultural practices in Persina Nature Park and Kalimok/Brushlen Protected Site, resulting in measurable nutrient reduction.

- Increased local awareness and support for biodiversity conservation, marked by the increased participation of local communities in protected areas management and conservation activities and increased public knowledge of the importance of the restored wetlands and protected areas ecosystems.
- Increased dialogue on transboundary water quality and regional natural resources management issues through partnerships with Bulgarian and regional scientific communities.

## **B. Strategic Context**

### **1. Sector-related Country Assistance Strategy (CAS) goal supported by the project:** (see Annex 1)

**Document number:** to be completed      **Date of latest CAS discussion:** 04/25/2002  
to be confirmed

Main development challenges of Bulgaria, as identified in the recent (draft) CAS, includes the need to ensure an optimal path toward environmentally sustainable development. Ensuring prudent and rational utilization of natural resources and a prudent path toward compliance with EU environmental directives, while at the same time reducing poverty levels, are over-arching goals.

The Project helps meet the objectives of the CAS in the following ways:

- *Sustainable natural resources management:* The Project will help local communities and local authorities in the Project region to adopt sustainable natural resources management practices. The project will help demonstrate the use of wetlands as nutrient sinks, thus contributing to address pollution problems of the Danube River and Black Sea; conserve Bulgaria's globally significant biodiversity; and demonstrate how ecologically sustainable agricultural activities can improve livelihoods.
- *Strengthening Implementation and Compliance with EU Environmental Directives:* The Project focuses on helping the Government of Bulgaria implement the Protected Areas Law and the Water Act, which are harmonized with the EU Water Management Framework Directive, the Nitrates Directive and the Habitats and Protection of Wild Birds Directives. The technical assistance provided by the Project will assist the country towards EU accession and institutional building.
- *Poverty-Environmental Link:* This project also demonstrates a clear poverty/environment link. The region along the Danube coast is one of the poorest areas in Bulgaria, to a great extent related to the alterations of the Danube river and floodplain, which has led to decreased economic productivity of the river. It has seen a tenfold drop in fishery catch since the late 1960's, seriously affecting rural incomes and livelihoods. One of the underlying causes of the decrease is the destruction of riverine wetlands necessary for fish spawning. The draining of the floodplain has proven too expensive to maintain because of the heavy reliance in pumping. This has resulted in considerable areas of the former floodplain with degraded natural habitats and unsuitable for agriculture. Hence, linking wetland restoration with the sustainable use of natural resources in the region will help increase the well-being of the local population by enabling them to increase their economic opportunities for fishery, agriculture, eco-tourism as well as by allowing downstream communities to enjoy cleaner water supplies.

#### **1a. Global Operational strategy/Program objective addressed by the project:**

The project is fully consistent with Global Environment Facility (GEF) Operational Program No. 8 under the International Waters Operational Strategy regarding water bodies. The project addresses the highest priority transboundary problem identified in the Strategic Action Plans of both the Black Sea and the

Danube River Basins. Under the WRPRP, the Government of Bulgaria (GoB) will develop comprehensive guidelines for nutrient reduction that will fit into the nation-wide nutrient reduction strategy. It will also implement innovative pilot activities in wetland restoration, and accelerate the introduction of nutrient friendly agricultural practices which have clear transboundary (global) as well as national benefits. The incremental costs associated with these benefits are additional to other actions which will be taken and which have clear domestic benefits (such as the construction of wastewater treatment plants).

The project also has significant biodiversity conservation benefits, consistent with eligibility criteria outlined in the GEF Operational Strategy No. 2 on the conservation of coastal, marine, and freshwater biodiversity. Restoration of wetlands and strengthening protected areas in the Danube floodplain will help restore and conserve natural habitats in critical ecosystems with globally significant biodiversity.

Bulgaria's National Biodiversity Strategy (1994) identifies the Danube wetland complex targeted by the project as the most representative of riverine wetlands and of international importance for waterfowl habitat. It has been proposed as a Ramsar site. Similarly, the "National Action Plan for the Conservation of the Most Important Wetlands in Bulgaria" (1995) considers Belene Island and the Kalimok/Brushlen Marshes as high priority areas for restoration. Belene Island is of particular international importance as breeding habitat for the endangered white-tailed eagle and nesting herons, cormorants (*Phalacrocorax carbo*), glossy ibises (*Plegadis falcinellus*) and spoonbills (*Platalea leucorodia*). The two sites also serve as nesting places for the Ferruginous Duck (*Aythya nyroca*) and the endangered Dalmatian Pelican (*Pelecanus crispus*).

*Consistency with the Strategic Action Plan for the Protection and Rehabilitation of the Black Sea (BSSAP) and the Black Sea/Danube Strategic Partnership.* The BSSAP, formulated with the assistance of GEF, has identified nutrient discharge as the most serious problem facing the Black Sea. The GoB has requested assistance from the GEF/World Bank to undertake an innovative approach to wetland/floodplain restoration which links land use change with sustainable use and economic development. Floodplains and wetlands are high efficiency water purifiers during both flood and dry periods. The self-purification action is a complex interaction of physical (sedimentation, filtration, absorption), microbiological (denitrification) and biological processes (nutrient reduction through aquatic micro and macrophytes and the roots of terrestrial vegetation). According to several studies in similar ecological conditions, floodplains can retain up to 90% of nitrates and up to 50% of phosphorous which pass through. The proposed project is the first of its kind under the umbrella of the Black Sea/Danube Strategic Partnership -- Nutrient Reduction Investment Fund, a program which intends to help riparian countries undertake investments to control or mitigate nutrient inflow to the Black Sea. As the first wetlands restoration project to be proposed under the Strategic Partnership, the Bulgaria WRPRP will play a critical demonstration role within the region and help promote similar cost-effective investments for nutrient reduction in the region. The Strategic Partnership framework will ensure lessons learned during implementation of this project will be disseminated to enhance future project designs.

## **2. Main sector issues and Government strategy:**

**Background.** Bulgaria is situated in the heart of southeast Europe, and lies in the eastern part of the Balkan Peninsula. Its climate ranges from continental in the north and west to Mediterranean in the east and south. The average annual precipitation is 640 millimeter (mm), but ranges from 480 mm on the Black Sea coast to 1800 mm in the mountains. The average annual temperature is 10oC, but varies from -2oC in winter to 25oC in summer. In general, Bulgaria is well endowed with natural resources. The wide range of soils is conducive to a diversified agriculture and forestry. About 56% of the total area is agricultural

land, about 35% is covered by forests, and 5% is covered by water.

Radical economic and structural reforms were introduced in 1997. They resulted in a dramatic fall in the inflation rate, acceleration in the privatization of state owned enterprises and the return to modest economic growth. The economic changes, however, led to widening regional disparities in living standards and infrastructure, particularly in rural areas. During the 1990s, the privatization of agricultural land, which took place mainly via the restitution process, resulted in fragmentation in land ownership. Many of the small private farms that emerged from the land restitution are subsistence in nature. Poverty rates are higher among rural areas. In 1997, over 41% of rural residents were poor compared to 33% in urban areas.

**Main Sector Issues.** The Black Sea, a critical regional resource, suffers severe environmental damage from eutrophication (i.e., the collapse of food chains due to loss of life-giving oxygen), the introduction of exotic species, inadequate resource management, and loss of habitat -- all of which have led to long-term ecological change and a decline of its biological diversity. In-depth analytical work points to an increase in nutrient flux down the major rivers, as the most serious problem facing the Danube River and the Black Sea over the medium to long-term. The effects of eutrophication on the northwestern shelf of the Black Sea at the mouth of the Danube have had particularly disastrous impacts to water quality, natural habitat, and fish populations on which both biodiversity and human populations depend.

The Danube River is one of the continent's largest and most important rivers linking Central and Eastern Europe. It flows approximately 2900 kilometers through thirteen countries from Germany to the Black Sea, includes 300 tributaries and drains 817,000 square kilometers. The Danube contributes approximately 60% of the nutrient load to the Black Sea, with approximately 60% of the nitrogen compounds and about 66% of the phosphorous compounds originating from non-point sources within the Danube watershed.

*Regional action to clean up the Danube/Black Sea.* In response to growing concerns about Danube pollution, and in recognition of the fact that significant nutrient reduction requires regional commitment, the Danube River riparian countries drew up the Convention on the Cooperation for the Protection and Sustainable Use of the Danube River, signed in 1994 and entered into force in 1999. Monitoring of the implementation of the Convention is the responsibility of the International Commission for the Protection of the Danube River (ICPDR), located in Vienna. Similarly, the six countries bordering the Black Sea decided that joint action to save the Black Sea was urgently needed, and in 1992, signed the Bucharest Convention for the Protection of the Black Sea Against Pollution (ratified in early 1994). The Bucharest Convention was given additional impetus in 1993 by the Odessa Ministerial Declaration on the Protection of the Black Sea Environment, also endorsed by Bulgaria. Nutrient reduction is the highest priority issue for both programs.

*Role of Bulgaria.* The Danube River forms the border between Bulgaria and its northern neighbor Romania for 472 kilometers (km) before continuing through Romania to the Black Sea. More than half the area on the Bulgarian bank of the Danube is floodplain, covering 1280 square km. Over the years, the wetlands and floodplain have been drained or dyked to create arable land or as an anti-malaria measure, such that today's wetlands cover only about 10% of the area that existed at the turn of the century and hence cannot perform their original ecological function. Although about half of the country drains into the Danube River, Bulgaria is currently not the largest contributor of nutrient loads to the river. The Transboundary Diagnostic Analysis (TDA) undertaken under the Black Sea Environmental Program between 1993-99, indicates that Bulgaria places third on the Black Sea riparian countries in terms of the nitrogen (N) and phosphorous (P) contributions to the Sea.

Actions which Bulgaria might take to address the issue of transboundary pollution have to be matched with a program addressing real national priorities with national benefits in order to be politically and financially justified. Government and local officials are eager to integrate interventions which address transboundary pollution and global biodiversity with efforts that help Bulgaria meet EU environmental *acquis*. Other identified national benefits include opportunities for the sustainable use of aquatic resource, providing income for local communities. An approach which integrates global and national development objectives increases the likelihood of long-term project success.

Bulgaria faces a number of issues as it attempts to meet its international commitments to reduce nutrients and generally clean up the Danube/Black Sea, and to comply with EU environmental *acquis*. These include:

*Water quality and nutrient reduction.* Water in Bulgaria is a scarce resource, with per capita endowment less than half the average for European countries. One third of the country faces permanent or seasonal water shortages. Nitrogen content exceeds drinking water standards in a number of rural settlements. The water scarcity problem is aggravated by pollution from various sources, especially agricultural run-off, inadequately treated urban wastewaters, changes in hydrological conditions and the decline of both quantity and quality of aquatic ecosystems. The underlying causes of the pollution include lack of financial resources for the construction and operation of wastewater treatment plants with tertiary treatment capacity in a number of Bulgarian towns, inappropriate agricultural practices, industrial pollution, and to a lesser extent to the present economic situation, low household incomes and poor financial situation of wastewater companies. About 49% of all wastewater generated (including 43% of industrial wastewater) is discharged directly into the environment without any preliminary treatment. Nationwide, half of the towns with population of over 50,000, and about 75% of the towns with a population of over 10,000 people have no wastewater treatment plants (WWTP). According to the TDA, Bulgaria contributes approximately 7,500 tons of N and 720 tons of P per year into the Danube. For the Black Sea, the numbers are significantly higher: 2,480 tons of N and 693 tons of P from domestic sources, and an additional 2,000 tons of N and 432 tons of P from its rivers flowing into the Black Sea. Wetlands, in turn, can result in retention and recycling of nutrients found in surface water flows, and can offer cost-effective solutions for abatement of nitrogen and phosphorus loads.

*Biodiversity conservation and wetland restoration.* Bulgaria is one of the most biodiversity-rich countries on the Danube. It is the third richest European country from the point of view of animal and plant diversity. The National Biodiversity Strategy (1994) as well as the National Action Plan for the Conservation of the Most Important Wetlands (1995) have identified priority areas for conservation and restoration of wetlands, including areas of international importance such as nesting sites of the Ferruginous Duck and the endangered Dalmatian Pelican. In its efforts to develop a wetlands strategy consistent with EU directives on habitats and the protection of wild birds, the Government has faced opposition from some local community members who do not always appreciate the importance of wetlands for conserving globally significant biodiversity, for maintaining water quality, flood control and a variety of other environmental services. In general, public opinion has favored the draining of wetlands for other land uses -- Government's policy from the 1950s to the 1980s.

*Protected areas management.* Activities related to nature protection are regulated by the Environmental Protection Law, Forestry Law, the Protected Area Law (PAL), and the Hunting Law. While the PAL stipulates procedures to prepare protected areas management plans, development of these plans will require the integration of biodiversity conservation with economic development with a participatory planning process. Similarly, in order to gain acceptance from poor local communities to reduce pressure on nature resources, there is a clear need to identify and implement alternative income generating activities, to

undertake awareness raising programs, and to have park administrations proactively foster sustainable economic activities within the project region.

**Government Strategy.** Bulgaria's strategy for nutrient reduction, biodiversity protection and agriculture and rural development has the following objectives:

- Compliance with the EU Water Framework Directive. The country will be required to achieve "good status" for the all surfaces waters – measured not only by the water quality of its water bodies, but also by the healthy functions of natural water ecosystems (including transboundary river basins).
- Compliance with the EU Habitats and Birds Directives. The country is required to establish a network of effective protected areas covering representative habitats which will become part of the European Nature 2000 network of protected areas upon EU accession.
- Fulfill obligations under several international agreements to which the county is a signatory. The country has committed itself to implement the Strategic Action Plans of the Black Sea and Danube Conventions, which includes participating in the development of a common Danube River Basin Management Plan in the framework of the Danube Convention. Efforts to restore water quality and water ecosystems are also relevant to the Ramsar Convention on Wetlands of International Importance, especially as waterfowl habitat, encouraging sustainable development and wise use of natural resources in wetland areas. The Danube wetland complex within the project sites is the most representative of riverine wetlands and of international importance for waterfowl habitat.
- Achieve sustainable rural development. The National Agriculture and Rural Development Plan 2000-06 aims for sustainable rural development consistent with the best environmental practices, and calls for the promotion of environmentally-friendly farming and environmental protection.

**Recent and Planned Government Actions.** The Government of Bulgaria has demonstrated a commitment to improving nature protection and water quality.

*Water quality and management.* In 1999, the Bulgarian Parliament adopted a new Water Act that reflects to a large extent the requirements of the EU Water Framework Directive. The Water Act includes the elements on the planning, study and management of the national and river basin levels and the administrations that will be established to carry out these management responsibilities. It introduces a more integrated approach to water management based on river basin principles -- to ensure common management of surface and groundwater according to quality and quantity, in order to achieve sustainable use and protection of waters, water ecosystems, and wetlands. Implementation of the Water Act requires institutional changes and new skills to carry out modelling, planning and increased monitoring.

*Investments in point-source pollution.* The government has planned investments from the National Environmental Protection Fund for a small number of priority wastewater treatment plans, identified according to a set of criteria. Virtually all cities on Danube tributaries are included in the National Program for priority construction of urban wastewater treatment plants for cities above 10,000 inhabitants. Financial resources, however are far from sufficient to cover investment costs. Nutrient reduction investments are not addressed specifically by the plan. The Government will rely heavily on grants or soft loans from international donors for the construction of wastewater treatment plans, in particular the EU pre-accession funds -- Instrument for Structural Policies for Pre-Accession (ISPA). The high operation and maintenance costs, which are rarely financed from outside sources, is a constraint for the implementation of this program. Hence the government is very interested in looking at low-cost

technologies such as wetland restoration as a means of reducing nutrient loads and meeting water quality standards.

*Wetland restoration for biodiversity conservation and nutrient reduction.* The Government recognizes the multiple benefits of wetland restoration: first, as a way to decrease transboundary pollution; second, as a means of preserving globally significant biodiversity; and third, as a possible source of revenue for local communities living in the poorer regions of Bulgaria. By restoring the spawning grounds for fish, the expectation is that the local fishing industry will make a comeback.

### **3. Sector issues to be addressed by the project and strategic choices:**

The WRPRP will extend and deepen the ongoing Government actions by addressing the following issues:

- Undertaking an innovative and potentially high-impact wetland restoration program which combines conservation of biodiversity values, nutrient reduction, and sustainable management and use of aquatic resources.
- Developing opportunities for promoting protected areas management and sustainable use of natural resources that is politically and financially justified and socially sustainable.
- Helping develop a program for nutrient reduction strategy in the Danube/Black Sea Basin consistent with new policies and legislation.
- Developing capacity of farmers to use environmental-friendly agriculture practices and resources management.
- Building national, regional and local capacity in assisting the GoB in meeting its international obligations on transboundary pollution and biodiversity conservation.
- Fully integrating interventions that address transboundary pollution and global benefits with efforts towards complying with EU environmental *acquis*, in particular those requirements related to EU Water Framework Directive and Directives on Habitat and Protection of Wild Birds.
- Moving towards compliance with EU environmental *acquis*.

Originally considered a candidate for a Learning Innovation Loan (LIL), a strategic choice made before proceeding with project preparation was to carry out the necessary technical, social and environmental studies for wetlands restoration during preparation -- resulting in a longer preparation period.

## **C. Project Description Summary**

### **1. Project components** (see Annex 2 for a detailed description and Annex 3 for a detailed cost breakdown):

The project will assist the Government of Bulgaria to: (i) restore critical priority wetlands in the Danube river basin and make use of the wetlands in riparian zones as nutrient traps; and (ii) promote protected areas management and the sustainable use of natural resources, through management planning, monitoring of water quality and ecosystem health, public awareness/participation programs and environmental education. Although the project only directly addresses the restoration of selected priority wetlands in Bulgaria, these activities will play a critical demonstration role within the region, promoting nutrient

reduction investments in other parts of Bulgaria and neighboring countries. The table below summarizes the project cost estimates by component.

| Component  | Sector                       | Indicative Costs (US\$M) | % of Total | Bank financing (US\$M) | % of Bank financing | GEF financing (US\$M) | % of GEF financing |
|--|------------------------------|--------------------------|------------|------------------------|---------------------|-----------------------|--------------------|
| 1. Wetlands Restoration                            | Natural Resources Management | 5.02                     | 37.8       | 0.00                   | 0.0                 | 3.43                  | 45.7               |
| 2. Protected Areas Management                      | Natural Resources Management | 7.37                     | 55.5       | 0.00                   | 0.0                 | 3.38                  | 45.1               |
| 3. Project Coordination, Management and Monitoring | Institutional Development    | 0.89                     | 6.7        | 0.00                   | 0.0                 | 0.69                  | 9.2                |
| <b>Total Project Costs</b>                         |                              | 13.28                    | 100.0      | 0.00                   | 0.0                 | 7.50                  | 100.0              |
| <b>Total Financing Required</b>                    |                              | 0.00                     | 0.0        | 0.00                   | 0.0                 | 0.00                  | 0.0                |
|  |                              | 13.28                    | 100.0      | 0.00                   | 0.0                 | 7.50                  | 100.0              |

The following paragraphs provide a brief description of each component:

**Component 1: Wetlands Restoration (Total: US\$5.02 million, GEF: US\$3.43 million, Other Donors (TBI): US\$0.76 million, GoB: US\$0.83 million).** The most innovative aspect of the proposed project, this component -- if successful -- has a high replication value throughout Bulgaria and the region. In the initial phase of this component, 2,340 ha of former marshes will be restored in two already identified sites, Belene Island within Persina Nature Park and Kalimok/Brushlen Marshes within Kalimok/Brushlen Protected Site, to demonstrate the use of wetlands as nutrient sinks. Additional sites are expected to be identified and restored later during project implementation. Selection criteria for these additional sites will include: ecological potential, floodplain type, current land use, and nutrient reduction potential.

The GEF funds will finance consultancy services for the elaboration of detailed engineering designs, baseline surveys, and the supervision of construction as well as the civil works themselves for the two already identified sites. The civil works will include both construction and rehabilitation activities of small infrastructure which will regulate water flows through the wetlands at the Belene Island and Kalimok/Brushlen sites -- allowing for controlled flooding that optimizes nutrient trapping, biodiversity restoration, fish production while minimizing the risk of impacts to agricultural areas.

Grant support is being sought to finance activities related to the second set of wetland sites to be restored under the project: consultant services for additional site identification, pre-feasibility and feasibility studies, design of restoration activities, and the necessary civil works (including the supervision of their construction). Other than the two sites already selected for restoration under the Project, the Bulgarian "National Action Plan for the Conservation of the Most Important Wetlands in Bulgaria" (1995) as well as the UNDP/GEF/WWF "Evaluation of Wetlands and Floodplain Areas in the Danube River Basin" (1999) have identified other critical wetland sites in need of restoration and protection based on predominately their biodiversity value. The Project will assist the GoB to undertake a re-assessment of identified priority wetlands, using a broader range of criteria developed as "lessons learned" from the preparation phase of the original two restoration sites, such as nutrient-uptake potential and marginal cost (linking to the Nutrient Reduction Strategy Guidelines Component) as well as social indicators (current land-use and ownership patterns).

**Component 2: Protected Areas Management (Total: US\$7.37 million, GEF: US\$3.38 million, EU PHARE: US\$1.59 million, Austria:US\$0.38 million, Farmers and Municipalities: US\$0.15 million, GoB: US\$1.87 million).** This component will support the next step towards the sustainable resource management and protection within the two protected sites, Persina Nature Park (22,000 ha) and Kalimok/Brushlen Protected Site (6,000 ha). Starting with the preparation of protected areas management plans at the two sites, the component will then move on to support the implementation of priority actions identified within the management plan framework. Both the wetlands restoration and protected areas management regimes will integrate needs of the local communities with the biodiversity objectives of the two protected areas. This component will include: (i) the development of protected areas management plans in Persina Nature Park and Kalimok/Brushlen Protected Site; (ii) the implementation of priority actions identified in these plans, including the management of the restored wetlands and surrounding land (including the operation and maintenance of the flood control infrastructure), establishment of a contingency relief fund, establishment of a farmer transition support fund to assist farmers make the transition to economic activities compatible with conservation objectives and sustainable use of natural resources, and the provision of technical support for development of “green” business; (iii) strengthening monitoring programs for water quality, biodiversity, socio-economic indicators, and health risks within the protected areas, (iv) a public awareness and environmental education program, including a small grant scheme for activities that promote biodiversity conservation; (v) institutional strengthening for entities responsible for land/water management to ensure sustainable management of the restored sites and surrounding landscape; and (vi) developing strategic guidelines to support the preparation of a nation-wide nutrient reduction strategy.

The GEF funds will finance consultancy services for the preparation of nutrient reduction strategy guidelines, development of the contingency relief and farmer transition support funds; study tours and field visits to exchange experiences in protected areas and wetlands management and sustainable development; formal training courses on wetlands restoration and management, protected areas management, and sustainable use of natural resources; equipment needs for the operation and maintenance of the restored wetlands and the two park administrations; civil works for the construction or rehabilitation of the park infrastructure (administration and visitor center(s), trails, interpretation points); the demarcation of park boundaries; and the organization of field visits to disseminate project progress. In addition, the GEF will capitalize the small grant scheme for biodiversity conservation, and the contingency relief and the farmer transition support funds.

A parallel project (entitled Integrated Management Planning and Administrative Capacity Building for Protected Wetlands Areas) to be financed by EU PHARE through its National Environmental Program and the Government of Bulgaria (thereafter the PHARE project), will provide technical assistance for the elaboration of protected areas management plans in Persina Nature Park (PNP) and Kalimok/Brushlen Protected Site (KBPS), the environmental education program, and the strengthening of institutions relevant to protected areas and wetlands restoration. In addition, the PHARE project will finance consultant services for the design and supervision of the monitoring system as well as the training of Bulgarian technicians to use it; training of protected areas administration staff, local authorities, local communities, and NGOs on issues relevant to protected areas management; elaboration of operational rules, procedures and fund-raising plans for the park administrations; elaboration of sustainable natural resources use programs. As part of this project, the Ministry of Environment and Water will finance the supply and installation of the equipment needed for the monitoring system.

The Austrian Government, through the Ministry of Foreign Affairs, will provide financial support to the Russe Business Support Center (BSC) for Small and Medium Enterprises to support the development of green-business proposals compatible with sustainable use of natural resources and biodiversity

conservation. The BSC with its two information centers in the project sites will target its support to rural and urban clients located within the boundaries of the protected areas. The Austrian Government will finance consultancy services to carry out feasibility studies of "green business" concepts and ideas. In addition to advice on business plan development, three forms of financial support will be provided: a machine leasing fund program, a small loans fund program, and an investment fund program to foster the development of "green" small- and medium-size enterprises.

**Component 3: Project Coordination, Management and Monitoring (Total: US\$0.89 million, GEF: US\$0.69 million, GoB: US\$0.20 million).** This component will support a Project Coordinating Unit (PCU) within the Ministry of Environment and Water (MoEW) in Sofia with field staff located in Persina Nature Park and Kalimok/Brushlen Protected Site to coordinate, manage and monitor the activities under the project. The PCU will have full responsibility for procurement, financial management, and disbursement related to the activities funded by the GEF grant; financial management reporting of overall project; monitoring/evaluation and reporting of overall project progress implementation; coordination with the Russe BSC and the PHARE-Unit within the MoEW responsible for project activities supported through parallel financing; and coordination with central ministries and their regional and local branches. Two full-time Local PCU Liaison Officer (to be funded by the project) will facilitate procurement of project related goods, works and services, coordination, and reporting of project implementation at the local level. The Local PCU Liaison Officers will provide assistance to the protected areas administrations and will be hosted within their premises. The project will provide funds to meet salaries and fees of the PCU staff and technical advisors; incremental operating expenses of the PCU; engage consultants to design and install a monitoring program for the evaluation of project impacts; engage consultants to carry out impact evaluation studies over the life of the project; and to finance auditing services over the life of the project. The project will also provide funds for an initial project launch workshop, followed by two procurement workshops, and other workshops over the project period.

## **2. Key policy and institutional reforms supported by the project:**

As discussed in the Section B.3, the GoB has made considerable efforts in developing laws and regulations covering water resources, natural habitats and protection of wild birds, and harmonizing them with EU directives. The last Regular Report on Bulgaria of the European Commission points to the necessity of strengthening the efforts for transposition of *acquis* related to nature protection as well as the need for concrete implementation measures. Implementation of transposed legislation is considered a very weak aspect in the approximation process. The Project will assist the GoB to strengthen the administration at the national, regional and local levels for the practical implementation of transposed EU legislations -- such as the adaptation of improved institutional structures and procedures, increased management capacity, and the standardization of monitoring and reporting procedures.

Improved cooperation between relevant agencies and different levels of government in the areas of planning, programming, monitoring, and control processes is paramount to reaching compliance with the EU environmental directives. The project will help improve coordination between the central, regional and local governments, local communities, and municipalities on issues such as land use policy and development planning; raise inter-sectoral and public awareness about the need to integrate environmental and socio-economic development objectives; and help develop processes to better involve the public in the decision-making process related to not only project activities but also sustainable resources management within the project sites.

## **3. Benefits and target population:**

The proposed project will bring about global, national and local benefits.

At the global level, benefits will accrue through the reduction of transboundary pollution into the Danube River and the Black Sea. Based on a recent technical assessment of the nutrient trapping capacity of the wetlands to be restored in Belene Island and Kalimok/Brushlen marshes, between 218-810 tons of nutrients and 23-37 tons of phosphorous could be reduced annually. This accounts for approximately 5% of Bulgaria's total nutrient contribution to the Danube. The primary beneficiaries from the demonstration of nutrient reduction benefits in the Danube are Bulgarians living downstream from the wetlands, other downstream riparians, and the littoral states of the Black Sea who will benefit from cleaner water. Significant global biodiversity benefits are also expected. The wetland complexes and related protected sites are of international importance as a nesting place of the Ferruginous Duck (*Aythya nyroca*) and Dalmatian Pelican (*Pelecanus crispus*). Habitats for migratory birds and a variety of endangered species will be enhanced and improved. The Project is also expected to have demonstration effects that would in time allow the restoration and management of additional wetlands along the Danube and Black Sea region.

At the regional level, Bulgaria and other riparian countries will benefit from collaborative efforts to share experiences on the use of wetlands as nutrient sinks and protected areas and wetlands management, develop regional natural resources management strategies and regional tourism opportunities, to promote international and local tourism, and carry out joint training and monitoring program. At the national level, Bulgaria will benefit from improved ecosystem productivity within PNP and KBPS; improved agricultural productivity due to better agriculture practices, progress towards compliance with EU directives, and increased capacity of existing central, regional and municipal institutions to protect and manage the Danube coastal landscape (protected areas, wetlands/aquatic ecosystems).

At the local level, the main beneficiaries will be communities who will benefit from increased fishery production, and those downstream from the wetlands who will enjoy cleaner water. Fishing has traditionally been the mainstay for communities along the Danube, but the deterioration of water quality and the destruction of breeding sites for fish has deprived a significant part of the local population from their main historical source of food and living. Where 60 years ago 5,000 fishermen operated in the areas, now only 60 remain. The restoration of the wetland sites is expected to increase fish populations and hence increase local fishermen's incomes. Fish production is estimated to reach between 800-1,000 kg in Belene Island and 4,500-5,000 kg in the Kalimok marshes, compared to the present situation where these marshes have virtually no fish fauna. Farmers can also benefit from more efficient agricultural practices, such as the management of organic waste, improved grazing practices, crop rotation, and the sale of organic produce. This in turn will translate in income increase. Small- and medium-size entrepreneurs interested in establishing "green" businesses compatible with biodiversity conservation objectives and sustainable use of natural resources will be provided with technical and financial support to develop and implement their ideas, fostering private sector development and creating new job opportunities. Local institutions, namely protected areas administrations and regional environmental inspectorates, will be strengthened.

The private farmers and rural households in PNP and KBPS are the primary beneficiaries of the project. However, the proposed project will have larger geographic impacts. It is a demonstration project that may be replicated in other areas of Bulgaria as well as other Danube/Black Sea riparian countries.

#### **4. Institutional and implementation arrangements:**

**Project Steering Committee.** During Project preparation, the MoEW coordinated the establishment of a high level Project Steering Committee (PSC), which served as the principal forum for addressing inter-sectoral issues relevant to project preparation activities. The PSC, which worked well during project preparation, will continue operating through out project implementation and will be responsible for providing overall project oversight, advice and a bridge between the various agencies and ministries -- ensuring coherence between the Project and existing/planned activities of the various agencies. The PSC will also help to resolve any issues which may arise during implementation. The PSC comprises representatives from the MoEW, MoAF, Ministry of Justice, Ministry of Economy, Ministry of Health, Ministry of Labor and Social Policy, Ministry of Regional Development and Public Works, municipalities within project sites, and NGOs. The Minister [or authorized Deputy Minister(s)] of the Ministry of Environment and Water will continue chairing the PSC, with the PCU serving as Secretariat. The Government will re-appoint the PSC to review project progress, advise and assist in resolving obstacles to project implementation.

#### **Local Consultative Councils (CCs) in Persina Nature Park and Kalimok/Brushlen Protected Site.**

The Management Concepts for both establishment of the protected areas suggest the establishment of local Consultative Councils (CCs) at the two protected areas sites to: (i) discuss issues and formulate proposals concerning the state of the park and its development; (ii) coordinate and ensure the compatibility of the management plans with regional economic development plans; (iii) ensure the interests of the local communities are represented during both the planning and implementation of the protected areas management regimes; (iv) discuss annual plans and accounts about activities of the park administrations for the implementation of the protected areas management regimes; and (v) assist in searching for funding sources for financing nature-protection activities compatible with the management regime. Specific functions will be listed in the Operational Manuals of the CCs. Apart from providing oversight and reinforce coordination at the local level during the preparation of the protected areas management plans, the local CCs can also serve as a permanent mechanism for conflict-resolution of natural resource management issues within the protected area landscape. Studies carried out during the preparation stage suggested the potential composition of the local CCs: representatives from the regional administrations, the Regional Forestry Board, the Regional Inspectorates of Environment and Water, municipalities, Forestry Units, scientific and academic institutions and NGO, unions of land and forest owners, and local media. The studies also suggested to appoint the Park Director as the chairman of the local CC with the functions to convene and organize the work of the local CC, to sign proceedings and other documents related to the work of the local CC, and to implement the local CC recommendations. Although, the PIP describes the general functions, recommended representation and chairmanship of the CCs, the specific functions will be listed in the Operational Manual of the CCs. Care should be observed in the final selection of the chairmanship of the CCs so as to avoid creating conflict of interest situations. The project will support the establishment of these local CCs at the two project areas to advice the MoEW and the protected areas management administrations on protected areas management, to improve the usefulness of the investments and to ensure that local stakeholders opinions and concerns are heard during the management planning and implementation process. Throughout the Project, the Government will ensure the maintenance of the local CCs to oversee and reinforce coordination at the local level.

Agreement has been reached on the general functions, recommended representation and chairmanship of the Consultative Councils that will be established to assist the Persina Nature Park Directorate and the Kalimok/Brushlen Protected Site Administration, which will become an integral part of the Project Implementation Plan

**Project Coordinating Unit.** A Project Preparation Unit (PPU) under the supervision of the MoEW was established during Project preparation to handle day-to-day coordination and administration of the Project's preparatory GEF. The PPU is now fully operational and will become the Project Coordinating Unit (PCU) once the implementation phase begins. The PCU will have a central office in Sofia, two local liaison officers, and significant physical presence at the two project sites. It will be responsible for overall project coordination and management, financial management activities as well as for implementation of the Environmental Management Plan and Process Framework. All financial management, procurement, disbursement procedures for the proposed activities funded by the GEF grant will be implemented in accordance with the relevant Bank guidelines. The PCU will also be responsible for establishing and maintaining a comprehensive Project monitoring and evaluation system during the life of the project. The monitoring will be based in the significant amounts of baseline data collected and to be collected during the preparatory/implementation phase and will be designed so as to measure project performance against the intended outcomes of the project -- social economic and ecological. The PCU will comprise a Project Manager, an Accountant, a Financial Management Specialist, a Procurement Specialist, a Database/GIS Management Specialist, Technical Experts (on demand), a Grants Program Officer, two local Liaison Officers, an Administrative/Technical Assistant, and a Driver. The local liaison officers will assist the Persina Nature Park and Kalimok/Brushlen Protected Site administrations in coordination associated with project implementation, and in carrying procurement of goods, works and services at the local levels under the oversight of the Procurement Specialist and in accordance with Bank requirements. The Financial Management Specialist and the Procurement Specialist will provide training to the staff of the protected areas management administrations. The procurement and financial management capacity of the two park administrations will be assessed at the end of first year implementation, and depending on the results of the assessment, responsibility for small procurement will be transferred to them.

**Institutional Arrangements for Project Implementation.** In order to ensure project sustainability and capacity building, the project will be implemented by existing entities acting at the local or regional levels. An implementation matrix, which clearly identifies functions and responsibilities for project implementation, has been developed and is included in the Project Implementation Plan (PIP). In brief, the Persina Nature Park Directorate and Kalimok/Brushlen Protected Site Administration will guide and coordinate the preparation of the protected areas management planning activities and the public awareness and education program activities, will manage the Biodiversity Conservation Small Grant Program as per the operational manual and under the supervision of the PCU, will be responsible for the operation and maintenance of restored wetlands and related protected sites, in close coordination with the Ministry of Environment and Water, the Ministry of Agriculture and Forestry, the National Forestry Board, local municipalities (Nikopol, Belene, Svishtov, Tutrakan, Slivo Pole), the Belene Prison Administration and the Regional Forestry Boards (Lovech, Veliko Turnovo and Russe). The Regional Inspectorates of Water and Environment (Pleven and Russe) will be responsible for supervising the design and installation of the monitoring equipment in close coordination with the protected areas management administrations, the Regional Hygiene and Epidemiological Inspectorates, and the Regional Directorate of the Ministry of Agriculture and Forestry, the research institutes of the Academy of Science (Zoological Institute and Hydrometeorological Institute), the Executive Agency of Environment, the National Center for Health and Epidemiology, local municipalities and NGOs. The Russe Business Support Center will be responsible for the implementation of the Eco-Business Development Support program in close coordination with the PCU. The Ministry of Environment and Water through the PHARE Unit (under the guidance of a Steering Committee) will be responsible for the procurement, contracting, and disbursement of payments related to the PHARE supported activities. A contractor to be hired under the project will be responsible for the administration of the Farmer Transition Support Fund under the close supervision of the PCU/grants program officer. The Ministry of Environment and Water in close coordination with the Belene Prison Administration, the protected areas administrations, and the local municipalities will be responsible for the

wetlands restoration component. The Water Department of the MoEW will take the lead in the coordination of activities towards the development of the national strategic nutrient reduction guidelines. The MoEW/PCU through the grants program officer and the local liaison officers and in close coordination with the protected areas administration will be responsible for the implementation of the Contingency Relief Fund.

**Financial Management.** The PCU will be responsible for all financial management aspects of the Project. All financial management and disbursement procedures will be in accordance with the relevant World Bank guidelines. The Bulgarian Government, through the PCU, will establish and maintain through the life of the project a project financial management system (FMS) in a format acceptable to the Bank and in accordance with OP/BP 10.02. Before project appraisal, a World Bank accredited Financial Management Specialist performed a detailed assessment of the system in accordance with the Bank's OP/BP 10.02 and the World Bank project financial management requirements. The result of the assessment is that the Project arrangements met the minimum World Bank financial management requirements. Additional actions and steps agreed with the Government to strengthen the system have been successfully completed, with the exception of the appointment of the project auditor and accountant (expected by June 30, 2002).

With regard to financial accounting and reporting, the PCU will keep separate project accounts, by each financing source and by each project component and activity. The project accounts will then be consolidated in the accounting records of the MoEW, with the PCU submitting detailed monthly reports to the MoEW accounting department. The PCU will prepare quarterly Financial Monitoring Reports (FMRs) in accordance with formats agreed with the Bank during negotiations. The Government expressed its preference to continue preparing the Project Management Reports (PMRs), which are produced by the existing software system as the FMRs. The FMRs will be submitted to the World Bank no later than 45 days after each quarter's end. The first quarterly FMRs will be submitted after the end of the quarter in which disbursements commence. FMRs formats to be used by the Russe BSC and EU PHARE Unit will also be designed to ensure compatibility with the Project financial requirements. The frequency of reporting will be on a quarterly basis.

With regard to audit arrangements, the project annual financial statements will be audited each fiscal year in accordance with Bank guidelines, by independent auditors acceptable to the Bank, based on terms of reference agreed with the World Bank. Conclusion of a contract with selected auditors, satisfactory to the Bank, will be a condition of effectiveness in the Grant Agreement. Copies of the audit reports will be submitted to the Bank within six months after the close of the fiscal year (calendar year). The audit reports will cover the Project Financial Statements, Special Account, as well as all the Statement of Expenses (SOEs). The Russe BSC and EU PHARE-Unit will be required to submit copies of the annual audit reports and supporting documents, which will be reviewed by the Project's auditor.

Disbursements from the Grant be made based on traditional disbursement methods (i.e., from the Special Account with reimbursements made based on Statements of Expenditures (SOEs) and full documentation, and direct payments from the Grant Account). The Government, through the MoEW will establish, maintain and operate, under terms and conditions acceptable to the Bank, a Special Account (SA) denominated in US Dollars at the Bulgarian National Bank. The PCU will also use local project accounts for local contributions to the Project.

A detailed description of the financial management and accounting system that will be used for the project is presented in Annex 6.

**Project Monitoring and Evaluation.** In order to ensure timely and successful project implementation and continual feedback to enhance project's impacts, a monitoring and evaluation system will be put in place.

Monitoring and evaluation will be the responsibility of the PCU. Monitoring will be based on the baseline surveys (i.e., environmental, socio-economic) carried out during project preparation, the feedback from the monitoring and evaluation system itself, additional surveys to be carried out as part of the baseline studies, project objectives, intended outcomes, as well as annual impact evaluation studies to be carried out during the life of the project. A simple management information system for project's monitoring and evaluation will be designed by the PCU, including reporting formats for both the wetlands restoration and the protected areas management components and the monitoring indicators listed in Annex 1. Quarterly and consolidated annual reports including the use of project funds and project impacts will be prepared by the PCU. Significant supervision by qualified Bank staff will be conducted during the start-up phase. A mid-term review will be carried out to assess overall project progress, identify lessons learned and disseminate good practices. This process will be closely coordinated with the review of similar projects in the Danube and Black Sea Programs to allow for maximum benefits and sharing of knowledge.

## **D. Project Rationale**

### **1. Project alternatives considered and reasons for rejection:**

**Pilot project approach.** The option of limiting the scope of the project to pilot wetlands restoration for nutrient trapping was abandoned in favor of a more comprehensive approach in line with the Government strategy to reduce transboundary nutrient loads, to conserve biodiversity and achieve sustainable rural development through improved management of natural resources that is socially sustainable. The project will focus on testing nutrient trapping potential of restored wetlands, supporting critical steps towards restoration and protection of natural resources, including protected areas management planning, introduction of improved agriculture practices and support for alternative income generating activities. This more comprehensive approach provides for long-term sustainability of the project results. Other existing programs which have the potential to support similar activities (more environment-friendly agricultural practices and developing alternative income generating activities) currently have such stringent requirements (e.g., large up-front contribution and land holding size requirements) that the farmers in the two project sites cannot benefit from them.

**Addressing point-source versus non-point source pollution.** A second alternative was to focus on point-source pollution (e.g., waste water treatment and industrial discharge). GEF funds would have financed the incremental costs of nutrient removal technology if governments were willing to borrow for baseline costs to the level (at least secondary treatment) where nutrient removal could be added. This option is unaffordable by the GoB in its current economic situation. Moreover, since more of the nutrient loads entering into the Danube River are from non-point sources, they can not be addressed through conventional wastewater treatment plants. The current project offers a relatively low-cost opportunity to address water pollution and water quality issues for small settlements along the Danube and its tributaries. Wetland restoration requires significantly lower construction and maintenance costs than wastewater treatment plans with capacity to reduce concentrations of total nitrogen and total phosphorus, while at the same time providing a very effective system for of the removal of nutrients from large quantities of water. The on-going Bank-funded Water Companies Restructuring and Modernization Project in Bulgaria is facing difficulties to obtain nutrient reduction through it.

**Selection of sites.** The two restoration sites selected for the initial phase of the Project were carefully considered in consultation with the MoEW. A wealth of analytical work exists on both the Danube and Black Sea, making decisions easier in some ways, but more difficult in others. Both the Bulgarian National Wetland Strategy and the Biodiversity Strategy identify key wetlands from a biodiversity perspective. In

consultation with the Government and the Danube River Pollution Reduction Program, specific criteria were established and each wetland site measured against these. Criteria included: nutrient reduction potential (based on their size and hydrological characteristics), current land use, and demonstration value. Several promising sites from a biodiversity perspective were not selected for some of the following reasons: limited nutrient reduction capacity, conflict over land use, or technical implementation difficulties.

## 2. Major related projects financed by the Bank and/or other development agencies (completed, ongoing and planned).

| Sector Issue  | Project   | Latest Supervision (PSR) Ratings<br>(Bank-financed projects only) |                            |
|---|---|---|----------------------------|
|   |   | Implementation Progress (IP)                                      | Development Objective (DO) |
| <b>Bank-financed</b>  |   |   |                            |
| Environmental regulations and incentives.   | Bulgaria: Environmental and Privatization Support Project (IBRD Ln. No. 45380).                     | S   | S                          |
| Water supply and sewerage infrastructure.   | Bulgaria: Water Companies Restructuring and Modernization Project (IBRD Ln. No. 37390/3739A/3739S). | S   | S                          |
| Environmental regulations.  | Bulgaria: Environmental Remediation Pilot Project (IBRD Ln. No. 43210.)                             | S   | S                          |
| Cadastre and real estate property registration systems to improve natural resources management. | Bulgaria: Registration and Cadastre Project (IBRD Ln. No.46190).                                    | S   | S                          |
| Protected areas management institutions.  | Ukraine: Danube Delta Biodiversity Project (GEF Grant 28654).                                       | S   | S                          |
| Agriculture credit.   | Bulgaria: Rural Finance APL (FY05 under preparation)  |   |                            |
| Forestry sector.  | Bulgaria: Forestry (FY04 under preparation).  |   |                            |
| Development of an efficient and responsive agricultural sector.                                 | Bulgaria: Agriculture Sector Adjustment Loan II (IBRD Loan No. 46300).                              | S   | S                          |
| <b>Other development agencies</b>   |   |   |                            |
| Create a network of protected areas wetlands along the Danube.                                  | Lower Green Danube Corridor Program (WWF).  |   |                            |
| Support for sustainable management of ecosystems including wetlands.                            | Joint Action Program for the Danube River Basin - ICPDR.  |   |                            |
| Strategy for protection and restoration of floodplain forests.                                  | Floodplain Forest Restoration on the Bulgarian Danube Islands, 2000-2001 (WWF).                     |   |                            |
| Implement the national biological biodiversity conservation strategy.                           | Bulgaria: Biodiversity Conservation and Economic Growth Project (USAID).                            |   |                            |

IP/DO Ratings: HS (Highly Satisfactory), S (Satisfactory), U (Unsatisfactory), HU (Highly Unsatisfactory)

### **3. Lessons learned and reflected in the project design:**

Experience from wetlands restoration and pollution abatement programs in Europe and around the world suggest that:

- The early involvement in project concept design of key stakeholders from across the water, agriculture, and environment sectors as well as of local communities is essential in order to ensure ownership, build lasting commitment and achieve successful project implementation.
- The rationale, benefits and objectives of the project should be made known to all stakeholders, if not through active participation, then through effective public awareness programs. The benefits of sustainable land use need to be demonstrated and the results widely disseminated.
- Problems should be solved jointly with clients and not for them. Capacity and skills transfer can only be achieved by working with clients, to do otherwise is to leave solutions that are unsustainable.
- Maintaining support for central governmental units, but emphasizing decentralized responsibility for financial and project management (e.g. Romania's Danube Delta Biodiversity and Agricultural Pollution Control Projects) helps to build local ownership and sustainability of project activities.
- Socio-economic and regional development issues need to be carefully considered in the design of the project, which in turn should provide support for the integration of environmental and sustainable development principles into regional planning exercises.
- Early on, the project needs to focus on activities which promote replication, sustainability and resource mobilization beyond the life of the project.
- Continuity in supervision responsibility contributes greatly to the relationship between the Bank and its client.

World Bank experience with the Bulgaria country portfolio indicates that:

- In order to avoid delays in disbursements, forward planning of budget needs to be ensured early in project preparation and carefully monitored during each of Bulgaria's budget years.
- Significant effort must be undertaken to ensure project management capacity is adequate to permit implementation of complex activities and policy measures with efficacy and speed.
- While direct participation of sector ministries is essential for the implementation of individual projects, successful implementation relies heavily on good relationships and cooperation from central units such as the Ministry of Finance when it comes to dealing with issues such as counterpart funding, VAT, financial management, approval processes and procedures, technical exchange of views on legislation.

The proposed program will incorporate these experiences and build on them, specifically by: (i) continuing the inclusive and participatory approach; (ii) effectively communicating the purpose and progress of the program to stakeholders through a public awareness campaign; and (iii) building national and local capacity for sustainable management of wetlands.

#### **4. Indications of borrower and recipient commitment and ownership:**

The Government of Bulgaria has taken a lead role in efforts to establish a network of wetland and floodplain sites in the Lower Danube. In 1999, the MoEW, the MoAF and the Ministry of Regional Development and Public Works signed a declaration on wetlands in the Bulgarian part of the Danube Basin, which recognized the importance of the Danubian wetlands as a unique habitat and a valuable resource under threat, and identified measures were needed for wetland protection and restoration. In June 2000, the Government of Bulgaria signed the Lower Danube Green Corridor Declaration, and committed itself to establish a corridor of restored and protected wetlands along the Danube. In April 2001, the Government took an active role in the Danube-Carpathian Heads of State Summit convened by the Government of Romania, where the Heads of States adopted a Declaration on Environment and Sustainable Development in the Carpathian and Danube Region. This collaboration continues today with periodic inter-governmental meetings. Throughout, the MoEW, which represents Bulgaria on the Danube Commission, has worked closely with World Wildlife Fund for Nature (WWF) Danube-Carpathian Office (DCPO). Over the past ten years, the WWF-DCPO has assisted the GoB in developing the Bulgarian wetland protection and restoration program to prepare its wetland restoration program which has, to some extent, culminated in the declarations mentioned above and the request for the current GEF Project. In 1999, the Bank joined the MoEW and WWF-DCPO to move forward on this investment operation which met the criteria for inclusion in the GEF/Bank Strategic Partnership for Nutrient Reduction.

The project scope expanded from the original request focussed on wetland restoration to include national level activities for improved water resources management, assistance in developing national restoration and rehabilitation strategies and policy formulation/implementation for nutrient reduction. The Government views these as an integrated package of measures needed to address water and land-use issues at their interface, and has asked the Bank, through the GEF for assistance.

#### **5. Value added of Bank and Global support in this project:**

The Bank has assisted the Government formulate a strategy to comply with EU environment legislation and to meet the expected high costs. The main issue involves financing. The proposed project may provide an alternative to high-cost investment in infrastructure if the expected improvements in water quality from non-point source pollution are forthcoming. The Bank is in a unique position to help the government synthesize experiences and lessons learned from this project and from several other related projects in the water and agriculture sectors (Agriculture Structural Adjustment Loan, Land Cadastre), as well as its considerable experience in regional integrated river basin planning and management, to help implement the new water policy and assist the Government in its negotiations with the EU.

Secondly, the Bank plays an important role in helping coordinate donor assistance. Given the number of donors assisting Bulgaria, this role is needed to coordinate investments, technical assistance, and policy advice. The Bank can do this within the context of the CAS and through its regular participation in donor coordination dialogue.

In addition, the World Bank/GEF has built experience over the past decade involving numerous coastal zone, wetland, water quality and protected areas management projects related to the Black Sea and Danube River. Experience garnered through such projects as the Ukraine Danube Biodiversity Project, the Romania Danube Delta and Georgia Integrated Coastal Management Projects and coordination with the Black Sea Environment, Danube River Basin Environment and Danube Pollution Reduction Programs is being shared with newly started projects.

## E. Summary Project Analysis (Detailed assessments are in the project file, see Annex 8)

### 1. Economic (see Annex 4):

Cost benefit NPV=US\$ million; ERR = % (see Annex 4)

Cost effectiveness

Incremental Cost

Other (specify)

Two economic analyses have been carried out to demonstrate that this project is a worthwhile investment to be funded by the Global Environmental Facility: (i) an incremental cost analysis, and (ii) a cost-effectiveness analysis.

The first analysis utilizes the typical incremental cost assessment to demonstrate the project meets the GEF requirement. The incremental cost of achieving global benefits in this project has been estimated at US\$12.05 million of a total project cost of \$13.28 million. This total cost is restricted to those expenditures directly related to the nutrient reduction program focusing on wetlands restoration and nutrient-friendly agriculture and supporting protected areas management activities. The Government of Bulgaria has committed to finance US\$2.90 million for the GEF alternative; US\$0.15 will be leveraged from local municipalities and communities; US\$1.59 from the EU PHARE national program; US\$0.38 million from the Austrian Government; and US\$0.76 million from other bilateral donors. The GEF grant contribution towards the GEF alternative would be US\$7.5 million.

The second analysis compares the cost-effectiveness ratios of removing nitrates and phosphorous flowing into the Black Sea, defined as the ratio of the discounted cost (capital and operation and maintenance costs discounted at 10 percent) to the discounted volume of nitrogen and phosphorous (also discounted at 10 percent) removed during the life of the project (a conservative value of 12 years has been assumed), with those ratios used in the benefit-cost analysis of the Danube/Black Sea Strategic Partnership, which were defined on the basis of international benchmarks. The estimates of the cost-effectiveness ratios are presented in the table below. The cost-effectiveness ratios, based on the assumptions presented in Annex 4, were found in the order of US\$1.3 - 5.0 per kilogram of nitrogen removed and US\$28.9 - 46.2 per kilogram of phosphorous removed. Since the costs per kilogram of nutrients removed for this project are expected to be lower than those acceptable under the Strategic Partnership, it is safe to say that the restoration of Belene Island and Kalimok marshes will be highly cost-effective for nitrogen and phosphorous reduction into the Black Sea.

| <b>Item</b>  | <b>Wetlands Restoration <u>a</u></b> | <b>Partnership <u>b</u></b> |
|--|--------------------------------------|-----------------------------|
| Annual volume of nitrogen (N) removed (kg/year)    | 241,400 - 850,400                    |                             |
| Annual volume of phosphorous (P) removed (kg/year) | 23,400 - 37,400                      |                             |
| Total capital costs (US\$ million)                 | 4.53                                 |                             |
| Annual operation and maintenance cost (US\$)       | 60,000                               |                             |
| Net present value of costs at 10% (US\$ million)   | 5.0                                  |                             |
| Cost-effectiveness                                 |                                      |                             |
| - Nitrogen removed (US\$/kg)                       | 1.3 - 5.7                            | 5.8 - 8.75                  |
| - Phosphorous removed (US\$/kg)                    | 26.1 - 53.8                          | 58.00 - 88.0                |

**Notes:**

- a. A general estimation of nitrogen and phosphorous retention in wetlands based on extensive literature research, carried out during the preparatory phase. The monitoring component of the project is particularly important since the monitoring information gathered will serve as one of main sources of data to derive an exact measure of nutrient retention in restored wetlands. Total capital costs include all restoration work and estimated losses resulting from indirect flooding.
- b. The ratios presented in the "Strategic Partnership for Nutrient Reduction in the Danube River Basin and Black Sea - Benefit-Cost Analysis, prepared by Tijen Arin (Consultant, ECSSD), only include annualized capital cost. Inclusion of annual operation and maintenance costs would increase these ratios.

It should also be noticed that the leveraging ratio for this project on the basis of the firm co-financing (i.e., Government of Bulgaria, Austria Government and EU PHARE) is about 1.0:0.67 (i.e., for every US dollar provided by GEF, 67 US cents have been leveraged from other sources). Thus, the project meets the minimum Danube/Black Sea Strategic Partnership leveraging requirement for wetlands restoration projects set at 1.0:0.5.

**2. Financial (see Annex 4 and Annex 5):**

NPV=US\$ million; FRR = % (see Annex 4)

No detailed financial analysis was undertaken since the WRPRP is a non-revenue generating project. The objective of the project of removing nutrients flowing into the Black Sea may not be achieved if the Government of Bulgaria does not commit adequate resources for the operation and maintenance of the restored wetlands as well as for the operation and maintenance of the monitoring system. The Government has committed during negotiations to provide adequate funds to cover estimated recurrent expenditures on an increasing basis. The project, in turn, will contribute to cover recurrent expenditures for 5 years on a declining basis. As shown below, the Government budgetary contribution to the project is not expected to significantly exceed current budgetary allocations to the sector.

The proposed project will be co-financed on a parallel financing basis by the EU PHARE national program and a grant from the Government of Austria. There is still a financing gap of about US\$0.8 million to cover the cost of the activities planned under the restoration of additional sites sub-component. The MoEW is seeking co-financing from other donors.

**Fiscal Impact:**

Total government financing during the project implementation period is estimated at US\$2.90 million -- US\$1.69 million represents taxes, about US\$0.99 million represents Government contribution for the EU PHARE project, and US\$230,000 represents government counterpart funds (in cash) for the GEF grant. The Government has committed to provide counterpart funds in its budget. Of the total project cost (US\$13.28 million), about 3.6 percent represents recurrent costs for the monitoring system, management of restored wetlands and protected areas management administrations. The annualized recurrent costs have been estimated at around US\$100,000, inclusive of taxes. These costs will be financed by the project on a declining basis: 90 percent first year, 85 percent second year, 75 percent third year, 50 percent fourth year, and 25 percent fifth year. The annual net fiscal impact of the project is expected to be as follows: during CY02 around 0.00004% of GDP, CY03 around 0.0025% of GDP, CY04 around 0.0026% of GDP, CY05 around 0.0026% of GDP, CY06 around 0.0005% of GDP, and CY07 onwards about 0.0006% of GDP.

**3. Technical:**

During the preparatory phase, a technical assessment at the pre-feasibility level for the restoration of the

two already identified sites was carried out. The assessment found that the restoration of 1,290 hectares of former marshes in Belene Island and 1,050 hectares of former marshes in Kalimok is technically feasible and that private land will not be directly impacted by the restoration and management of wetlands. Emphasis was placed on ensuring that the restoration of wetlands can be met under the current hydrological regime in the Danube river, and that the proposed restoration measures indeed maximize the water flow through the system in order to optimize nutrient trapping, promote biodiversity restoration, and increase fish production. Restoration to former natural dynamic wetland system conditions is not feasible because the hydrological regime of the Danube (in terms of river flows and water levels) has changed considerably over the past 30 years as a result of the construction of the Iron Gate Dams I and II and the lower average annual precipitation since 1970 than in the period 1900-1970. The project involves the intake of about 10 cubic meters per second, which is a fraction of a percent of the minimum flow of the Danube (0.4%), and the return of 8 cubic meters per second of water of improved quality. The maximum evapo-transpiration rate from the restored wetlands is estimated at 2 cubic meters per second during the summer months.

Before the project moves into the implementation stage, the PCU with the support of consultants will carry out additional modelling work in order to address several shortfalls identified in the review of the water balance model developed during the preparatory phase, namely, no inclusion of the infiltration of surface inflow from the Danube River through the dikes, limited assessment of rising of groundwater tables in the floodplain, and limited assessment of the potential impacts of the proposed selected restoration scenarios on the surrounding agriculture lands currently under production and the existing drainage and irrigation infrastructure and drinking water wells. The improved water balance model will allow a better understanding of the quantitative effects of the proposed infrastructure measures in the project area as well as of the functioning of the restored wetlands.

Feasibility and detailed design of control structures will be done in the course of project implementation following detailed field surveys and investigations, for which provisions have been made under the project. The detailed design for the restoration of Belene and Kalimok marshes will observe the following conditions: (i) at Belene, the maximum flooding level to be achieved in wetland would be 20 meter and at Kalimok 14 meters; (ii) flooding levels in the wetlands would not adversely affect private or state land to remain under agriculture production; (iii) necessary margins of safety would be included in the infrastructure design to comply with international and Bulgarian standards; (iv) inlet and outlet structures would be easily accessible and operated manually; (v) all structures would be designed to protect or be protected against undesirable erosion and excessive sedimentation deposition; (vi) dike crests would be used as access roads; and (vii) access to the Danube would be provided at few strategic points. Project implementation would need to be approached with a reasonable level of flexibility given the uncertainty associated with cost estimates.

Estimation of the nutrient reduction potential was carried out on the basis of international experience in other regions and extensive literature research, with data adapted to the size and general characteristics of the selected restoration sites (e.g., permanent water bodies, water depth, timing of flooding, vegetation) and local experience in Lake Srebarna ecosystems, a wetland on the right bank of the Danube. Experience in Denmark and Sweden achieved annual reductions of 400 kilogram per hectare of nitrogen and 40 kilograms per hectare of phosphorous. In the case of Bulgaria, expected annual nutrient reduction, as shown in tables below, ranges between 218,000 - 813,000 kilograms of nitrogen and 23,400-37,400 kilogram of phosphorous, i.e., 93-347 kilogram per hectare per year of nitrogen and 10-26 kilogram per hectare of phosphorous.

| Habitat in Belene                        | Total Area (ha) | Nitrogen (kg)   | Phosphorous (kg) |
|--|-----------------|-----------------|------------------|
| Reed/lesser reed mace community <u>a</u> | 211             | 32,000 – 41,000 | 1,700 – 2,300    |
| Flooded forests                          | 223             | 8,900 – 13,000  | 1,300 – 1,600    |
| Flooded meadow                           | 271             | 30,000 – 51,000 | 1,900 – 4,000    |
| Area with active denitrification         | 353             | 3,500 – 20,4000 |                  |
| Total                                    |                 | 74,000-310,000  | 7,800-12,000     |

| Habitat in Kalimok                       | Total Area (ha) | Nitrogen (kg)     | Phosphorous (kg) |
|--|-----------------|-------------------|------------------|
| Reed/lesser reed mace community <u>a</u> | 420             | 63,000 – 81,000   | 3,400 – 4,600    |
| Flooded forests                          | 130             | 5,200 – 7,800     | 740 - 910        |
| Flooded meadow                           | 650             | 71,000 – 124,000  | 5,000 – 10,600   |
| Area with active denitrification         | 500             | 5,000 – 290,000   |                  |
| Total                                    |                 | 144,000 – 503,000 | 15,600 – 25,400  |

**Note:**

- a. Wetland plants, such as reeds, filter nutrients and other pollutants and precipitate them from the water, transfer atmospheric oxygen down to the root zone creating aerobic and anaerobic soil conditions, and assimilating, processing and storing nutrients. While nitrogen is removed through nitrification and denitrification in the oxygenated and anoxic areas of the roots, phosphates are mostly absorbed by the roots. Nutrients are not only stored in the reeds, but are degraded into harmless components.

**4. Institutional:**

While the MoEW is the lead implementation agency, the active participation of several other Ministries, agencies, local government, NGOs and scientists will be critical to its success. Thus, the role, composition and mandate of the Project Steering Committee (PSC) is extremely important (see section C.4).

The management of wetlands, natural resources and protected areas is responsibility of the Ministry of Environment and Water and the Ministry of Agriculture and Forestry. Staff from these two organizations are well educated, technically trained, and highly committed to their jobs. Although no major issue is foreseen with regard to their capacity to implement the project, some of the local implementing agencies face limited operational budgets, skills on wetlands management and public education / involvement, and exposure to international experience -- particularly the protected areas park administrations. The project fills these gaps by creating an enabling environment for the Government and local administrations to ensure proper operation and management of the restored wetlands and protected areas thereafter. The project builds staff skills needed to achieve project objectives, and promotes collaboration and partnerships on wetlands and protected areas management with colleagues and organizations elsewhere in central and western Europe. As the management of the Kalimok/Brushlen Protected Site will be done by a new and innovative structure -- a non-profit Association to be legally established by October 31, 2002 -- there will be a close supervision by the MoEW staff as well as Bank supervision missions.

**4.1 Executing agencies:**

The Ministry of Environment and Water will be the line Ministry with overall responsibility of project

implementation, and will work in close coordination with other stakeholder agencies and beneficiary groups. Project activities will be implemented by existing entities at the local or regional levels, assisted by the central ministries in Sofia as needed.

#### 4.2 Project management:

The Project Steering Committee has been established for the preparatory phase and will continue functioning during project implementation and will be maintained throughout the project with composition and functions satisfactory to the Bank. (Terms of reference of the PSC are included in the Project Implementation Plan). The Steering Committee will be chaired by the Minister (or authorized Deputy Minister) of the Ministry of Environment and Water. Project coordination, management, and monitoring will be handled by a Project Coordination Unit (PCU), with a central office in Sofia, two local liaison officers, and significant physical presence at the two project sites. The PCU will be responsible for overall project coordination and management, financial management activities as well as for implementation of the Environmental Management Plan and Process Framework. All financial management, procurement, disbursement procedures for the proposed activities funded by the GEF grant will be implemented in accordance with the relevant Bank guidelines. The PCU will also be responsible for establishing and maintaining a comprehensive Project monitoring and evaluation system during the life of the project. The current Project Preparation Unit (PPU), established under the MoEW for the preparatory phase, will evolve into the PCU following Board presentation. The current staff of PPU (a Project Manager, Procurement Specialist, Financial Management Specialist, and Database Management Specialist) are adequately familiar with Bank procurement, disbursement, and financial management requirements. After project effectiveness, additional PCU staff such as Local Liaison Officers, Grants Program Officer, technical assistant, and driver will be recruited, and technical advisors will be appointed.

#### 4.3 Procurement issues:

An ongoing Joint Portfolio Review Procurement reveals that the major procurement processing issues encountered in 2001 mainly take the form of delays in processing procurement actions and securing all the needed approvals. Generally, PIUs have sufficient knowledge and capacity for handling procurement under World Bank guidelines and procedures. However, this knowledge needs to be matched by equal understanding of the process by those in the respective line ministries who have decision-making and approval responsibilities.

An assessment of the capacity of the PPU (future PCU as indicated in section above) to implement the project procurement plan was carried out in November 2001. A copy of the assessment report is included in the Project Implementation Plan. The review addressed legal and regulation aspects, procurement cycle management, organization and functions, support and control systems, record keeping, staffing issues, general procurement environment, private sector assessment, and made a general risk assessment. The main findings of the assessment were: (i) the wording of the laws and ordinances is not sufficiently clear and comprehensive; (ii) the operational rules for various procurement methods are not clearly established and therefore are subject to interpretation; (iii) although the PCU has acquired good experience in carrying out Bank-financed procurement, the local staff and the park administrations have no experience; and (iv) the PCU will operated in a public procurement environment, which is not transparent and competitive.

The assessment also identified that the lengthy contract approval procedures within the Ministry of Environment and Water jeopardizes conducting procurement in a timely and efficient manner. The assessment rated the overall project's risk from the point of view of procurement as high. During project preparation, it was agreed that the following action plan will be implemented to mitigate the risk: (i) the PCU project manager and procurement specialist would receive procurement training at the ILO, Turin,

Italy, as soon as the Grant becomes effective; (ii) prior to Grant effectiveness and after Board approval, a three-day procurement launch workshop will be held for the staff involved in implementing the project, including protected areas management administration and local municipalities; (iii) in order to streamline contract approval and payment procedures, contact persons will be appointed in the several departments of the MoEW as well as timely submission of invoices/documentation related to payments made directly by the MoEW by the accounting department of the MoEW; (iv) prior to Board approval, the Bank staff will prepare a procurement book containing all procurement related documents, including Standard Bidding Documents, both in hard and soft copies, and will send it to PCU; (v) one year after Grant effectiveness, the conduct of procurement under the project will be reviewed in light of the potential procurement risks, and recommendations made if necessary, to improve the procurement process; and (vi) carry out intensive supervision during the first three supervision missions. The Government has already taken steps to put in place a computerized procurement monitoring system, which was identified during the assessment as a Board condition.

#### 4.4 Financial management issues:

The first Country Financial Assessment Audit for Bulgaria will be carried out after 2002. When finalized, the document will present in detail the financial management risks for the country and the implications for the World Bank operations. From the financial management perspective, the Project is considered a substantial-risk operation and major risks in the financial management area are presented below:

**Country generic risks.** The main country financial management generic issues and risks are as follows: (i) there have been some reforms in the public sector financial management of Bulgaria; (ii) the banking sector system risk is perceived as relatively low; (iii) the accounting standards have been modified to adhere closely to International Accounting Standards (IAS); (iv) the macroeconomic situation has improved substantially since 1998, with solid economic growth achieved, inflation has been brought down to single digits figures, thus it is perceived that the macroeconomic risks are quite low; and (v) the Supreme Audit Institution (SAI) in Bulgaria is undergoing a reform process that will improve its capacity to carry out an independent external audit on the Government accounts.

**Project specific risks.** One substantial risk is that the Project is exposed to delays in payments to suppliers: (i) due to the signatures required on both GEF Grant funds and Government contribution, and (ii) inadequate counterpart funds in the Government project account. The signing mechanism proposed for the operation of the above accounts is acceptable, and since one office of the PCU will be located in Sofia and within the MoEW, all the signatures required will be obtained in a timely manner. The experience during the preparatory phase has demonstrated that the signing mechanism does not pose significant delay risks. On the issue of Government contribution, commitment has been obtained during negotiations that the Government will provide the needed counterparts funds in a timely manner. The Project will operate under the following procedures: (i) all payment orders will be signed jointly by the PCU manager and a high level officer (such as the General Secretary or Chief Accountant of the MoEW); (ii) the beneficiaries' representatives will certify the acceptance of the works done, goods delivered and services rendered before the payments are made by the PCU; (iii) segregation of duties amongst PCU staff members; and (iv) project financial statements will be audited by an external auditor, acceptable to the World Bank. Overall, the above Project risks are considered manageable due to the various risk mitigations measures proposed (see details in Annex 6).

Overall, the above mentioned risks are considered as manageable due to the various risk mitigations measures proposed. Annex 6b presents in detail the full description of the risk mitigation measures.

## **5. Environmental:**

Environmental Category: B (Partial Assessment)

5.1 Summarize the steps undertaken for environmental assessment and EMP preparation (including consultation and disclosure) and the significant issues and their treatment emerging from this analysis.

The project will finance the restoration of former Danubian marshes, with the major environmental objective to reduce the amount of nutrients flowing into the Black Sea; making the project environmentally beneficial. Apart from the earth dykes and drainage channels planned to protect productive agricultural lands, no new physical structures of significant size will be built and no major adverse environmental impacts are expected. Given the nature of the restoration work, the project has been classified as environmental category "B." This classification is consistent with Bulgarian environmental impact assessment regulations and the requirements of the World Bank outlined in Operational Policy (OP) 4.01 on Environmental Assessment. Consistent with the provisions of OP 4.01 and Bulgarian environmental legislation -- notably the Protected Areas Act (1998, 1999, 2000), the Regulation No 4/2001 on Environmental Impact Assessment, the Water Act (1999) -- an Environmental Assessment (EA) was carried out during the project preparation based on the technical information provided by the Project Preparation Unit of the MoEW and its consultants. A combination of quantitative and qualitative assessment techniques (ranging from desk-based analysis, to water and social surveys) have been undertaken.

The Environmental Assessment describes existing environmental conditions at the two project sites (including climate, hydrology, soil and water quality, groundwater and biodiversity) and assesses the potential impacts on these conditions from implementation of the project, during the construction and operation phases. The Environmental Management Plan (EMP) identifies a number of mitigation and monitoring activities which will address these potential impacts and therefore provides an adequate safeguard for the environment. The environmental impact assessment concluded that, provided mitigation measures described in the EMP are followed, the proposed activities are in compliance with the environmental requirements of both the Government of Bulgaria and the World Bank with respect to restoration developments of this nature.

**Alternatives:** A brief analysis was conducted of several technical alternatives to the proposed restoration schemes, including the non-restoration alternative. The no-restoration alternative was found to be nonviable from an environmental point of view. Other technical alternatives were found nonviable due to technical and/or social aspects.

For Belene Island, five restoration alternatives were assessed. In general, the EA supports the idea of regulated flood levels in the project area at 20 meters above sea level, as is provided for in Alternative 4 of the proposed technical alternatives. A higher level (21 m) would provide a much larger wetland area (2,070 ha, compared to 1,290 ha), but this level would be available for only a few days of the year. The pumping required to obtain 21 m level would be excessively costly and, in fact, the level would be extremely difficult to maintain due to the porous nature of the subsoil. The proposed level of flooding of 20 m ensures a flooding duration of 50-60 days annually -- sufficient from an ecological point of view. Two of the analyzed technical alternatives propose water intakes at the southern part of the Belene island, but these options were later ruled out due to the potential impact of hot water emissions in the future from the Belene Nuclear Power Plant, whose construction has been stopped (with no clear plans to start up again in the near future). Alternatives that propose water intakes at the northern part of the island remain preferred options. The EA supports the northern alternatives, but with additional internal dykes protecting agricultural lands to the west of the wetlands. This recommendation will be further evaluated as part of the detailed technical design, which will evaluate the risk of bogging and salinization of these agricultural lands, and develop a draining system which will function in the western part of the island (and protect

existing economic activities and existing infrastructure).

Three restoration alternatives were assessed for Kalimok marshes. The EA accepts the recommendation of flooding to 14 m above the sea level, which would ensure flood durations of 60 days annually. Artificial maintenance of the level of the marshes by pumping systems (as is proposed for both alternatives) will be unsustainable. The assessment supports that most of the existing dykes should be kept in their current position, so that the flooding regime will be mostly controlled by the sluices. The sluices should be designed taking into account the possibility for migration of fish species from the lower stretch of the Danube. If needed, they should be equipped with adequate fish ladders.

The EA identified the following potential negative impacts of the project: (i) there is a risk that reduced pollution and increased fish stocks as a result of wetland restoration activities will not materialized; (ii) there is risk of indirect flooding and raising groundwater levels on arable and non-arable land, buildings, irrigation and drainage structures, roads, and other infrastructure; (iii) there is a health risk associated with the potential increase in mosquito population, malaria risk and fish contamination; and (iv) disposing of excavated soils. Other issues relate to the impacts on biodiversity, habitats and rare species caused by contractors during the construction phase.

As part of the environmental assessment process, public consultations were held during the preparation of the EA with several stakeholders at the local levels in three phases. First, consultation with stakeholders were organized during the initial stage, which helped identify key social/environmental issues and provided information on stakeholders' concerns about, and views of, potential environmental impacts. [The same team that conducted the environmental assessment also conducted the social assessment.] Prior to the public disclosure of the draft EIA, the second phase of consultation consisted of public meetings at the two project sites, to share with all interested stakeholders the key findings of the assessment and the proposed mitigation and management options. Upon public disclosure of the draft final EIA, public hearings were organized in the two project sites. During the consultation process, local populations did not voice any major concerns about the project.

## 5.2 What are the main features of the EMP and are they adequate?

The detailed Environmental Management Plan (EMP), included as an annex in the Project Implementation Plan, includes monitoring and mitigation activities for two restoration sites at different stages during project preparation and implementation. The EMP includes: (i) the elaboration of a manual for sustainable management of the water regimes in the wetlands, such as procedures in the event of accidental pollution, sharp changes in water levels, floods, consideration of the breeding requirements of fish, birds, provision of optimal treatment capacity; (ii) removal of top soil before starting civil works; (iii) a specialized study for evaluation of risk from flooding and negative impact on the ground water; (iv) the elaboration of a mosquito management plan; (v) the elaboration of environmental management guidelines for constructors; (vi) the selection of suitable landfills for disposal of waste from the construction phase; (vii) the establishment of a comprehensive monitoring program for nutrient trapping, groundwater level and quality, biodiversity, fishery, soil, and mosquito population to measure project impacts on the environment; (viii) the training of PCU, Regional Environmental Inspectorates, Park Administrations staff on monitoring program. Implementation of the EMP was discussed and agreed with the Government during negotiations.

It was also agreed during negotiations, that if the halted construction of the nuclear power plant in the Belene island was to resume in the future or any other development was proposed in the Project area or surroundings, that such developments would be carried out in accordance with adequate planning, construction and environmental impact assessment and approval process and procedures, in accordance with Bulgarian legislation, and safety norms and regulations in force in Bulgaria.

### 5.3 For Category A and B projects, timeline and status of EA:

Date of receipt of final draft: 02/14/2002

An environmental Assessment (EA) has been carried out and mitigation measures have been proposed to address possible environmental impacts. The EA reveals that the Project will have positive effects on the environment. The draft EA report was submitted to the Bank in December 2001. It was reviewed and commented on by the ECA Safeguard Compliance Unit. The final EA report, which has taken into account all comments, was submitted to the Bank's Infoshop on February 14, 2002, and the Executive Summary was sent to the Board of Executive Directors on February 14, 2002.

### 5.4 How have stakeholders been consulted at the stage of (a) environmental screening and (b) draft EA report on the environmental impacts and proposed environment management plan? Describe mechanisms of consultation that were used and which groups were consulted?

As indicated above, local stakeholders were consulted during the EA preparation process. Consultations were carried with local government organizations, farmers, fishermen, local NGOs working in the project areas, and potentially affected nearby villages. The Draft EA report prepared in Bulgarian was made available through local municipalities prior to public hearings organized in Tutrakan and Belene on January 30-21, 2002.

### 5.5 What mechanisms have been established to monitor and evaluate the impact of the project on the environment? Do the indicators reflect the objectives and results of the EMP?

The monitoring of the EMP will be the responsibility of the Ministry of Environment and Water through the PCU. The Regional Environmental Inspectorates will be responsible for monitoring the impacts of the project. Environmental consultants will help to identify and quantify all environmental indicators early on during project implementation. The baseline information obtained during the preparation of the EA will be updated regularly by the PCU in order to assess that the project is fulfilling its requirements according to the EMP.

## 6. Social:

### 6.1 Summarize key social issues relevant to the project objectives, and specify the project's social development outcomes.

Annex 11 summarizes the results of the Social Assessment, including description of data and methods used, public attitude towards the project, socioeconomic conditions of the population in the area surrounding the project, expected project impacts, expected social impacts and mitigation measures, participation activities and stakeholder analysis.

The socioeconomic assessment was undertaken during project preparation in three stages between July and November 2001. The first stage consisted of primary and secondary data collection. Two focus group discussions with 10 participants each were undertaken at Kalimok/Brushlen. Thirty-five in-depth interviews were undertaken at both sites. This information was used to design a household survey instrument. Secondary data on the socioeconomic condition of the project area was collected from relevant government institutions. In the second stage household surveys were undertaken. In Kalimok/Brushlen Protected Sites (hereafter KBPS) a 1,282 household survey, representative of the population in the protected area, was completed. In Persina Nature Park (hereafter PNP), a 550 household survey, representative of the town of Belene, was completed. The third stage consisted of data analysis and consultations with stakeholders. In particular stakeholders were consulted on project alternatives and then the social assessment team worked with the Project Preparation Unit to include the results of these consultations in the project design. The social assessment has had a significant impact on project design.

The socioeconomic assessment reveals that there is an overwhelming expectation of positive impacts from the project, with more than half of the survey respondents indicating that it would be beneficial for their region. The benefits people feel will accrue to them include improvement in the water quality of the Danube, conservation and protection of natural resources, improvement in the natural fishery, and general economic revitalization from an increased flow of visitors. There will also be direct benefits from the creation of new jobs associated with the civil works activities, maintenance, guarding and monitoring of the wetlands and protected sites.

The project may result in some negative impacts on the population. In particular there may be limitations placed on resource extraction in the protected areas and there may be, at KBPS, indirect impacts on municipal/private land from wetland restoration although this is not expected. These impacts and how the project addresses them are discussed in detail in Annex 11. At both sites the population raised the issue that restoring wetlands will exacerbate mosquito population. While this is not expected to occur, the environmental management plan has taken this into account and explored options for mitigating this impact. (Increasing stagnant water surfaces could significantly increase mosquito breeding grounds and insect populations. Increasing fish, bird and populations of beneficial insects that feed on mosquito larvae and insects would offset this. Also, cycling water through the wetlands would help limit insect breeding). Approved mosquito control treatment is an eligible activity to be supported under the Contingency Relief Fund.

In terms of social development outcome, the project will support the engagement of local communities in sustainable management and use of natural resources and environmental protection, by promoting community involvement in the preparation of the protected areas management plans; providing access to financial resources and technical assistance for supporting environmentally friendly agricultural practices and piloting eco-business projects; providing small grants for promoting biodiversity conservation.

## 6.2 Participatory Approach: How are key stakeholders participating in the project?

The project has been developed in a participatory manner and these activities will serve as a template for implementation (see table below). Key stakeholders consulted during preparation include villagers and their representatives in local government, Government staff involved in implementing the project, and environmental Non-Government Organizations. Feedback from stakeholders during these participatory activities was incorporated into project design.

| Stakeholder  | Identification and Preparation | Implementation | Operation/Maintenance and Monitoring |
|--|--------------------------------|----------------|--------------------------------------|
| Beneficiaries, Communities Groups, and Associations. | IS/COM                         | IS/COM/COL     | IS/COM/COL                           |
| Central Government                                   | IS/COM                         | IS/COM/COL     | IS/COM/COL                           |
| Regional Government                                  | IS/COM                         | IS/COM/COL     | IS/COM/COL                           |
| Local Government                                     | IS/COM                         | IS/COM/COL     | IS/COM/COL                           |
| Academy of Sciences                                  | IS/COM                         | IS/COM/COL     | IS/COM/COL                           |
| NGOs   | IS/CON                         | IS/COL         | IS/COL                               |
| EC and other Donors                                  | IS/CON                         | IS/CON/COL     | IS/CON/COL                           |

**Legend:** IS=Information sharing; COM=Consultation; COL: Collaboration

Villagers will continue to participate in the project throughout implementation, contributing to the development of protected area management plans and identifying impact mitigation measures. Staff of the protected areas administrations will participate in implementation and will receive training on methods to

encourage and manage community involvement. Local and national NGOs will be involved in monitoring implementation.

### 6.3 How does the project involve consultations or collaboration with NGOs or other civil society organizations?

The Project has a strong history of active collaboration with NGOs, in particular WWF-DCPO and Green Balkans, a Bulgarian NGO. In 1997, Green Balkans in cooperation with WWF-DCPO initiated a concept for the restoration and sustainable use of wetlands in the region. Based on the concept, the Kalimok marshes were selected as a priority restoration and management site, and highlighted options for restoration. Later, this initial program was adopted into the Project, and expanded upon. Once full Project preparation began, the project scope expanded the original request which focussed on wetland restoration to include broader concepts of sustainable landscape management within the two protected areas. Civil society organizations and representatives of local communities (e.g. mayors) are currently actively engaged, and will continue to do so throughout project implementation. For example, the protected areas administrations will be overseen by an Advisory Committee (Consultative Council); the development of the management plans is a 2-3 year intensively consultative process.

### 6.4 What institutional arrangements have been provided to ensure the project achieves its social development outcomes?

The PCU will ensure full participation of local communities, and villagers in the implementation of the project. The project, through the Process Framework, which was discussed and agreed with the Government during negotiations, provides for extensive involvement of local communities in project implementation.

### 6.5 How will the project monitor performance in terms of social development outcomes?

The PCU with the support of consultants will annually carry out socio-economic surveys to monitor progress of the project and measure the impact of project activities against the initial socio-economic baseline survey carried out during the preparatory phase.

## 7. Safeguard Policies:

### 7.1 Do any of the following safeguard policies apply to the project?

| Policy   | Applicability   |
|--|---|
| Environmental Assessment (OP 4.01, BP 4.01, GP 4.01)         | <input checked="" type="radio"/> Yes <input type="radio"/> No |
| Natural Habitats (OP 4.04, BP 4.04, GP 4.04)                 | <input type="radio"/> Yes <input checked="" type="radio"/> No |
| Forestry (OP 4.36, GP 4.36)                                  | <input type="radio"/> Yes <input checked="" type="radio"/> No |
| Pest Management (OP 4.09)                                    | <input checked="" type="radio"/> Yes <input type="radio"/> No |
| Cultural Property (OPN 11.03)                                | <input type="radio"/> Yes <input checked="" type="radio"/> No |
| Indigenous Peoples (OD 4.20)                                 | <input type="radio"/> Yes <input checked="" type="radio"/> No |
| Involuntary Resettlement (OP/BP 4.12)                        | <input checked="" type="radio"/> Yes <input type="radio"/> No |
| Safety of Dams (OP 4.37, BP 4.37)                            | <input type="radio"/> Yes <input checked="" type="radio"/> No |
| Projects in International Waters (OP 7.50, BP 7.50, GP 7.50) | <input type="radio"/> Yes <input checked="" type="radio"/> No |
| Projects in Disputed Areas (OP 7.60, BP 7.60, GP 7.60)*      | <input type="radio"/> Yes <input checked="" type="radio"/> No |

### 7.2 Describe provisions made by the project to ensure compliance with applicable safeguard policies.

**Environmental Assessment:** The GEF Grant Agreement will include a covenant calling for the implementation of the EMP. The Bank will monitor the adherence to the EMP as part of its supervision activities.

**Pest Management:** The project will only provide financial support for approved mosquito control measures, as recommended in the Protected Areas Management Plans.

**Involuntary Resettlement:** The Project has been and will continue to be specifically designed so that no involuntary physical displacement or relocation of people will be necessary. Design parameters include flood elevations that do not encroach on private lands and minimize impacts to groundwater (levels and quality) and crops as well as road access. The management plans for the protected areas may identify the need for new zoning and increased enforcement of existing laws within the protected areas to ensure sustainability of natural resources. The Social Assessment confirms these findings. A Process Framework (Annex 12) identifies how the Project will ensure compliance with this safeguard policy. The Bank will also monitor the adherence to Process Framework as part of its supervision activities.

**Projects on International Waters:** As there will be no net extraction of waters from the Danube, and no negative impact on water quality (on the contrary, the project is designed to reduce the nutrient loads into the Black Sea by about 220-810 tons of nitrogen and 24-37 tons of phosphorus per year), OP 7.05 on Project on International Waters is not triggered. As a good member of the International Commission for the Protection of the Danube River (ICPDR), and since the Project is part of the Joint Action Program for the Danube River Basin (January 2001 - December 2005), the Government of Bulgaria has introduced the Project for discussion and approval by the ICPDR (February 2002). The proposed project together with other projects for wetlands restoration and floodplain restoration has been approved by the Heads of delegations. The Heads have also stated their no-objection to the Joint Action Program including the proposed projects.

## F. Sustainability and Risks

### 1. Sustainability:

The long-term sustainability of project benefits is linked to the adequate management and maintenance of the restored wetlands and associated protected areas, and adoption of economic activities compatible with nature conservation and sustainable use of natural resources. Management and maintenance will require sufficient institutional and financial resources. The project makes provisions for strengthening the capacity of local and regional implementing institutions as well as local administrations to ensure they acquire the needed managerial and technical skills and capabilities. A provision is also made to support incremental operation and maintenance costs of implementing agencies on a declining basis while developing financial mechanisms to finance protected areas basic maintenance costs. Project sustainability will be enhanced by actively involving local institutions in project implementation and by supporting the development and implementation of comprehensive management plans that link wetlands restoration and nature conservation objectives with sustainable socio-economic development and tangible benefits for the local people. The project will support for ongoing demonstration of the economic, environmental and social benefits from the project.

### 2. Critical Risks (reflecting the failure of critical assumptions found in the fourth column of Annex 1):

| Risk   | Risk Rating | Risk Mitigation Measure   |
|--|-------------|---|
| <p><b>From Outputs to Objective</b><br/>           Transboundary nutrient load does not decrease due to: (i) lack of serious effort from upstream riparian; and (ii) increases in agricultural activity in</p> | M           | Concerted action by all riparian countries, supported by Black Sea and Danube Commissions, GEF Regional projects, and other donors to decrease nutrient pollution. Strong |

|   |                            |  |
|---|----------------------------|--|
| <p>Bulgaria as economy improves.</p> <p>Nutrient stripping potential of wetlands not as great as originally expected.</p> <p>Lack of continuing commitment from the Government of Bulgaria to the project.</p>  | <p>S</p> <p>N</p>          | <p>public awareness campaign aimed at informing local farmers; incentives provided by Farmer Transition Support Fund; and donor-financed projects in eco-farming and nutrient friendly agriculture.</p> <p>Regardless of the nutrient reduction outcome, the project will improve natural habitats for important biodiversity and has important value as practical demonstration and experience gathering. The project includes a comprehensive nutrient trapping monitoring system as well as technical assistance to identify the role of wetlands restoration as a viable measure to contribute to the reduction of nutrients, and demonstrate what works and what does not. Intensive supervision from the Bank, especially during the first year of project implementation.</p> <p>Regarded as low because the Government has undertaken significant international commitments and EU accession requirements. Continuing dialogue at the regional level on the benefits of nutrient reduction in the Danube/Black Sea basins.</p> |
| <p><b>From Components to Outputs</b></p> <p>Inadequate resources for management and maintenance of restored wetlands and associated protected areas.</p> <p>Inadequate donor co-financing of project activities.</p> <p>Lack of commitment of local communities to protected areas regimes.</p> | <p>M</p> <p>M</p> <p>M</p> | <p>Government and local administrations have committed to fund incremental costs on an increasing basis, while the project finances incremental costs on a declining basis. Administrations will receive support to develop fund-raising plans for long-term financial sustainability.</p> <p>Firmed unofficial commitment from EU Phare and the Austria Government to support project activities has already been obtained. Government commitment to finance the monitoring program under the EU Phare project has been confirmed. The project activities to be supported by project's cofinanciers will not have a bearing on the activities supported by the GEF grant, but they are an integral part of the project.</p> <p>Comprehensive protected areas management plans will be prepared following a participatory planning approach and mechanisms will be</p>   |

|   |   |  |
|---|---|--|
| Limited participation and adoption of nutrient friendly agriculture practice by farmers | M | established for stakeholder's consultation. Strategies will be developed to prepare/train local population for new job opportunities arising throughout the project area.<br><br>Financial resources will be made available for training of farmers and extension officers on best agriculture practices and for sharing experiences with neighboring Romania. |
| <b>Overall Risk Rating</b>  | M |  |

Risk Rating - H (High Risk), S (Substantial Risk), M (Modest Risk), N (Negligible or Low Risk)

### 3. Possible Controversial Aspects:

The project is not considered controversial, since the proposed project interventions build on international and regional experience on wetlands restoration and protected areas management, and have the support from local communities and authorities. One possible controversial aspect, which has been addressed in project design, is the potential indirect impacts caused by the new flooding regimes in the restored wetlands and the community perception of restricted access to resources in the protected areas. Both the detailed design of the restoration work and the development of protected areas management regime will be done in close consultation with local stakeholders. The participatory planning approach that started during the preparatory phase will continue during project implementation. Another potential area of controversy is the proximity of the Belene Nuclear Power plant, whose construction started in the 1980s, to the proposed wetlands restoration site located in the Belene Island, and the inclusion in the project of some activities to promote protected areas management in the Persina Nature Park. Commitment from the Government has been obtained at the time of negotiations that if construction of the Plant is resumed (which is unlikely), the impacts of the Belene Nuclear Power Plant on the project will be assessed in order to ensure that it will not adversely affect the benefits expected to be realized by the project. The potential negative impact caused by the high temperature of the plant wastewater discharge has already been addressed by locating the water inlets in the northern part of the island.

## G. Main Grant Conditions

### 1. Effectiveness Condition

#### *Conditions for Board Presentation*

Provision of evidence satisfactory to the Bank that the current Project Steering Committee (established for the preparation phase of the project) has adopted the Project implementation arrangements as described in the Project Implementation Plan.

Agreement has been reached on the general functions, recommended representation and chairmanship of the Consultative Councils that will be established to assist the Persina Nature Park Directorate and the Kalimok/Brushlen Protected Site Administration, which will become an integral part of the Project Implementation Plan.

Written agreement between the Ministry of Environment and Water and the Ministry of Justice for the restoration work to be carried out in the Belene Island, including the rights of access for project personnel and contractors, acceptable to the Bank.

Re-appointment of the Project Steering Committee for the implementation phase by an Order of the Ministry of Environment and Water.

### ***Conditions of Effectiveness***

Selection of a project auditor acceptable to the Bank; and

Provision of Legal Opinion from the Ministry of Justice, which will be acceptable to the Bank.

## **2. Other [classify according to covenant types used in the Legal Agreements.]**

### ***Management and Implementation***

The Recipient will maintain a Project Coordination Unit (with an office in Sofia, local staff and considerable physical presence in the project area) under terms of reference and qualifications satisfactory to the Bank.

The Recipient will maintain a Project Steering Committee with terms of reference satisfactory to the Bank.

The Recipient will maintain a financial management system acceptable to the Bank and have the financial records, accounts and financial statements for each fiscal year audited and submit a certified audit report to the Bank commencing with the accounts for the period ending December 31, 2002 within six months after the end of each calendar year and also at the closing of the project.

Not later than November 30 of each year, the Government will furnish the Bank the annual project implementation work programs for the project for the next year, including procurement and financing plans, and will review these plans with the Bank before implementing them.

The Recipient will submit to the Bank, commencing upon Grant effectiveness, quarterly Project Management Reports, not later than 45 days after the end of each quarter outlining progress made in the implementation of each project component, as well as the problems encountered and how they are being addressed.

The Recipient will furnish to the Bank, on or about December 31, 2004, a report on the progress of the project (incorporating the results of monitoring and evaluation activities) and sets out measures for achievement of project objectives for rest of Project.

The Recipient will provide the funds, facilities, services, and other resources needed for the Project.

The Recipient will submit to the Bank detailed a operational manual for the administration and implementation of the small competitive grants program for biodiversity conservation, the farmer transition support program, and the grants under the contingency relief fund no later than one year after effectiveness.

The Recipient will implement the Environmental Management Plan as well as the Process Framework.

The Recipient will maintain policies and procedures adequate to monitor and evaluate on an ongoing basis, in accordance with indicators satisfactory to the Bank, the carrying out of the project and the achievement of the project's objectives.

The Recipient will prepare, on the basis of guidelines acceptable to the Bank, and furnish to the Bank not later than six (6) months after the Closing Date or such later date as may be agreed for this purpose between the Recipient and the Bank, a plan for the future operation of the Project.

#### **H. Readiness for Implementation**

- 1. a) The engineering design documents for the first year's activities are complete and ready for the start of project implementation.
- 1. b) Not applicable.
- 2. The procurement documents for the first year's activities are complete and ready for the start of project implementation.
- 3. The Project Implementation Plan has been appraised and found to be realistic and of satisfactory quality.
- 4. The following items are lacking and are discussed under loan conditions (Section G):

The following actions also confirm the readiness for implementation of the proposed Project: (i) agreement has been reached on the draft terms of reference for the detailed engineering design of the restoration work in Belene Island and Kalimok/Brushlen marshes, and for the protected areas management plans in Persina Nature Park and Kalimok/Brushlen Protected Site; (ii) detailed cost estimates for all components have been agreed; (iii) scope of the monitoring program has been agreed; (iv) a draft protocol between the Ministry of Environment and Water and the Ministry of Justice has been submitted to the Bank for review; (v) a draft legal agreement for the establishment of the Kalimok/Brushlen Protected Site Non-Profit Association has been submitted to the Bank for review; (vi) a written agreement between the Belene municipality on the allocation of land for the Persina Nature Park Directorate and visitor center has already been issued; (vii) the PCU is already in place and functioning successfully.

#### **I. Compliance with Bank Policies**

- 1. This project complies with all applicable Bank policies.
- 2. The following exceptions to Bank policies are recommended for approval. The project complies with all other applicable Bank policies.

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Rita E. Cestti  
**Team Leader**

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Laura Tuck  
**Sector Manager/Director**

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Andrew N. Vorkink  
**Country Manager/Director**

## Annex 1: Project Design Summary

### BULGARIA: Wetlands Restoration and Pollution Reduction Project

| Hierarchy of Objectives  | Key Performance Indicators  | Data Collection Strategy   | Critical Assumptions   |
|--|---|--|--|
| <p><b>Sector-related CAS Goal:</b><br/>Protecting and enhancing the environment.</p>   | <p><b>Sector Indicators:</b><br/>Acknowledgement that there is gradual improvement of the Danube water quality and that biodiversity conservation objectives are integrated into regional development plans.</p> <p>Acknowledgement that essential functions of damaged wetland and protected areas in the floodplain of the Danube have been restored.</p> <p>Acknowledgment that Government personnel responsible for natural resources management and environmental protection are capable to implement the Protected Area Management Law and the Water Law.</p> | <p><b>Sector/ country reports:</b><br/>Danube and Black Sea Monitoring reports.</p> <p>Annual Report on the Status of the Environment in the Republic of Bulgaria (MoEW).</p> <p>Formal and informal assessment from the donor community and NGOs.</p> | <p><b>(from Goal to Bank Mission)</b><br/>Improved natural resources management and use contributes to sustainable development and reduction of poverty.</p> |
| <p><b>GEF Operational Program:</b><br/>International Waters Operational Program No. 8, Water-body based Operational Program: improve water quality of the Danube and Black Sea Basin.</p> <p>Operational Program No. 2, Biodiversity Conservation: Improve conservation of globally significant biodiversity in selected wetland sites through sustainable management and use.</p> | <p>Increased awareness about threats to nutrient pollution of transboundary water bodies.</p> <p>Increased dialogue and support for nutrient reduction programs.</p> <p>Globally important biodiversity conserved and/or sustainably used.</p>  | <p>Danube and Black Sea water quality monitoring reports.</p> <p>Periodic biodiversity monitoring reports.</p>   |  |

| Hierarchy of Objectives  | Key Performance Indicators  | Data Collection Strategy  | Critical Assumptions   |
|--|---|---|--|
| <p><b>Global Objective:</b></p> <p>Demonstrate and provide for replication of reduction of transboundary nutrient loads and other agricultural pollution flowing into the Danube River and the Black Sea Basins while at the same time conserving key target threatened species in the project areas through wetlands restoration and protected areas management programs, and support for stakeholders to adopt environmentally-friendly economic activities in the two project areas.</p> <p><b>Project Development Objective:</b></p> <p>Local communities and local authorities in the Persina Nature Park and Kalimok/Brushlen Protected Site areas adopt sustainable natural resources management practices.</p> | <p><b>Outcome / Impact Indicators:</b></p> <p>Gradual improvement in ecosystem health of restored wetlands, as measured through essential ecological indicators, i.e., nutrient removal (measured through the percentage reduction in nutrient loads in water in-flow and out-flows); critical biodiversity habitat (evidenced by increased species diversity and population numbers of key indicator species); critical fish reproduction habitat (measured through the increased fish diversity and population numbers, especially those of high economic value).</p> <p>Establishment of effective control structures and monitoring systems; staff knowledgeable in their operations and maintenance.</p> <p>Adoption of Protected Areas Management Plans for Persina Nature Park (21,000 ha) and Kalimok/Brushlen Protected Site (6,000 ha), based on broad stakeholder consensus and support and combining socio-economic development and conservation objectives.</p> <p>Establishment of effective protected area administrations, capable of implementing the Protected Areas Management Plans in close collaboration with other local institutions and communities.</p> <p>Establishment of effective, replicable models of</p> | <p><b>Project reports:</b></p> <p>Environment and agriculture statistics.</p> <p>Water quality reports.</p> <p>Monitoring activities of the PCU.</p> <p>Project supervision reports.</p> <p>Mid-term review report.</p> | <p><b>(from Objective to Goal)</b></p> <p>Continued commitment from upstream riparian countries to water quality improvements in the Danube and Black Sea Basins.</p> <p>Continued commitment from the Government of Bulgaria to natural resources management and environment policies and programs, including protected areas management and wetlands conservation.</p> <p>Nutrient-stripping potential of wetlands as good or better than similar wetlands in other parts of the world.</p> <p>Improved capacity to deal with natural resources management and protected area management will reduce the threat to globally significant biodiversity.</p> <p>Continued land used based on protected areas management plans developed.</p> <p>Improved income of local population will increase support for protected areas and wetlands restoration.</p> |

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|  | <p>participatory and integrated management of wetlands in areas with mixed land use and ownership patterns.</p> <p>Improved agricultural practices in Persina Nature Park and Kalimok/Brushlen Protected Site, resulting in measurable nutrient reduction.</p> <p>Increased local awareness and support for biodiversity conservation, marked by the increased participation of local communities in protected areas management and conservation activities and increased public knowledge of the importance of the restored wetlands and protected areas ecosystems.</p> <p>Increased dialogue on transboundary water quality and regional natural resources management issues through partnerships with Bulgarian and regional scientific communities.</p> |  |  |
|--|--|--|--|

| Hierarchy of Objectives  | Key Performance Indicators   | Data Collection Strategy   | Critical Assumptions  |
|--|--|--|---|
| <p><b>Output from each Component:</b></p> <p>1.1 Wetland restoration investments made in Belene Island, Kalimok/Brushlen Marshes and other priority sites restored to promote nutrient trapping.</p> <p>2.1 Planning capacity for protected areas management strengthened.</p> <p>2.2 Key priority protected areas management activities implemented and natural habitats improved and sustainably used by local communities.</p> <p>2.3 Comprehensive and effective monitoring system compatible with other systems in region established.</p> <p>2.4 Awareness and appreciation by local communities of wetland and protected area functions and their economic value enhanced and efficient implementation of small grant program.</p> <p>2.5 Capacity of institutions involved in natural resource management within the two protected areas strengthened.</p> <p>2.6 Guidelines for nutrient reduction on the basis of well-documented case studies</p> | <p><b>Output Indicators:</b></p> <p>1.1.1 Detailed design of restoration works completed by end of 1st year.</p> <p>1.1.2 Number of ha of restored wetlands by end of 3rd year and 5th year.</p> <p>1.1.3 Cost-effectiveness of nutrient reduction of wetlands restoration relative to other measures.</p> <p>2.1.1 Protected areas management plans for two protected areas (Kalimok / Brushlen Protected Site and Persina Nature Park) developed in a participatory manner and adopted by government and local communities and authorities.</p> <p>2.1.2 Development of protected areas administration operational rules and procedures, improved structures and fund-raising plans.</p> <p>2.2.1 Critical protected areas management activities operational within protected areas.</p> <p>2.2.2 Percentage of farmers that have adopted nutrient friendly agriculture practices.</p> <p>2.2.3 Percentage of farmers that have secure access to Farm Transition Fund.</p> <p>2.3.1 Monitoring system designed in accordance with agreed protected areas</p> | <p><b>Project reports:</b></p> <p>Project progress reports by PCU.</p> <p>Project mid-term review and final evaluation.</p> <p>Project impact studies.</p> <p>Geographic information and remote sensing systems.</p> <p>Management plans available as a public document from MoEW.</p> <p>Minutes of workshops or Memorandums of Understanding between Bulgarian and Romanian counterparts for actions to be undertaken jointly or in parallel.</p> <p>Monitoring and evaluation reports.</p> <p>World Bank and co-financiers supervision reports.</p> <p>World Bank Mid-term review and final evaluation.</p> | <p><b>(from Outputs to Objective)</b></p> <p>Wetlands potential as nutrient strippers consistent with estimates.</p> <p>Future investments in irrigation and drainage do not disrupt restored wetlands; and future investments in agriculture are in compliance with EU regulations.</p> <p>New flooding regimes caused limited or nil collateral damage to surrounding agricultural land and private property.</p> <p>Government and local authorities remain committed to provide effective operation and maintenance of monitoring systems, assign and maintain protected area staff, and provide adequate financial support.</p> <p>Economic activities supported under the Farm Transition Fund program contribute to long-term sustainability.</p> <p>Wetlands begin to recover and undertake ecological functions quickly so that local communities can quickly see benefits.</p> <p>Local communities and authorities remain committed to implement protected areas management plans.</p> <p>Adequate monitoring and evaluation capacity.</p> |

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| <p>completed and evaluated for adoption.</p>   | <p>management plan.</p> <p>2.3.2 Park administrations, local and regional authorities trained in operation of monitoring program.</p> <p>2.4.1 Completion of biodiversity conservation activities supported under the small grant program</p> <p>2.4.2 Educational materials developed and in use in local schools.</p> <p>2.4.3 Percentage of communities reached by educational program.</p> <p>2.4.4 Percentage of communities understand importance of biodiversity conservation and wetlands restoration.</p> <p>2.5.1 Implementation of institutional strengthening activities at least 60% by the 3rd year and 90% by the end of the 5th year.</p> <p>2.5.2 Performance standards for institutions met.</p> <p>2.6.1 Implemented nutrient reduction activities properly evaluated and documented.</p> |  |   |
| <p>3.1 Project management capacity within the park administrations and the Ministry of Environment and Water improved.</p> | <p>3.1.1 Staff trained in project management, financial management and procurement.</p> <p>3.1.2 Monitoring and evaluation system established and functioning.</p> <p>3.1.3 Inter-ministerial committee and local advisory boards established and functioning.</p>   | <p>Project Implementation Plan.</p> <p>Annual work plans and quarterly progress and disbursement reports.</p> <p>Supervision by World Bank and co-financiers.</p> <p>Project Mid-term review and final evaluation.</p> | <p>Project Coordinating Unit receives counterpart funding on time.</p> <p>Smooth coordination between implementing agencies.</p> <p>Smooth coordination between line departments.</p> |

| Hierarchy of Objectives   | Key Performance Indicators  | Data Collection Strategy   | Critical Assumptions   |
|---|---|--|--|
| <p><b>Project Components / Sub-components:</b><br/>Wetlands Restoration.</p> <p>Protected Areas Management.</p> <p>Project Coordination and Management.</p> | <p><b>Inputs: (budget for each component)</b><br/>US\$5.02 million<br/>(US\$3.43 million GEF)</p> <p>US\$7.37 million<br/>(US\$3.38 million GEF)</p> <p>US\$0.89 million<br/>(US\$0.69 million GEF)</p> | <p><b>Project reports:</b><br/>Inputs will be monitored and evaluated through regular monitoring, evaluation, audit, procurement and disbursement reports.</p> | <p><b>(from Components to Outputs)</b><br/>Central, regional and local authorities continue commitment to restore wetlands and protect and manage designated protected areas.</p> <p>Local communities participate in preparation of protected areas management plans.</p> <p>Counterpart funding is sufficient and timely.</p> <p>Institutional strengthening activities can be carried out within the project timeframe. Protected areas administrations are well staffed.</p> |

## **Annex 2: Detailed Project Description**

### **BULGARIA: Wetlands Restoration and Pollution Reduction Project**

#### **Objective**

1. The project development objective is that local communities and local authorities in the Persina Nature Park and Kalimok/Brushlen Protected Site areas adopt sustainable natural resources management practices. The project will help demonstrate how environmentally-friendly rural development activities can improve livelihoods. The global environmental objective is to demonstrate and provide for replication of reduction of transboundary nutrient loads and other agricultural pollution flowing into the Danube River and the Black Sea Basins while at the same time conserving key target threatened species in the project areas through: (i) wetlands restoration and protected areas management programs; and (ii) support for stakeholders to adopt environmentally-friendly economic activities in the two project areas.

2. The project will assist the Government of Bulgaria in: (i) the restoration of critical priority wetlands in the Danube River basin and piloting the use of riparian wetlands as nutrient traps; (ii) the establishment of comprehensive monitoring systems for water quality and ecosystem health; (iii) support for protected areas planning in Persina Nature Park and Kalimok/Brushlen Protected Site; (iv) strengthening capacity to protect and manage biodiversity and natural resources; (v) building public awareness of sustainable natural resources management and biodiversity conservation; and (vi) promoting and supporting entrepreneurial and agricultural activities within the project region which ensure the sustainability of natural resources and are compatible biodiversity conservation objectives. Although the project only directly addresses the restoration of selected priority wetlands in Bulgaria, these activities will play a critical demonstration role within the region, promoting nutrient reduction investments in other parts of Bulgaria and neighboring countries.

#### **By Component:**

##### **Project Component 1 - US\$5.02 million Wetlands Restoration**

#### ***Background***

3. A major report “Evaluation of Wetlands and Floodplain Areas in the Danube River Basin” was commissioned by the United Nations Development Program (UNDP) and GEF as a part of the Danube Pollution Reduction Program. This report, published in May 1999, provided the first comprehensive and systematic evaluation of the existing extent of natural floodplains in this international river basin. The study found that out of a total historical floodplain area of 41,605 km<sup>2</sup> only 7,845 km<sup>2</sup> remained – a remarkable loss of over 80%. Based on this evaluation, the report recommended 17 wetland/floodplain sites for rehabilitation taking into account their ecological importance, their nutrient removal capacity and their role in flood protection. Only two of the sites fall within the Bulgarian sector, the Belene Island within the Persina Nature Park and the Kalimok/Brushlen Marshes within the Kalimok/Brushlen Protected Site, and both have been selected for restoration during the first phase of project implementation. These two sites border larger potential restoration areas in neighboring Romania. Moreover, the two sites are part of the “Lower Danube Green Corridor” Initiative launched in June 2000, which aims to establish a network of fully functioning wetland areas along the Danube in Romania, Bulgaria, Moldova and Ukraine.

4. While this wetlands restoration component is considered a pilot with important replication value for other priority areas in the Danube/Black Sea Region, it builds on the ICPDR's *Strategic Action Plan Implementation Program (Danube SIP)* for wetland restoration, and the lessons learned from even earlier

restoration programs such as the EU-Phare Multi-Country Program's 1997-1999 support two wetland restoration projects in the Lower Morava-Dyje river system (Czech Republic, Austria and Slovakia), which had the objective to reduce environmental pollution and riverine degradation. Recognizing the importance of these first demonstration projects to other areas of the Danube, documents such as the *Dissemination of Experiences and Results from the PHARE Morava and Dyje Wetlands Rehabilitation Projects* and *Key Elements of Successful Wetland Rehabilitation Projects* provide important lessons learned, which this Project has built upon. The WWF-Danube-Carpathian Freshwater Program, which has been active in these earlier programs, played a critical role in initiating support and technical studies for restoration activities now supported under the Project.

5. **Belene Island.** One of the already identified sites sits within the Persina Nature Park covering about 22,000 hectares (ha), located along the Svishtov – Belene lowlands, comprises five areas: the Belene Island, other islands and floodplains, the eastern part of the former floodplain mainly under state and municipal ownership, the western part for the former floodplain mainly under private ownership, and the hilly landscape of Nikopol. The total population connected to the Persina Nature Park is about 49,970 inhabitants, including the municipalities of Nikopol (Nikopol town with 5,100 inhabitants and Dragash Voyvoda village with 930 inhabitants), Belene (Belene town with 9,830 inhabitants) and Svishtov (Svishtov town with 31,800 inhabitants and Oresh village with 2,310 inhabitants). A recent survey in the region has revealed that approximately 22% of the population is over 60 years old, and 59% of the population is between the ages of 18 and 60 years. Unemployment reaches approximately 22%. Most of the land in the area, regardless of ownership, is used for agriculture purposes. Other land uses are forestry and fishery. Within Persina Nature Park, the project will support the wetland restoration on eastern Belene Island, a 15 km long island, the western portion of which is currently under the jurisdiction of the Ministry of Justice which operates a prison on this side, while the eastern portion is a managed Nature Reserve under the jurisdiction of the Ministry of Environment and Water.

6. **Kalimok/Brushlen Marshes.** The other identified site, within the Kalimok/Brushlen Protected Site covering about 6,000 ha, is located 60 kilometers east of Ruse. The total population connected to the Kalimok/Brushlen Marshes Protected Site is about 23,140, including the municipalities of Slivo Pole (Ryahovo village with 2,250 inhabitants, Golyamo Vranovo village with 2,190 inhabitants, Bobovo village with 710 inhabitants and Brushlen village with 560 inhabitants) and Tutrakan (Tzar Samuil village with 1,900 inhabitants, Novo Cherna village with 2,250 inhabitants, Staro Selo village with 1,480 inhabitants, and Tutrakan town with 11,800 inhabitants). About 50% of the population is between the age of 18 and 60 years. Unemployment is high – about 17-32%. As in the case of Persina Nature Park, most of the land is used for agriculture purposes, and the population is mainly employed in the agriculture sector. Up until the 1950's, the marsh complex was a key part of the region's valuable fish resources. In the 1950's, a dyke was constructed between Ruse and Tutrakan for agricultural purposes, which cut off fish from their historical spawning grounds. Fish ponds (encircling 560 ha of state-owned land) were constructed, but they were declared bankrupt and abandoned after the collapse of the state farming system. Most of the original marshlands proposed for restoration are state-owned, and have reverted to reed beds. Adjacent areas are privately and municipality-owned and used for agriculture of varying productivity levels -- while the western part of the area is mainly in private or local government ownership, the eastern area is mainly in state ownership.

### ***Description***

7. This is the most innovative component to be included under the project, and if successful, will have high a replication value throughout Bulgaria and the region. This component expects to restore 2,340 ha of former marshes in the two already identified sites. Additional sites are expected to be identified and

restored during project implementation. Selection criteria for site selection will include: ecological potential, floodplain type and with current land use, and nutrient reduction potential.

### ***Proposed Sub-components***

*Restoration of Belene Island and Kalimok/Brushlen Wetlands (Total: US\$5.02 million, GEF: US\$3.43 million, Other Donors (TBI): US\$0.76 million, GoB: US\$0.83 million).*

8. This sub-component expects to restore about 1,290 ha in Belene Island and about 1,050 ha in Kalimok/Brushlen Marshes. Restored wetlands will only involve state or municipal land. No private land is expected to be flooded. Existing dykes will be raised or new dykes will be built to protect private property. This sub-component will support the elaboration of a detailed engineering design and supervision of civil works. It will also support the construction and rehabilitation of small infrastructure needed for the restoration of wetlands in Belene Island and Kalimok/Brushlen, including sluices, canals, protective dykes, access roads, improvement on irrigation/drainage conditions to make equivalent amounts of state land adjacent to the restoration area available for lease. The terms of reference of the detailed engineering design include specific language to minimize the impact of restoration on local incomes, and undertake regular consultation with local stakeholders.

*Restoration of Additional Sites (Total: US\$0.91 million, Bilateral Donor: US\$0.76 million, GoB: 0.15 million)*

9. This sub-component, which focuses specifically on the replication of wetlands restoration activities in other areas of Bulgaria, is expected to be financed by the donors with interest on environment/water resource issues. The Government of Bulgaria through the Ministry of Environment and Water is seeking funding sources. Other than the two sites already selected for restoration under the Project, the Bulgarian "National Action Plan for the Conservation of the Most Important Wetlands in Bulgaria" (1995) as well as the UNDP/GEF/WWF "Evaluation of Wetlands and Floodplain Areas in the Danube River Basin" (1999) have identified other critical wetlands sites in need of restoration and protection based on predominately their biodiversity value. The Project will assist the GoB to undertake a re-assessment of identified priority wetlands, using a broader range of criteria developed as "lessons learned" from the preparation phase of the original two restoration sites, such as nutrient-uptake potential and marginal cost (linking to the Nutrient Reduction Strategy Guidelines Component) as well as social indicators (current land-use and ownership patterns). This subcomponent will finance consultant services for additional site identification, pre-feasibility and feasibility studies, design of restoration activities, and the necessary civil works (and supervision of their construction).

## **Project Component 2 - US\$7.37 million**

### **Protected Areas Management**

#### ***Background***

10. **Persina Nature Park.** The regime of use and management of Persina Nature Park is defined by the Protected Areas Law, the Ordinance of the Minister of Environment and Water for the designation of the Nature Park (No. RD – 648, dated December 4, 2000), and the Management Plan for the Nature Park. Many bird species, some of which are threatened on an European, as well as global scale, find nesting, wintering or migrating habitats in Persina Nature Park. The area boasts of a rich diversity of mammal, amphibian and especially fish species. There are 21 species of the Red Data Book found in the Belene Island complex. The site is an important habitat for the White-tailed Eagle and the Lesser Gray Shrike.

The Ferruginous Duck and the Corncrake, two globally threatened species, also breed on the site. Rare plant species of the Red Data Book, like Water Lily, are present in the site. The Persina Nature Park with an area of about 22,000 ha includes lands from the areas of Nikopol, Dragash Voyvoda, Belene, Svishtov and Oresh. Lands administratively belonging to these settlements and within the boundaries of the Nature Park are not part of it. The designation of the Nature Park does not alter the ownership of forests, lands and water areas on its territory, but the owners and users are obliged to observe the regime of protection. The division of responsibilities for the management, security, conservation and restoration of the nature parks is defined mainly by the Protected Areas Law, the Forests Law and the regulations of the National Forestry Board for the functioning of the Park Directorates. The Persina Nature Park Directorate was created on April 1, 2001, by Ordinance No. 258, dated May 10, 2001. It is subordinated directly to the National Forestry Board under the Ministry of Agriculture and Forestry. At present, the Directorate includes five staff: a Park Director, a Biodiversity Conservation Expert, a Public Relations and Tourism Development Expert, a Chief Specialist on Ecological Agriculture, and an Accountant.

11. **Kalimok/Brushlen Protected Site.** The regime of use and management of the Kalimok/Brushlen Protected Site is regulated by the following documents: the Protected Areas Law, the Order of the Minister of Environment and Water for the designation of the Protected Site (No. RD-451, dated July 4, 2001), and the Management Plan for the Protected Site. The Kalimok/Brushlen Protected Site with an area of about 6,000 ha, includes lands from the area of the villages of Ryahovo, Golyamo Vranovo, Babovo and Brushlen in the Municipality of Slivo Pole, as well as Zar Samuil, Nova Cherna, Staro Selo and Tutrakan in the Municipality of Tutrakan. Lands administratively belonging to these settlements and within the boundaries of the Protected Site are not part of it. The Kalimok marshes near the town of Tutrakan feature a rich biological diversity and are declared an Internationally Important Bird Area by Bird Life International. The site is also an internationally important site for waterfowl of which 30 species are listed in the Red Data Book. The marshes serve as breeding sites for the Ferruginous Duck and as a resting site for the Dalmatian Pelican and during the winter for the Pygmy Cormorant and Red Breasted Goose. Breeding species in this site include Little Bittern, Nigh Heron, Spoonbill and White-tailed Eagle. The Protected Area covers various landscapes including agricultural lands and allows for a wide range of uses of these lands. The designation of the protected area does not alter the ownership of lands, forests and water areas in it, but their owners and users are obliged to observe the adopted regime in order to protect the habitats of endangered, rare and vulnerable species and communities. The Protected Areas Law establishes that the owners of land, forest and water areas in the protected areas must realize the management of the protected areas regime. After consultations among owners of land, forest, and water areas, local municipalities, and representative of the Ministry of Environment and Water and the Ministry of Agriculture and Forestry, a decision has been made to establish a Non-Profit Association, "Kalimok/Brushlen Protected Site Non-Profit Association," to manage the protected site.

12. **Main agriculture Practices.** The table below presents the main features of the farming practices in the project area, including average size of plots:

| Item   | Government Institutions                            | Agricultural Cooperatives                     | Private Farmers                                |
|--|--|---|--|
| Size of plots  | 4.5 - 59.0 ha                                      | 200 - 530 ha                                  | 0.8 - 4.0 ha<br>(3.0 ha average)               |
| Distribution of arable land<br>- Persina Nature Park<br>- Kalimok/Brushlen |  |   |  |
| Cultivates crops   | Winter wheat, barley,<br>maize, sunflower, millet, | Winter wheat, barley,<br>maize, sunflower and | Winter wheat, barley,<br>maize, sunflower, and |

|               |                                |  |                  |
|---------------|--------------------------------|--|------------------|
|               | sorghum and other fodder crops | alfalfa. Crop rotation is practiced, and rapeseed, beans or coriander are introduced in the rotation. Secondary crops include vegetables, orchards, vineyards and tobacco. | alfalfa.         |
| Ownership     | Public property of the state   | State land property given on lease   | Private property |
| Period of use | 12 - 40 years                  | 6 - 9 years  | 1 - 4 years      |

### ***Description***

13. This component will support the next step towards sustainable restoration and protection of the two protected sites. This component will support preparation of protected areas management plans as well as implementation of priority actions within the framework of protected areas management regimes. The wetlands restoration and management regime of both sites will incorporate the objectives of the local communities as well as the biodiversity objectives of the nature park and protected site, respectively. This component will include the following activities: (i) development of protected areas management plans in each protected area; (ii) implementation of priority protected areas management actions, including management, operation and maintenance of restored wetlands and associated protected areas, establishment of a contingency relief fund, establishment of a farmer transition support program, provision of technical support for development of “green” business; (iii) strengthening monitoring programs within the restored wetlands systems; (iv) public awareness and education program, which includes a small grant scheme for activities that promote biodiversity conservation and environmental education program; (v) institutional strengthening program for entities responsible for land/water management to ensure sustainable management and use of the restored sites; and (vii) developing strategic guidelines to support preparation of a nutrient reduction strategic guidelines.

### ***Proposed Sub-components***

*Protected Areas Management Planning (Total:US\$0.72 million, EU PHARE: US\$0.65 million, GoB:US\$0.07 million )*

14. The Bulgarian Protected Areas Law stipulates the legal procedures to introduce the Management Plan for both Persina Nature Park and Kalimok/Brushlen Protected Site. The management plan will regulate all activities within the designated areas – including the demarcation of management zones for multiple resources use and economic development. The management planning process is expected to cover a period of two years, with the first year dedicated to fact-finding and establishment of consensus-building process which will help guide the identification of zones and management protocols. Through a well-designed participatory process, the management plans aim to gain public acceptance for not only the natural resource management prescriptions identified in the management plan, but also possible restrictions to resource use which may be necessary to ensure the long-term sustainability of these resources. The protected areas management plan will identify not only the appropriate management prescriptions of the protected areas’ biological resources, but also processes by which the park administrations can pro-actively foster local sustainable socio-economic activities. As part of the management plans, the project will develop sustainable resources use programs for the pilot protected areas.

### *Supporting Protected Areas Management Activities*

15. The sub-component will finance implementation of key activities under the framework of protected areas management:

- (a) Management and Maintenance of Restored Wetlands and Associated Protected Areas (Total: US\$0.57, GEF: US\$0.47 million, GoB: US\$0.09 million). After the initial construction, the project will support management and maintenance of the wetlands in order to optimize nutrient trapping and biodiversity habitat. For the latter, it is expected that the first years, the restored wetlands will require more intensive management until a dynamic ecological equilibrium is reached. Intensive management will include: residual “clean-up” from the initial flood and extensive cutting of the reeds which have accumulated in the fishponds, controlling natural succession of reeds, avoiding decomposition of vegetation, ensuring free access of fish to the wetlands, controlling illegal fishing practices. In subsequent years, management needs will be reduced to cutting off annual growths, and managing of sluices. The project will also support restoration of critical associated habitats within protected areas. While the management plan will detail management regimes to be undertaken by the protected areas administrations, Regional and State Forestry Boards and Regional Agriculture Offices, and a few activities – in particular for the restoration of critical habitats and natural resources – can already be identified. For example, the Action Plan for the restoration of Danubian island floodplain forests of Kalimok/Brushlen (managed by the State Forestry Board) will be complete by Winter 2002. Technical assessments of restoration sites and restoration prescriptions are ready. The project will also support border demarcation as well as the development of tourism trails and interpretation points.
- (b) Establishing a Contingency Relief Fund (Total: US\$0.54 million, GEF: US\$0.41 million, GoB: US\$0.13 million). Wetlands restoration activities may have an indirect effect on private lands. For example ground water levels may increase on private land adjacent to the restored area. Wetland restoration may indirectly result in a change in cropping patterns. Other potential indirect effects include changes in well water quality and road access to privately held lands. The technical study will identify options that mitigate such impacts, however, it is recognized there may be unintended indirect effects. Therefore the project will support the establishment of a Contingency Relief Fund that can be used, if necessary, to provide relief to households that experience a temporary decrease in income or quality of life as a result of restoration activities. Permanent relief is provided through the Farmer Transition Support Fund, which gives priority support to long term solutions that mitigate the negative indirect impacts of the flooding. The Farmer Transition Support Fund also provides long term support to ecologically sustainable agricultural activities which are not only in compliance with incoming environmental regulations for the region, but also better adapted to wetter soil conditions.

The Contingency Relief Fund is capitalized at a level equal to an estimate of the maximum potential marginal losses resulting from the restoration activities. On the basis of available information, potential indirect losses have been estimated at about US\$533,500. Expected value of various types of land and potentially damaged productive resources will be carefully evaluated once the additional modeling work and field surveys are completed.

Users or private owners of adjacent lands that may be indirectly and/or unplanned impacted during the restoration of the wetlands in Kalimok/Brushlen Protected Site as well as private farmers and agriculture cooperatives in the area will be eligible to apply for small grants from the fund. The Contingency Relief Fund will recognize the applicant as eligible if it meets certain criteria. Some activities supported by these grants include agriculture production (e.g., inputs, planting materials, fertilizers, mobile pumps), training, development of new groundwater wells, mosquito treatment, emergency civil works interventions, rehabilitation costs for affected premises. These users of the potentially flooded land that may lose their jobs as a consequence of the restoration activities, will be eligible for training, logistical support, material support in order to build new skills and improve their chances to find alternative employment in the project area. The GEF grant can not be used to pay cash compensation.

Detailed mechanisms for drawing upon this fund, including establishing an expert panel, developing eligibility criteria, procedures for application and a monitoring system, will be determined during the first year of project implementation with the participation of local stakeholders. The Recipient will obtain prior Bank approval before implementation of the fund. The Project Coordinating Unit through the Grants Program Officer will be responsible for managing this fund.

The Contingency Relief Fund will be administrated by the PCU. A public information campaign will disseminate information on the application process once a year. All applications will be reviewed by a panel including an environmental expert (from a local NGO), an agricultural economist/engineer expert, and a representative from the Regional Directorate of the Ministry of Agriculture and Forestry. Once a year, the Expert Panel will review claims, submitted in a standard format developed and disseminated by the Project Coordinating Unit. The evaluation will be made on the basis of technical assessments of the affected area and average harvest over the past three-five years. If losses claimed can be attributed to wetlands restoration activities, then the applicant will be awarded grants sufficient to offset the impacts of the losses. The Expert Panel has the responsibility of deciding, based on the detailed assessment, if the application is accepted for financing and the amount awarded for the grant. The PCU will obtain prior Bank approval before the funds are released. Relevant procurement rules and procedures from the "Good Practices in Procurement, Disbursement and Financial Management for Competitive Grant Programs in ECA Countries (World Bank, 2002)," will be followed under this Fund.

A baseline will be conducted in the first and second year of the project to assess the land that is currently flooded without the restoration works, so as to avoid fraud or abuse. All the information will be maintained in a GIS database. In addition, a survey on crop cultivation practices will be conducted during the first year of project implementation. Crop information to be collected will include: crop type and variety, location and hectare, type of agriculture practice, intended use of the crop, quantity of harvested production, reliable crop production records, etc. Detailed mechanisms for drawing upon this fund, including establishing an expert panel, developing eligibility criteria, procedures for application and a monitoring system, will be determined during first year of project implementation with the participation of local stakeholders.

- (c) Establishing a Farmer Transition Support Fund (Total: US\$1.25 million, GEF: US\$0.92

million, GoB: US\$0.21 million, Farmers: US\$0.12 million -- in-kind contribution). The Persina Nature Park and Kalimok/Brushlen Protected Site management plans are expected to support economic activities compatible with conservation objectives, namely environmentally-friendly agricultural practices and sustainable use of natural resources, and limit those that are not. The purpose of this fund is to help individual households, farmers and partnerships of local stakeholders make the transition from activities that are not compatible with the new protected areas regime (to be determined in the course of the preparation of the protected areas management plan). The exact number of farmers that will be affected and the economic activities needing modification by the new restrictions and regulations will be determined during the preparation of the management plan. It should be noted, however, that the new protected areas regime will not require involuntary physical displacement or relocation of people.

The fund will provide grants to offset the one-time cost to farmers of converting to compatible activities. Additional financial support for similar activities will be leveraged from other rural development and environmental programs, i.e., the Special Pre-Accession Program for Agriculture and Rural Development (SAPARD) Program, the State Agricultural Fund. An Operational Manual will regulate all procedures related to the Program, and will determine dissemination and announcement of program, composition of the evaluation committee, eligibility criteria, procedures for application and a monitoring system. A Farmer Transition Support Fund Evaluation Committee of technical experts will be created to ensure fairness and transparency in the application evaluation and monitoring procedures. The manual will be finalized within the first year of project implementation with the participation of local stakeholders and will be submitted for the Bank's approval before implementation. The administration of the grant will be contracted out. The administrator of the fund will develop and implement training, public awareness, and extension services (including demonstration sites and disseminating information). Farmers will be given a menu of options of compatible activities and be encouraged to apply for this funding. Possible options that could be supported under the fund may include: (i) livestock waste treatment; (ii) agro-forestry; (iii) low impact agriculture; (iv) low-till cropping; (v) low input agriculture; (vi) conversion of pastures to grazelands; (vii) improved pasture management; (viii) enrichment planting; (ix) organic farming; (x) other cost-saving yield-enhancing agriculture practices; (xi) tourism development and other alternative economic activities; and (xii) training of local people to benefit from any new employment opportunity arising throughout the project area.

- (d) Providing Support for Eco-Business Development (Total: US\$0.38 million, Austria: US\$0.38 million). The project will provide technical assistance and grant financing to local communities and individual farmers to: (i) identify existing sources of funds (i.e., EU programs PHARE, SAPARD, Cross-Border Cooperation, USAID, Swiss bilateral program, etc.); (ii) develop marketable “eco-friendly” business proposals; (iii) access grant funds; and (iv) support implementation of a small number of pilot schemes to promote small-scale environmentally friendly income generating initiatives. The Austrian Government, through the Ministry of Foreign Affairs, will provide financial support to the Russe Business Support Center (BSC) for Small and Medium Enterprises, with the expectation that two branches in the two project sites will be established. This will allow the Russe BSC to support the development of green-business proposals compatible with biodiversity conservation. The BSC will target its support to rural and urban clients located within the boundaries of the two project sites. In addition to advice on business

plan development, three forms of support are expected: a machine leasing fund program, a small loans fund program, and an investment fund program. In addition, the Austrian Government will finance consultancy services to carry out feasibility studies of "green business" concepts and ideas.

*Monitoring Program (Total: US\$1.00 million, EU PHARE: US\$0.17 million, GoB: US\$0.83 million)*

16. Through the EU PHARE project, technical assistance support and goods will be provided for the establishment of a comprehensive monitoring program in each project site to monitor and manage the ecosystem and biodiversity of the two restored wetlands and protected sites. The program will monitor quality of Danube water, nutrient trapping within the restored wetlands, surface and groundwater quality (including drinking and bathing water), groundwater table, meteorological data, sedimentation, biodiversity, crop yields, soil conditions, and public health risks and impacts. The monitoring system will be complementary to the one already existing at the Regional Inspectorates of Environment and Water at the project sites. Mosquito population and cases of malaria will also be monitored under the project. The project also supports the development of an integrated geographic information/remote sensing system for assisting the two park administrations and the Ministry of Environment and Water (MoEW) to monitor progress and performance of the activities implemented under the project. The capacity of the protected areas administrations and the Ministries of Environment and Water, Agriculture and Forestry, and Health will be considerably enhanced. To this end, consultant services will be mobilized to provide support in the detailed design including development of technical specifications and preparation of bidding documents for the supply and installation of equipment, and on-the-job training. As part of its contribution to the EU PHARE project, the MoEW will finance the supervision of the installation of the monitoring system and the procurement of the needed equipment.

17. During the preparation phase, a system to monitor the nutrient trapping of phosphorous and nitrogen through different environmental media (soil, water, plants, etc.) of the wetlands to be restored by the project was designed. Taking into consideration the recent accidents with the Romanian tailing ponds upstream of the Danube River and the heavily contaminated Timok River with heavy metals from Bor Mine, monitoring heavy metal concentrations will also be included in the monitoring system. The Project Implementation Plan provides a description of the monitoring program, including the parameters to be measured, sampling points and frequency. The proposed water quality monitoring system in the wetlands areas is compatible with the existing water quality monitoring system used by Bulgaria on the Danube River. The Regional Inspectorates of Water and Environment (RIEWs) will be responsible to take the lead in coordinating the work under this sub-component. NGOs, Academy of Sciences, park administration, Ministry of Health and Ministry of Agriculture and Forestry will provide advice, input and review to the RIEWs and consultants engaged in the design of the monitoring system.

*Public Awareness and Environmental Education (Total: US\$1.00 million, EU PHARE: US\$0.42 million, GEF: US\$0.20, GoB: US\$0.08 million)*

18. The project will enable protected areas administrations and municipalities to undertake a comprehensive public awareness and environmental education program. GEF funds will be used to support the establishment of a small grant scheme for biodiversity conservation targeted to local groups. The EU PHARE project, will finance consultant services to develop and implement a comprehensive Environmental Education and Public Awareness Program for the two project sites targeted to schools, teachers, hunters, etc. and to promote the role of wetlands management in reduction of nutrients, conservation of biodiversity and restoration of fishery resources, which could also be used at the national level, and to foster regional protected areas and wetlands management cooperation with Romania and other Black Sea/Danube

countries. Dissemination of project activities and benefits will be undertaken at the national and regional levels in order to achieve replication of project interventions. The project, through GEF funds, will provide for the organization of regional workshops, field visits by interested parties, training and other activities to promote replication of project activities in other Danube/Black Sea riparian countries. The UNDP/GEF Danube and the Black Sea Program provides a framework for dissemination and replication of successful demonstration to be developed under this project

19. The biodiversity conservation small grant program will be administered by the protected areas administrations supported by the PCU Local Liaison Officer. The Park Administration would: (i) finalize and disseminate the Biodiversity Conservation Small Grant Program Operational Manual, including composition of evaluation committee, description, scoring and selection criteria, and call for proposals; (ii) conduct workshops to disseminate the program; (iii) monitor implementation of individual grants contracts; (iv) publish annual summaries of the results of the competition, including description of proposals received and selected, and the basis for the selection; and (v) organize two workshops (in year 2 and 3) to review results and disseminate lessons learned. Eligibility criteria for individual projects will include direct support of protected areas management objectives. Activities to be supported by the grant scheme should be within the two project protected areas. Within the framework of the two Consultative Councils, advisory committees will be established to oversee the implementation of the small grant scheme.

*Nutrient Reduction Strategy Guidelines (Total: US\$0.20 million, GEF: US\$0.17 million, GoB: US\$0.03 million)*

20. As a part of Bulgaria's strategy to meet its international obligations as well as to comply with the EU Water Framework Directive and the new Water Law, the Government is preparing to establish river basin authorities. This component will finance consulting services to assist the Government to identify the role of wetlands restoration as a viable measure to contribute to the reduction of nutrients, to develop a decision-support system application using Geographic Information System concepts for water quality and nutrient control, and to draft strategic guidelines to support preparation of a nation-wide nutrient reduction strategy. This component will also support activities to disseminate project results throughout the Danube and Black Sea basins.

*Strengthening Capacity of Institutions Involved in the Management of Natural Resources within Protected Areas (Total: US\$1.92 million, GEF: US\$1.20 million, PHARE: US\$0.27 million, GoB: US\$0.41 million, Municipalities: US\$0.03 million)*

21. In order to manage the natural resources within the protected areas (including the flooded wetlands) and promote environmentally-friendly economic development, local and regional institutions will need to be supported with vehicles, office equipment and training – formal education programs, on the job training, study tours, field visits, seminars, and exchange programs, and minimum incremental operating funds. Limited civil works activities to renovate existing office buildings will also be supported under the project. The EU PHARE project will support capacity building activities through development of training modules for local stakeholders, national study tours for sharing/exchange of experience with other protected areas, provision of on-the-job training. Incremental staffing will be funded by the Government.

### **Project Component 3 - US\$ 0.89 million**

**Project Coordination, Management and Monitoring (US\$0.89 million, GEF: US\$0.69 million, GoB: US\$0.20 million)**

22. This component will support a Project Coordinating Unit (PCU) within the Ministry of

Environment and Water (MoEW) in Sofia with field staff located in Persina Nature Park and Kalimok/Brushlen Protected Site and with substantial physical presence in the project area to coordinate, manage and monitor the activities under the project. The PCU will be responsible for procurement, financial management, and disbursement related to the activities funded by the GEF grant; financial management reporting of overall project; monitoring/evaluation and reporting of overall progress implementation; coordination with the Russe BSC and the PHARE-Unit within the MoEW responsible for the implementation of project activities supported through parallel financing; and coordination with central ministries and their regional and local branches. Each of the protected areas administrations will be assisted by a full-time Local PCU Liaison Officer (to be funded by the project) to facilitate procurement of project related goods, works and services, coordination, and reporting of project implementation. The Local PCU Liaison Officers will be hosted within the premises of the protected areas administrations. The PCU through the Grants Officer and consultants will provide assistance to improve local communities prospects for accessing other grant programs for nature-based business enterprises.

23. In order to assist the PCU to carry out its responsibilities, the project will provide funds to meet salaries and fees of the PCU staff and technical experts/advisors (on demand); incremental operating expenses of the PCU; engage consultants to design and install a monitoring program for the evaluation of project impacts; engage consultants to carry out impact evaluation studies over the life of the project; and to finance auditing services over the life of the project. The project will also provide funds for an initial project launch workshop, followed by two procurement workshops, and other workshops over the project period. This component will be funded by GEF.

## Annex 3: Estimated Project Costs

### BULGARIA: Wetlands Restoration and Pollution Reduction Project

|  | Components by Financiers (in US\$ '000) |       |        |       |        |      |         |       |        |      |                |     |        |       |
|--|---|-------|--------|-------|--------|------|---------|-------|--------|------|----------------|-----|--------|-------|
|  | GEF                                     |       | GoB    |       | PHARE  |      | AUSTRIA |       | TBI    |      | Municip & Farm |     | Total  |       |
|  | Amount                                  | %     | Amount | %     | Amount | %    | Amount  | %     | Amount | %    | Amount         | %   | Amount | %     |
| <b>A. Wetlands Restoration</b>                             |   |       |        |       |        |      |         |       |        |      |                |     |        |       |
| 1. Restoration of Belene Island and K/B Marshes            | 3,426                                   | 83.3  | 685    | 16.7  | -      | -    | -       | -     | -      | -    | -              | -   | 4,111  | 31.0  |
| 2. Restoration of Additional Sites                         | -                                       | -     | 151    | 16.7  | -      | -    | -       | -     | 757    | 83.3 | -              | -   | 909    | 6.8   |
| <b>Subtotal Wetlands Restoration</b>                       | 3,426                                   | 68.2  | 837    | 16.7  | -      | -    | -       | -     | 757    | 15.1 | -              | -   | 5,020  | 37.8  |
| <b>B. Protected Areas Management</b>                       |   |       |        |       |        |      |         |       |        |      |                |     |        |       |
| 1. Protected Areas Management Planning                     | -                                       | -     | 72     | 10.0  | 648    | 90.0 | -       | -     | -      | -    | -              | -   | 720    | 5.4   |
| <b>2. Supporting Protected Areas Management Activities</b> |   |       |        |       |        |      |         |       |        |      |                |     |        |       |
| O&M Restored Wetlands and Related Protected Sites          | 472                                     | 83.3  | 94     | 16.7  | -      | -    | -       | -     | -      | -    | -              | -   | 567    | 4.3   |
| Contingency Relief Fund                                    | 411                                     | 76.1  | 129    | 23.9  | -      | -    | -       | -     | -      | -    | -              | -   | 541    | 4.1   |
| Sustainable Use of Natural Resources                       | -                                       | -     | 8      | 10.0  | 72     | 90.0 | -       | -     | -      | -    | -              | -   | 80     | 0.6   |
| Farmer Transition Support Fund                             | 920                                     | 73.9  | 208    | 16.7  | -      | -    | -       | -     | -      | -    | 117            | 9.4 | 1,245  | 9.4   |
| Eco-Business Development Support                           | -                                       | -     | -      | -     | -      | -    | 381     | 100.0 | -      | -    | -              | -   | -      | -2.9  |
| <b>Subtotal</b>  | 1,804                                   | 64.1  | 439    | 15.6  | 72     | 2.6  | 381     | 13.5  | -      | -    | 117            | 4.2 | 2,815  | 21.2  |
| <b>3. Monitoring Program</b>                               |   |       |        |       |        |      |         |       |        |      |                |     |        |       |
| Design and Supervision of Monitoring System                | -                                       | -     | 19     | 10.0  | 175    | 90.0 | -       | -     | -      | -    | -              | -   | 194    | 1.5   |
| Procurement and Installation of Monitoring Systems         | -                                       | -     | 809    | 100.0 | -      | -    | -       | -     | -      | -    | -              | -   | 809    | 6.1   |
| <b>Subtotal Monitoring Program</b>                         | -                                       | -     | 828    | 82.6  | 175    | 17.4 | -       | -     | -      | -    | -              | -   | 1,004  | 7.6   |
| <b>4. Public Awareness and Environmental Education</b>     |   |       |        |       |        |      |         |       |        |      |                |     |        |       |
| Small Grant Scheme for Biodiversity Conservation           | 198                                     | 83.3  | 40     | 16.7  | -      | -    | -       | -     | -      | -    | -              | -   | 238    | 1.8   |
| Environmental Education and Training Program               | -                                       | -     | 46     | 10.0  | 418    | 90.0 | -       | -     | -      | -    | -              | -   | 465    | 3.5   |
| <b>Subtotal</b>  | 198                                     | 28.2  | 86     | 12.2  | 418    | 59.6 | -       | -     | -      | -    | -              | -   | 702    | 5.3   |
| 5. Nutrient Reduction Strategy Guidelines                  | 167                                     | 83.3  | 33     | 16.7  | -      | -    | -       | -     | -      | -    | -              | -   | 201    | 1.5   |
| <b>6. Strengthening Implementing Agencies Capacity</b>     |   |       |        |       |        |      |         |       |        |      |                |     |        |       |
| <b>a. Support to Institutional Development</b>             |   |       |        |       |        |      |         |       |        |      |                |     |        |       |
| Technical Assistance and On-Job Training                   | -                                       | -     | 30     | 10.0  | 273    | 90.0 | -       | -     | -      | -    | -              | -   | 303    | 2.3   |
| Training Abroad and Study Tours                            | 151                                     | 100.0 | -      | -     | -      | -    | -       | -     | -      | -    | -              | -   | 151    | 1.1   |
| Equipment, Vehicles and Supplies for Park Administration   | 326                                     | 83.3  | 65     | 16.7  | -      | -    | -       | -     | -      | -    | -              | -   | 392    | 2.9   |
| Construction/Renovation of Park Administration Buildings   | 470                                     | 79.0  | 94     | 15.8  | -      | -    | -       | -     | -      | -    | 31             | 5.2 | 595    | 4.5   |
| <b>Subtotal Support to Institutional Development</b>       | 947                                     | 65.8  | 190    | 13.2  | 273    | 18.9 | -       | -     | -      | -    | 31             | 2.2 | 1,440  | 10.8  |
| <b>b. Incremental Operating Expenses</b>                   |   |       |        |       |        |      |         |       |        |      |                |     |        |       |
| Park Administrations                                       | 119                                     | 56.1  | 93     | 43.9  | -      | -    | -       | -     | -      | -    | -              | -   | 211    | 1.6   |
| Managing Control Structures in Restored Wetlands           | 65                                      | 50.3  | 64     | 49.7  | -      | -    | -       | -     | -      | -    | -              | -   | 129    | 1.0   |
| Monitoring System  | 79                                      | 56.1  | 62     | 43.9  | -      | -    | -       | -     | -      | -    | -              | -   | 141    | 1.1   |
| <b>Subtotal</b>  | 262                                     | 54.6  | 219    | 45.5  | -      | -    | -       | -     | -      | -    | -              | -   | 481    | 3.6   |
| <b>Subtotal</b>  | 1,209                                   | 62.9  | 408    | 21.3  | 273    | 14.2 | -       | -     | -      | -    | 31             | 1.6 | 1,921  | 14.5  |
| <b>Subtotal Protected Areas Management</b>                 | 3,379                                   | 45.9  | 1,868  | 25.4  | 1,587  | 21.5 | 381     | 5.2   | -      | -    | 149            | 2.0 | 7,363  | 55.4  |
| <b>C. Project Management</b>                               |   |       |        |       |        |      |         |       |        |      |                |     |        |       |
| 1. Support for Overall Project Coordination and Management | 551                                     | 76.1  | 173    | 23.9  | -      | -    | -       | -     | -      | -    | -              | -   | 725    | 5.5   |
| 2. Monitoring and Evaluation                               | 71                                      | 83.3  | 14     | 16.7  | -      | -    | -       | -     | -      | -    | -              | -   | 85     | 0.6   |
| 3. Financial Auditing                                      | 73                                      | 83.3  | 15     | 16.7  | -      | -    | -       | -     | -      | -    | -              | -   | 88     | 0.7   |
| <b>Subtotal Project Management</b>                         | 695                                     | 77.5  | 202    | 22.5  | -      | -    | -       | -     | -      | -    | -              | -   | 897    | 6.8   |
| <b>TOTAL PROJECT COST</b>                                  | 7,500                                   | 56.5  | 2,907  | 21.9  | 1,587  | 11.9 | 381     | 2.9   | 757    | 5.7  | 149            | 1.1 | 13,280 | 100.0 |

|  | Disbursement Accounts by Financiers (in US\$' 000) |      |        |      |        |      |         |       |        |      |              |       |        |       |
|--|--|------|--------|------|--------|------|---------|-------|--------|------|--------------|-------|--------|-------|
|  | GEF  |      | GoB    |      | PHARE  |      | AUSTRIA |       | TBI    |      | Munic & Farm |       | Total  |       |
|  | Amount   | %    | Amount | %    | Amount | %    | Amount  | %     | Amount | %    | Amount       | %     | Amount | %     |
| 1. Works                                     | 3,783  | 71.3 | 885    | 16.7 | -      | -    | -       | -     | 639    | 12.0 | -            | -     | 5,307  | 40.0  |
| 2. Land                                      | -  | -    | -      | -    | -      | -    | -       | -     | -      | -    | 31           | 100.0 | 31     | 0.2   |
| 3. Goods                                     | 482  | 34.7 | 905    | 65.2 | -      | -    | -       | -     | -      | -    | -            | -     | 1,387  | 10.4  |
| 4. Consultancy Services                      | 1,243  | 36.9 | 440    | 13.1 | 1,508  | 44.8 | 60      | 1.8   | 118    | 3.5  | -            | -     | 3,368  | 25.4  |
| 5. Training and Study Tours                  | 179  | 65.8 | 14     | 5.3  | 79     | 28.9 | -       | -     | -      | -    | -            | -     | 272    | 2.1   |
| 6. Small Grant for Biodiversity Conservation | 198  | 83.3 | 40     | 16.7 | -      | -    | -       | -     | -      | -    | -            | -     | 238    | 1.8   |
| 7. Contingency Relief Fund                   | 382  | 75.6 | 123    | 24.5 | -      | -    | -       | -     | -      | -    | -            | -     | 505    | 3.8   |
| 8. Farmer Transition Support Grant           | 861  | 73.3 | 196    | 16.7 | -      | -    | -       | -     | -      | -    | 117          | 10.0  | 1,174  | 8.8   |
| 9. Eco-Business Grant                        | -  | -    | -      | -    | -      | -    | 321     | 100.0 | -      | -    | -            | -     | 321    | 2.4   |
| 10. Incremental Operating Costs              | 372  | 55.1 | 304    | 44.9 | -      | -    | -       | -     | -      | -    | -            | -     | 676    | 5.1   |
| <b>Total</b>                                 | 7,500  | 56.5 | 2,907  | 21.9 | 1,587  | 11.9 | 381     | 2.9   | 757    | 5.7  | 149          | 1.1   | 13,280 | 100.0 |

**Project Components by Year -- Totals Including Contingencies (in US\$ '000)**

|  | <b>Totals Including Contingencies</b> |              |              |              |              |             | <b>Total</b>  |
|--|---------------------------------------|--------------|--------------|--------------|--------------|-------------|---------------|
|  | <b>2002</b>                           | <b>2003</b>  | <b>2004</b>  | <b>2005</b>  | <b>2006</b>  | <b>2007</b> |               |
| <b>A. Wetlands Restoration</b>                                   |                                       |              |              |              |              |             |               |
| 1. Restoration of Belene Island and K/B Marshes                  | 217                                   | 1,276        | 1,765        | 853          | -            | -           | 4,111         |
| 2. Restoration of Additional Sites                               | -                                     | 9            | 114          | 387          | 399          | -           | 909           |
| <b>Subtotal Wetlands Restoration</b>                             | <b>217</b>                            | <b>1,285</b> | <b>1,879</b> | <b>1,240</b> | <b>399</b>   | <b>-</b>    | <b>5,020</b>  |
| <b>B. Protected Areas Management</b>                             |                                       |              |              |              |              |             |               |
| 1. Protected Areas Management Planning                           | -                                     | 231          | 245          | 245          | -            | -           | 720           |
| <b>2. Supporting Protected Areas Management Activities</b>       |                                       |              |              |              |              |             |               |
| O&M Restored Wetlands and Related Protected Sites                | 23                                    | 82           | 155          | 181          | 126          | -           | 567           |
| Contingency Relief Fund  | 16                                    | 19           | 145          | 195          | 84           | 82          | 541           |
| Sustainable Use of Natural Resources                             | -                                     | 26           | 27           | 27           | -            | -           | 80            |
| Farmer Transition Support Fund                                   | -                                     | 177          | 304          | 376          | 388          | -           | 1,245         |
| Eco-Business Development Support                                 | 36                                    | 93           | 134          | 118          | -            | -           | 381           |
| <b>Subtotal Supporting Protected Areas Management Activities</b> | <b>75</b>                             | <b>396</b>   | <b>766</b>   | <b>898</b>   | <b>597</b>   | <b>82</b>   | <b>2,815</b>  |
| <b>3. Monitoring Program</b>                                     |                                       |              |              |              |              |             |               |
| Design and Supervision of Monitoring System                      | -                                     | 115          | 39           | 41           | -            | -           | 194           |
| Procurement and Installation of Monitoring Systems               | -                                     | 259          | 275          | 275          | -            | -           | 809           |
| <b>Subtotal Monitoring Program</b>                               | <b>-</b>                              | <b>374</b>   | <b>314</b>   | <b>315</b>   | <b>-</b>     | <b>-</b>    | <b>1,004</b>  |
| <b>4. Public Awareness and Environmental Education</b>           |                                       |              |              |              |              |             |               |
| Small Grant Scheme for Biodiversity Conservation                 | -                                     | 46           | 82           | 85           | 25           | -           | 238           |
| Environmental Education and Training Program                     | -                                     | 149          | 158          | 158          | -            | -           | 465           |
| <b>Subtotal Public Awareness and Environmental Education</b>     | <b>-</b>                              | <b>194</b>   | <b>240</b>   | <b>243</b>   | <b>25</b>    | <b>-</b>    | <b>702</b>    |
| 5. Nutrient Reduction Strategy Guidelines                        | -                                     | -            | 48           | 50           | 51           | 52          | 201           |
| <b>6. Strengthening Implementing Agencies Capacity</b>           |                                       |              |              |              |              |             |               |
| <b>a. Support to Institutional Development</b>                   |                                       |              |              |              |              |             |               |
| Technical Assistance and On-Job Training                         | -                                     | 97           | 103          | 103          | -            | -           | 303           |
| Training Abroad and Study Tours                                  | 29                                    | 29           | 30           | 31           | 32           | -           | 151           |
| Equipment, Vehicles and Supplies for Park Administration         | -                                     | 159          | 164          | 68           | -            | -           | 392           |
| Construction/Renovation of Park Administration Buildings         | 31                                    | 12           | 169          | 162          | 222          | -           | 595           |
| <b>Subtotal Support to Institutional Development</b>             | <b>60</b>                             | <b>297</b>   | <b>466</b>   | <b>364</b>   | <b>254</b>   | <b>-</b>    | <b>1,440</b>  |
| <b>b. Incremental Operating Expenses</b>                         |                                       |              |              |              |              |             |               |
| Park Administrations   | 10                                    | 40           | 41           | 43           | 44           | 34          | 211           |
| Managing Control Structures in Restored Wetlands                 | -                                     | -            | 33           | 34           | 35           | 27          | 129           |
| Monitoring System  | 7                                     | 27           | 28           | 28           | 29           | 22          | 141           |
| <b>Subtotal Incremental Operating Expenses</b>                   | <b>16</b>                             | <b>67</b>    | <b>102</b>   | <b>105</b>   | <b>108</b>   | <b>83</b>   | <b>481</b>    |
| <b>Subtotal Strengthening Implementing Agencies Capacity</b>     | <b>76</b>                             | <b>364</b>   | <b>568</b>   | <b>469</b>   | <b>362</b>   | <b>83</b>   | <b>1,921</b>  |
| <b>Subtotal Protected Areas Management</b>                       | <b>151</b>                            | <b>1,559</b> | <b>2,181</b> | <b>2,219</b> | <b>1,035</b> | <b>217</b>  | <b>7,363</b>  |
| <b>C. Project Management</b>                                     |                                       |              |              |              |              |             |               |
| 1. Support for Overall Project Coordination and Management       | 107                                   | 124          | 129          | 133          | 137          | 95          | 725           |
| 2. Monitoring and Evaluation                                     | 23                                    | 12           | 12           | 12           | 13           | 13          | 85            |
| 3. Financial Auditing  | 14                                    | 14           | 14           | 15           | 15           | 16          | 88            |
| <b>Subtotal Project Management</b>                               | <b>143</b>                            | <b>150</b>   | <b>156</b>   | <b>160</b>   | <b>165</b>   | <b>123</b>  | <b>897</b>    |
| <b>Total PROJECT COSTS</b>                                       | <b>512</b>                            | <b>2,994</b> | <b>4,216</b> | <b>3,619</b> | <b>1,599</b> | <b>340</b>  | <b>13,280</b> |

## **Annex 4: Incremental Costs and Global Environmental Benefits and Cost-Effectiveness Analysis**

### **BULGARIA: Wetlands Restoration and Pollution Reduction Project**

#### ***INCREMENTAL COSTS AND GLOBAL ENVIRONMENTAL BENEFITS***

##### **Overview**

1. The main objectives of the GEF Alternative are to support local communities and local authorities in the Persina Nature Park and Kalimok/Brushlen Protected Site areas adopt sustainable natural resources management practices, demonstrate how environmentally-friendly rural development activities can improve livelihoods, and demonstrate and provide for replication of reduction of transboundary nutrient loads and other agricultural pollution flowing into the Danube River and the Black Sea Basins. The GEF Alternative will assist in: (i) restoration of critical priority wetlands in the Danube River basin and piloting the use of riparian wetlands as nutrient traps; (ii) establishment of comprehensive monitoring systems for water quality and ecosystem health; (iii) support for protected areas planning in Persina Nature Park and Kalimok/Brushlen Protected Site; (iv) strengthening capacity to protect and manage biodiversity and natural resources; (v) building public awareness of sustainable natural resources management and biodiversity conservation; and (vi) promoting and supporting entrepreneurial and agricultural activities within the project region which ensure the sustainability of natural resources and are compatible with biodiversity conservation objectives. The GEF Alternative intends to achieve these outputs at a total incremental cost of approximately US\$13.28 million, of which a grant of US\$7.50 million is requested from the GEF. The Government of Bulgaria (including farmers and local municipalities) has committed to financing US\$3.05 million of its resources. EU PHARE and the Austrian Government are also expected to provide support on a parallel financing basis in the amount of \$1.97 million to complement GEF funding. Other donors have been approached to help fill the financial gap in the amount of US\$0.76 million.

##### **Context and Broad Development Goals**

2. The natural resources of the Black Sea suffer from eutrophication (i.e. choking and collapse of food chains due to loss of oxygen), declining water quality, loss of habitat and the introduction of exotic species – due to, *inter alia*, excessive agricultural run-off within the entire watershed, insufficiently treated sewage, and inadequate resources management. In-depth analytical work points to eutrophication, caused by an increase in nutrient flux down the major rivers, as the most serious problem facing the Danube River and the Black Sea over medium to long-term. The effects of eutrophication on the northwestern shelf of the Black Sea at the mouth of the Danube have had particularly disastrous impacts on water quality, natural habitat, and fish populations on which both biodiversity and human populations depend. The Danube/Black Sea Basin Partnership Strategy Report outlines the most urgent actions needed to be adopted by the countries of the region to fulfill their international legal obligations under the Danube and Black Sea Conventions. It proposes measures to reduce excessive nutrient loads, mostly nitrogen and phosphorus in the rivers discharging into the Black Sea, particularly into the Danube.

3. The Danube River is one of the continent's largest and most important rivers linking Central and Eastern Europe. It flows about 2900 kilometers through ten countries including 300 tributaries, from Germany to the Black Sea, draining 817,000 square kilometers. The lower Danube is also one of Europe's most polluted rivers. It contributes approximately 60% of the nutrients of the Black Sea. Approximately 60% of the nitrogen compounds and about 66% of the phosphorous compounds originate

from non-point sources within the Danube watershed.

4. The Danube forms the border between Bulgaria and its northern neighbor Romania for 472 kilometers before continuing through Romania to the Black Sea. More than half the area on the Bulgarian bank of the Danube are former floodplains, covering 1280 square km. Over the years, the wetlands and floodplain have been drained or dyked to create arable land or as an anti-malaria measure, such that today's wetlands cover only about 10% of the area that existed at the turn of the century and hence cannot perform their original ecological function. Although about half of the country drains into the Danube River, Bulgaria is not the largest contributor of nutrient loads to the river. The Transboundary Diagnostic Analysis (TDA) undertaken by the Black Sea 1993-99 indicates that Bulgaria places third on the Black Sea states in terms of the nitrogen (N) and phosphorous (P) it contributes to the Sea, and accounts for between 1%-5% of the total pollution.

5. The proposed project sites are among 16 former floodplains with potentially high environmental benefits recommended for restoration in the GEF-financed Pollution Reduction Program study of the Danube Commission, based on the sites' ecological potential, floodplain type and width, current land use and nutrient reduction potential. The project addresses the highest priority transboundary problem identified in the Strategic Action Plans (financed by the GEF and the EU) of both the Black Sea and the Danube River. Bulgaria's National Biodiversity Strategy (1994) identifies the Danube wetland complex within the project site as the most representative of riverine wetlands and of international importance for waterfowl habitat. Similarly, the Bulgarian National Plan for the Conservation of the Most Important Wetlands (1995) considers two of the proposed sites as high priority areas for restoration. Both project sites – Persina Marshes and Kalimok Marshes, are CORINE Biotope Sites and can become part of the NATURA 2000 network upon EU accession of Bulgaria. One of the proposed project areas, Belene Island, is of particular international importance such as a breeding habitat for the endangered white-tailed eagle and nesting herons. The project sites also serve as nesting places for the Ferruginous Duck (*Aythya nyroca*) and formerly for the endangered Dalmatian Pelican (*Pelecanus crispus*). These water and terrestrial ecosystems and the flora and fauna within the Project sites are, however, under threat from disruptions to natural waterflows and poor management of the region's natural resources. Establishing effective natural resources management and drafting and implementing protected areas management plans for these areas will be critical to halting these threats to the ecosystem.

7. The broad development goals of Bulgaria focus on public sector management, private sector development, social protection and poverty reduction, and environmental protection. One of the five pillars of the Country Assistance Strategy is protecting and enhancing the environment and ensuring prudent and rational utilization of natural resources. The Government of Bulgaria has taken important steps towards improved environmental management in recent years, including the development of national strategies such as the Bulgarian National Biodiversity Strategy and the recent Protected Area Law (PAL) and Strategy on the Protection and Restoration of Floodplain Forests on the Bulgarian Danube Islands, endorsed by the Ministry of Agriculture and Forests and the Ministry of Environment and Water in September 2001. The Government and local officials are eager to integrate interventions which address the issue of transboundary pollution and global biodiversity benefits with efforts towards meeting EU Accession requirements related to EU Directives on Water Policy and Environment. With World Bank, GEF and other donor support, the Government aims to integrate environmental principles into other sectoral policies and activities, build institutional capacity, and raise public awareness. The country's natural resources will need to be appropriately managed in order to optimize the commercial, environmental and social benefits that they can bring.

## Baseline Scenario

8. Up until the 1950's, the marsh complex in Belene/Persina and Kalimok/Brushlen were a key part of the region's valuable natural resources. The forested Danubian coastal islands and adjacent coastline were part of the yearly Danubian flood cycle which created critical habitat for birds and fish. By the 1950's, however, for agricultural purposes, a dyke was constructed along the Danubian coast between the towns of Ruse and Tutrakan. Fish were cut from their historical spawning grounds, and the original marshlands have been drying up. Fish ponds (encircling 560 ha of state-owned land) were constructed, but they were declared bankrupt and abandoned after the collapse of the state farming and irrigation systems. Many of the original marshlands have reverted to reed beds, with open water areas and biodiversity diminishing every year. Adjacent areas are privately and municipality-owned and used for agriculture of varying productivity levels. In addition, riverine forests along the coast and on the Danubian islands have been converted to hybrid poplar plantations with negative environmental consequences and unclear financial benefit. While the Bulgarian agricultural sector does not currently input heavy nutrient loads into the Danube/Black Sea basin, signs of a revitalized large-scale dairy and pig-farming without associated waste management could become a cause of water quality concern. Restoring portions of the original wetlands and establishing a foundation for sustainable management of natural resources within the protected areas (which cover a landscape of mixed use and ownership) will be critical to restoring some of the ecosystem functions and values of the Project region.

9. Under the Baseline Scenario, it is expected that Government of Bulgaria and local municipal expenditures related to nutrient reduction and wetland restoration, environmental monitoring and habitat conservation programs in the project area over the life of the project will be US\$0.86 million, mainly through the Ministry of Environment and Waters and Ministry of Agriculture (State Forestry Board) annual budgets.

10. A number of wetland restoration, natural resources management and biodiversity conservation activities in Bulgaria are being (or will be) financed by other international development agencies or NGOs. These, plus Government of Bulgaria contributions are summarized in the Incremental Cost Analysis matrix and are discussed below:

- Approximately US\$2.9 million **Phare Integrated Monitoring of the Black Sea Coast** will help monitor Black Sea coastal pollution between Durankulak and Rezovo by strengthening the capacities of institutions responsible for marine monitoring -- assisting in Bulgaria's overall ability to assist in the reduction of nutrients in the Black Sea watershed (estimated US\$100,000 related to project objectives and region).
- International donor and governmental support for the **Sreberna Nature Reserve**, a wetland site adjacent to the project area, will be approximately US\$300,000 during the life of the Project.
- The **WWF-International Danube-Carpathian Programme Office (DCPO)** has prepared a proposal for GEF MSP (through UNDP) for US\$750,000 to prepare the grounds for planned wetlands restoration and sustainable management projects throughout the Lower Danube, by building capacities on the ground and developing participatory approaches for these projects' planning and implementation. If funded, it will also demonstrate how to prepare and integrate local stakeholder groups for large-scale wetland restoration projects (estimated US\$100,000 related to project region).
- The **PHARE Cross Border Cooperation Program** aims to contribute approximately \$250,000

for assistance to both Bulgaria and Romania in fulfilling EU environmental requirements, specifically by preparing a proposal for a Wetland Park in the Bulgarian Silistra District, and preparing a Joint Control System for Emissions of VOC, PAH and heavy metals from stationary sources in the Bulgarian - Romanian regions (estimated US\$100,000 related to project).

- The **ACCESS Parks in Bulgaria/Partnerships for Europe** program can be expected to increase the capacities of park administrations throughout Bulgaria, help disseminate successful practices, increase public awareness and strengthen links and cooperation between protected areas and the local, regional and national authorities. Total project costs are estimated at US\$78,000, of which US\$10,000 is estimated to be relevant to the project.
- The US\$54,000 **Floodplain Forest Restoration Strategy and Action Plan for the Danube Islands**, under preparation by WWF and the Government of Bulgaria, will establish a basis for sustainable forestry on the Bulgarian Danube islands, through the analysis of economically viable and environmentally sound alternatives to poplar plantations, their incorporation into a Floodplain Forest Restoration Strategy and Action Plan for the Danube islands, and the amendment of the current local Forestry Plans in the project area. A US\$2 million proposal for its implementation has been fielded.
- Under the **Green Balkans Public Awareness Raising on the Lower Danube Green Corridor in Bulgaria and Romania**, the Danish Outdoor Council has made available US\$27,000 for the preparation of a public awareness campaign for local communities along the Danube about the ecological importance of and sustainable development opportunities provided by healthy wetlands and for promoting the Lower Danube Green Corridor initiative as a means to achieving sustainable wetlands management (estimated US\$10,000 relevant to project).

11. **Costs.** Total expenditures under the Baseline Scenario are estimated at **US\$1.23 million** including **US\$0.86 million** from the Government of Bulgaria, and **US\$0.37 million** through international cooperation (bilateral aid and NGOs).

12. **Benefits.** Implementation of the Baseline Scenario will result in limited improvement of nutrient discharged into the Danube and the Black Sea, limited protection of biodiversity in coastal areas and limited public awareness of the need for biodiversity conservation. Many of the initiatives listed under the Baseline Scenario are, however, monitoring, public awareness and planning exercises, with little support for actual implementation of the physical works required to restore and maintain wetlands and critical habitats which will ultimately serve to reduce nutrient loads and protect globally significant biodiversity. Due to the extensive investment needs, existing government and international financing efforts in the designated areas will most likely not have a significant impact on the continuing damage to these fragile areas, which are subject to strong succession processes, accelerated by human impacts. Thus, under the Baseline Scenario, these valuable wetland ecosystems and their essential environmental functions will most probably be lost completely in the course of the next decade.

### **Global Environmental Objective**

13. As a consequence of the current course of action, regarded as the Baseline Scenario, the Danube River/Black Sea corridor will likely continue to lose these wetland systems and the services and habitats they provide.

14. **Scope.** The GEF Alternative would provide the means (above and beyond the Baseline Scenario) to restore critical wetlands and the riverine landscape in the Danube/Black Sea basin and establish a

foundation for sustainable natural resource use and development within Persina Nature Park and Kalimok/Brushlen Protected Site. The specific objectives of the Project are to: (i) restore wetlands along the Danube and Black Sea coasts; (ii) establish and implement natural resources management within the identified protected areas; (iii) monitor water quality and biodiversity health in the project region; (iv) strengthen institutions responsible for natural resources within the project region; (v) raise public awareness; and (vi) develop national nutrient reduction strategy guidelines.

16. **Costs.** The total cost of the GEF Alternative estimated at US\$13.28 million is detailed as follows:

- **Support for Wetland Restoration:** Restoration of Belene Island and Kalimok/Brushlen marshes, as well as additional sites to be identified during project implementation -- US\$5.02 million (GEF financing \$3.43 million);
- **Support for Protected Areas Management:** (i) development of protected areas management plans (US\$0.72 million); (ii) implementation of priority protected areas management activities (US\$2.82 million); (iii) monitoring of water quality and ecosystem/habitat health (US\$1.00 million); (iv) public awareness and education (US\$0.70 million); (v) institutional strengthening (US\$1.92 million) and (vi) guidelines for nutrient reduction programs (US\$0.20 million) -- US\$7.37 million (GEF financing US\$3.38 million).
- **Project Management:** Support for operating costs of a Project Management Unit, located with the Ministry of Environment and Waters (central and regional offices) -- US\$0.89 million (GEF financing US\$0.69 million).

17. **Benefits.** Implementation of the GEF Alternative would provide the means for restoring high priority wetlands, protect unique coastal landscapes and habitats for important bird species. Benefits generated from the project would include those classified as "national" - protection of local and regional environmental resources and increased public awareness of environmental issues - as well as those considered "global" in nature. Global benefits would be the reduction of nutrients in inflow waters and the protection of a rare and unique ecosystem. The GEF grant has helped leverage funds from other donors for additional activities.

### **Incremental Costs**

18. The difference between the cost of the Baseline Scenario (US\$1.23 million) and the cost of the GEF Alternative (US\$13.28 million) is estimated at US\$12.05 million. This represents the incremental cost for achieving sustainable global environmental benefits. Of this amount, the Government of Bulgaria (including municipalities) has committed to financing US\$3.05 million, US\$1.97 million is leveraged from EU PHARE and the Government of Austria, US\$7.5 million is requested from the GEF, and additional US\$0.76 to be leveraged from other donors.

### Incremental Cost Matrix

| Component Sector   | Cost Category        | US\$ Million | Domestic Benefits  | Global Benefits  |
|--|----------------------|--------------|--|--|
| Wetland Restoration for Nutrient Reduction and Biodiversity Habitat. | Baseline             | 0.05         | No restored wetland ecosystems. Thus, no reduction of nutrients in the Danube River / Black Sea, and restoration of habitat limited to the development of a strategy for native floodplain forests on Danubian Islands (estimated 40,000 ha).  |  |
|  | With GEF Alternative | 5.02         | Increased fishery production; improved water quality downstream project sites; increased opportunities for biomass production.   | Restoration of wetland ecosystems, with an discernible reduction of nutrient loads to the Black Sea (218,000-813,000 kg of nitrates and 23,400-37,400 kg of phosphorus per year); restoration of internationally important biodiversity habitat. |
|  | Incremental Benefit  | 4.97         |  |  |
| Protected Areas Management Planning and Implementation.              | Baseline             | 1.18         | Limited capacity to plan and implement protected area management in wetland and protected areas; limited public awareness of environmental issues and the need for sustainable natural resource management; no comprehensive strategy for nutrient reduction in the nation's waterways; and no management structure for Kalimok/Brushlen Protected Site. |  |
|  | With GEF             | 7.37         | Increased opportunities for  | Sustainable integrated   |

|   |                      |       |  |  |
|---|----------------------|-------|--|--|
|   | Alternative          |       | alternative income generation in rural communities based on sustainable management of land and water resources; increased flow of goods and environmental services; increased capacity to manage protected areas; creation of opportunities for education and nature oriented tourism; and efficient and effective management structure for Kalimok/Brushlen Protected Site. | conservation management at priority sites of internationally important biological diversity and buffer zones; meaningful participation of local stakeholders in protected area management activities; increased awareness and use of biodiversity-friendly agricultural activities; increased local, national and international understanding of threats to globally significant biodiversity; and a Bulgarian national strategy for nutrient reduction in the Danube River/Black Sea watershed. |
|   | Increment            | 6.19  |  |  |
| Project management and information dissemination. | Baseline             | 0.00  | Not applicable   |  |
|   | With GEF Alternative | 0.89  |  | Information sharing with other riparian countries.   |
|   | Increment            | 0.89  |  |  |
| Totals  | Baseline             | 1.23  |  |  |
|   | With GEF Alternative | 13.28 |  |  |
|   | Increment            | 12.05 |  |  |

### ***COST-EFFECTIVENESS RATIOS***

The main assumptions to estimate the cost-effectiveness ratios to remove one kilogram of nitrogen and phosphorous are presented in the table below.

| <b>Site</b>          |       |        | <b>Units</b>          | <b>Nitrogen Removal</b> |         | <b>Phosphorous Removal</b> |        |
|----------------------|-------|--------|-----------------------|-------------------------|---------|----------------------------|--------|
| <b>Belene Island</b> |       |        |                       |                         |         |                            |        |
| Restored area:       | 1290  | ha     | Removal (kg/y)        | 74,000                  | 310,000 | 7,800                      | 12,000 |
| Capital cost:        | 1.71  | US\$ M | Removal (kg/ha)       | 57.4                    | 240.3   | 6.0                        | 9.3    |
| O&M cost:            | 30000 | US\$/y | C-E ratio (US\$/kg/y) | 5.7                     | 1.4     | 53.8                       | 35.0   |
| <b>K/B Marshes</b>   |       |        |                       |                         |         |                            |        |
| Restored area:       | 1050  | ha     | Removal (kg/y)        | 144,000                 | 503,000 | 15,600                     | 25,400 |
| Capital cost:        | 2.82  | US\$ M | Removal (kg/ha)       | 137.1                   | 479.0   | 14.9                       | 24.2   |
| O&M cost:            | 30000 | US\$/y | C-E ratio (US\$/kg/y) | 4.4                     | 1.3     | 42.5                       | 26.1   |
| <b>Total</b>         |       |        |                       |                         |         |                            |        |
| Restored area:       | 2340  | ha     | Removal (kg/y)        | 218,000                 | 813,000 | 23,400                     | 37,400 |
| Capital cost:        | 4.53  | US\$ M | Removal (kg/ha)       | 93.2                    | 347.4   | 10.0                       | 16.0   |
| O&M cost:            | 60000 | US\$/y | C-E ratio (US\$/kg/y) | 5.0                     | 1.3     | 46.2                       | 28.9   |

**Legend:** O&M=Operation and maintenance; y=year; ha=hectare; C-E=Cost-effectiveness; M=million; N=Nitrogen; P=Phosphorous.

## Annex 5: Financial Summary

### BULGARIA: Wetlands Restoration and Pollution Reduction Project

|                                   | IMPLEMENTATION PERIOD |              |              |              |              |            |
|-----------------------------------|-----------------------|--------------|--------------|--------------|--------------|------------|
|                                   | Year 1                | Year 2       | Year 3       | Year 4       | Year 5       | Year 6     |
| <b>Total Financing Required</b>   |                       |              |              |              |              |            |
| <b>Project Costs</b>              |                       |              |              |              |              |            |
| - Investment costs                | 484                   | 2,891        | 4,076        | 3,476        | 1,452        | 226        |
| - Recurrent costs                 | 28                    | 103          | 139          | 143          | 148          | 114        |
| <b>Total Project Costs</b>        | <u>512</u>            | <u>2,994</u> | <u>4,216</u> | <u>3,619</u> | <u>1,599</u> | <u>340</u> |
| <b>Total Financing</b>            | 512                   | 2,994        | 4,216        | 3,619        | 1,599        | 340        |
| <b>Financing</b>                  |                       |              |              |              |              |            |
| <b>GEF</b>                        | 369                   | 1,654        | 2,552        | 1,820        | 900          | 204        |
| <b>Government of Bulgaria</b>     | 75                    | 667          | 891          | 807          | 331          | 136        |
| <b>Municipalities and Farmers</b> | 31                    | 17           | 29           | 35           | 37           | -          |
| <b>EU PHARE</b>                   | -                     | 555          | 515          | 516          | -            | -          |
| <b>Government of Austria</b>      | 36                    | 93           | 134          | 118          | -            | -          |
| <b>Others (TBI)</b>               | -                     | 7            | 95           | 323          | 332          | -          |
| <b>Total Project Financing</b>    | <u>512</u>            | <u>2,994</u> | <u>4,216</u> | <u>3,619</u> | <u>1,599</u> | <u>340</u> |

**Notes:**

1. EU PHARE and the Austria Government have expressed their strong interest in contributing to overall project financing, and have made informal commitments for parallel financing support. Other donors are being contacted to fill the financing gap.
2. Calendar year starts on January 1 and ends on December 31

**Annex 6: Procurement and Disbursement Arrangements**  
**BULGARIA: Wetlands Restoration and Pollution Reduction Project**

**Procurement**

1. Procurement of goods and works financed by the Bank will be done in accordance with World Bank Guidelines: Procurement under the IBRD Loans and IDA Credits (issued in January 1995, revised in January and August 1996, September 1997, and January 1999). Consulting services, technical assistance and training financed by the Bank will be procured in accordance with the Guidelines - Selection and Employment of Consultants by World Bank Borrowers, issued in January 1997, revised in September 1997 and January 1999. The Bank's Standard Bidding Documents, Request for Proposals and Forms of Consultants' Contract will be used. A General Procurement Notice (GPN) will be sent for publication in the UN Development Business by mid April 2002.

**Procurement Responsibilities**

2. The Ministry of Environment and Water (MOEW) is the executive agency for this project. Project coordination and management including procurement will be handled by a Project Coordination Unit (PCU), with a unit in Sofia and units at each of the two protected areas administrations. In Sofia, the Project Preparation Unit (PPU) in the Ministry of Environment and Water, which is responsible for preparing this project, would be renamed as the Project Coordination Unit (PCU). The PPU already includes a Project Manager, a Procurement Specialist and a Financial Specialist. This core implementation team has already acquired good experience in project management. Both the project manager and the procurement specialist have become familiar with the Bank procurement guidelines.

3. The PCU will have a central office in Sofia, two local liaison officers, and significant physical presence at the two project sites. The local liaison officers will assist the Persina Nature Park Directorate and the Kalimok/Brushlen Protected Site Administration in coordination associated with project implementation, and in carrying procurement of goods, works and services at the local levels under the oversight of the PCU Procurement Specialist. The local liaison office and the protected areas director would be trained in procurement. Initially, this training will be given by Bank staff and then by the PCU Procurement Specialist on a continuous basis. The procurement capacity of the two park administrations will be assessed at the end of first year implementation, and depending upon the results of the assessment, responsibility for small procurement will be transferred to them. The PCU Project Manager and the Procurement Specialist would both undergo in-depth procurement training in ILO Turin, Italy, as soon as the grant becomes effective.

**Procurement Methods (Table A)**

4. The project includes procurement of civil works, goods, consultant services and training. A detailed procurement plan for these needs has been prepared and included in the Project Implementation Plan (PIP). During project implementation, the procurement plan will be updated every six months. The Project procurement arrangements are shown in Table A below.

***Procurement of Works***

5. Civil works are intended for wetlands restoration, restoration of priority protected areas, construction/rehabilitation of park administration and visitor centers, border demarcation, vegetation and

sedimentation management, and tourism trail and interpretation points. The following procurement methods will be used: (i) International Competitive Bidding (ICB) will be applied to works contracts estimated to cost US\$1,000,000 or more per contract; (ii) National Competitive Bidding (NCB) will be applied for works contracts estimated to cost below US\$1,000,000 per contract; and (iii) Minor Civil Works (MCW) will be applied to works contracts with an estimated cost below US\$50,000 per contract.

6. NCB would be acceptable subject to the following conditions: a point system of evaluation will not be used; domestic preference will not be applied; international bidders will not be excluded from bidding; and the draft NCB bidding documents will be prepared and submitted to the Bank for review and no-objection before any NCB tender is issued. No bids will be rejected at the bid opening. All bids submitted on or before the deadline for submission of bids will be opened and read out at public bid opening; local bidders shall demonstrate availability of obtaining securities and reasonable access to credit; bid evaluation criteria shall not be pre-disclosed to bidders; and technical specifications must be clearly written. These conditions were discussed at negotiations and made part of the Grant Agreement. Although the overall estimated value of restoration works in Belene Island and Kalimok/Brushlen marshes is estimated at about US\$3.2 million, due to restriction access and security reasons in Belene Island, it is advisable to retain two contracts -- one NCB contract for Belene Island and one ICB contract for Kalimok/Brushlen -- instead of combining both into one large ICB.

#### ***Procurement of Goods and Equipment***

7. Office equipment, vehicles, maintenance equipment for restored wetlands, field equipment and supplies for park administrations will be procured under the project. The following procurement methods will be used: (i) International Competitive Bidding (ICB) for goods contracts estimated to cost above US\$100,000 or more per contract; (ii) International Shopping (IS) for goods contracts estimated to cost less than US\$100,000 per contract (IS can be used to procure equipment, material or commodities which are off the shelf -- the award shall be made on the basis of obtaining and comparing quotations from at least three suppliers from two countries); (iii) National Shopping (NS) for goods contracts estimated to cost US\$50,000 or less per contract; and (iv) National Shopping for technical services contracts estimated to cost less than US\$100,000 per contract (based on obtaining minimum three quotations from domestic suppliers).

#### ***Procurement of Consulting Services***

8. Consultants' Services will be selected in accordance with the Bank Guidelines issued in January 1997 and revised in 1997 and 1999, and for this project will include Quality and Cost Based Selection (QCBS), Selection Fixed Budget (SFB), Consultants Qualifications (CQ), Least Cost Selection (LCS), and individual consultants (IC). QCBS and SFB selections over US\$200,000 will be advertised in Development Business and in a national newspaper for expressions of interest, from which a short list will be drawn. For contracts estimated to cost less than US\$200,000, short lists may be based solely on national firms. The contract for auditing will be procured following the LCS method. Contracts estimated at less than US\$100,000 each will be procured following the CQ method. Individual consultants will be selected in accordance with Part V of the Consultants Guidelines. All individual contracts will be advertised. The aggregate amounts for consultants services are shown in the footnotes to Table A.

9. Government-owned research institutes and universities willing to participate in procurement of consultant services financed by the Bank in this project should meet the Bank's eligibility criteria: they should be financially and legally autonomous and operate under commercial law in Bulgaria. When research institutes and universities do not meet one of the above criteria, guidelines specified in Office

Memorandum issued on August 19, 1999 should be followed.

### ***Training and Study Tours***

10. A schedule for training activities will be prepared on an biannual basis as part of the annual work plan process and submitted to the Bank for no-objection.

### ***Competitive Grants***

11. Grants for Biodiversity Conservation Small Grant Program and the Farmer Transition Support Grant Program will be awarded to project beneficiaries on a competitive basis at each of the project sites. For the implementation of these grants, Operational Manuals will be adopted (i.e., an Operational Manual for the Biodiversity Conservation Small Grant Program and an Operation Manual for the Farmer Transition Support Grant Program). These manuals will include the mechanisms for awarding the grants, including establishing grant committees, selection process, eligibility criteria, grant agreements, procedures for application, and monitoring system. These will use the relevant procurement procedures from the "Good Practices in Procurement, Disbursement, and Financial Management for Competitive Grant Programs in ECA Countries (World Bank, 2002)". Initial Draft Operational Manuals have been prepared and will be further advanced prior to project launch with the participation of local stakeholders. Operational Manuals will be submitted for the Bank's approval before implementation.

### ***Contingency Relief Fund***

12. Those farmers impacted indirectly by new flooding regimes will be entitled to relief grants sufficient to offset the impacts of the losses. The mechanisms for awarding relief grants will be specified in an Operational Manual, i.e., the Operational Manual for the Contingency Relief Fund. The Operational Manual will be prepared within the first year of project implementation and will be submitted for the Bank's approval. The relevant procurement procedures of the guidelines referred to in paragraph 11 will also be used in the Operational Manual.

### ***Incremental Operating Costs***

13. The Grant will finance incremental operations costs. These costs will be incurred in accordance to an annual budget that the PCU will prepare and submit to the Bank for its approval before any expenditures are incurred.

### **Bank's Prior Review Thresholds (see Table B)**

14. The Bank's prior review thresholds are as follows: (i) Goods: all ICB, first IS and NS packages; (ii) Works: all ICB, and first NCB and MCW; (iii) all consultant contracts with consulting firms estimated to cost US\$200,000 or more per contract (Full Review); (iv) all contracts with consulting firms estimated to cost between US\$100,000 and US\$200,000 per contract (Partial Review); (v) all consultant contract with individuals estimated to cost US\$25,000 or more per contract; and (vi) contracts less than US\$25,000 with individuals; terms of reference.

### **Post Review**

15. All contracts not subject to the Bank's prior review will be subject to an ex-post review, on a selective basis. One out of five contracts for goods, works, and consulting services will be subject to an

ex-post review. Supervision missions will include a procurement specialist especially in the first year, whose main responsibility will be to conduct ex-post reviews of the procurement process and documentation, and provide his or her findings.

**Procurement methods (Table A)**

**Table A: Project Costs by Procurement Arrangements**  
(US\$ million equivalent)

| Expenditure Category                                     | Procurement Method <sup>1</sup> |                |                    |                | Total Cost      |
|--|---------------------------------|----------------|--------------------|----------------|-----------------|
|  | ICB                             | NCB            | Other <sup>2</sup> | N.B.F.         |                 |
| <b>1. Works</b>  | 2.21<br>(1.85)                  | 1.70<br>(1.41) | 0.59<br>(0.49)     | 0.80<br>(0.00) | 5.30<br>(3.75)  |
| <b>2. Goods</b>  | 0.00<br>(0.00)                  | 0.00<br>(0.00) | 0.58<br>(0.48)     | 0.81<br>(0.00) | 1.39<br>(0.48)  |
| <b>3. Services</b>                                       | 0.00<br>(0.00)                  | 0.00<br>(0.00) | 1.53<br>(1.28)     | 1.96<br>(0.00) | 3.49<br>(1.28)  |
| <b>4. Training and Study Tours</b>                       | 0.00<br>(0.00)                  | 0.00<br>(0.00) | 0.18<br>(0.18)     | 0.00<br>(0.00) | 0.18<br>(0.18)  |
| <b>5. Competitive Grants and Contingency Relief Fund</b> | 0.00<br>(0.00)                  | 0.00<br>(0.00) | 1.92<br>(1.44)     | 0.32<br>(0.00) | 2.24<br>(1.44)  |
| <b>6. Incremental Operating Expenses</b>                 | 0.00<br>(0.00)                  | 0.00<br>(0.00) | 0.68<br>(0.37)     | 0.00<br>(0.00) | 0.68<br>(0.37)  |
| <b>Total</b>   | 2.21<br>(1.85)                  | 1.70<br>(1.41) | 5.48<br>(4.24)     | 3.89<br>(0.00) | 13.28<br>(7.50) |

<sup>1/</sup> Figures in parenthesis are the amounts to be financed by the Bank Grant. All costs include contingencies.

<sup>2/</sup> Includes civil works procured under minor civil works (total aggregate US\$591,000); goods to be procured through international shopping (total aggregate US\$448,000) and national shopping (total aggregate US\$130,000); consulting services as per arrangements indicated in Table A1; services of contracted staff of the project coordination unit and its technical advisors to be procured under individual consultants; training and study tours; competitive grants and contingency relief fund; and incremental operating costs related to: (i) managing the project, and (ii) carrying out monitoring activities, managing restored wetlands and protected areas.

**Table A1: Consultant Selection Arrangements (optional)**  
(US\$ million equivalent)

| Consultant Services Expenditure Category | Selection Method |                |                |                |                |                |                | Total Cost <sup>1</sup> |
|--|------------------|----------------|----------------|----------------|----------------|----------------|----------------|-------------------------|
|  | QCBS             | QBS            | SFB            | LCS            | CQ             | Other          | N.B.F.         |                         |
| <b>A. Firms</b>                          | 0.53<br>(0.44)   | 0.00<br>(0.00) | 0.20<br>(0.17) | 0.09<br>(0.07) | 0.27<br>(0.23) | 0.00<br>(0.00) | 1.96<br>(0.00) | 3.05<br>(0.91)          |
| <b>B. Individuals</b>                    | 0.00<br>(0.00)   | 0.00<br>(0.00) | 0.00<br>(0.00) | 0.00<br>(0.00) | 0.00<br>(0.00) | 0.44<br>(0.37) | 0.00<br>(0.00) | 0.44<br>(0.37)          |
| <b>Total</b>                             | 0.53<br>(0.44)   | 0.00<br>(0.00) | 0.20<br>(0.17) | 0.09<br>(0.07) | 0.27<br>(0.23) | 0.44<br>(0.37) | 1.96<br>(0.00) | 3.49<br>(1.28)          |

1\ Including contingencies

Note: QCBS = Quality- and Cost-Based Selection

QBS = Quality-based Selection

SFB = Selection under a Fixed Budget

LCS = Least-Cost Selection

CQ = Selection Based on Consultants' Qualifications

Other = Selection of individual consultants (per Section V of Consultants Guidelines), Commercial Practices, etc.

N.B.F. = Not Bank-financed

Figures in parenthesis are the amounts to be financed by the Bank Grant.

Prior review thresholds (Table B)

**Table B: Thresholds for Procurement Methods and Prior Review** <sup>1</sup>

| <b>Expenditure Category</b>                              | <b>Contract Value Threshold (US\$ millions)</b> | <b>Procurement Method</b>     | <b>Contracts Subject to Prior Review (US\$ millions)</b> |
|--|---|-------------------------------|--|
| <b>1. Works</b>  | > or equal to 1.00<br><1.00<br><0.050           | ICB<br>NCB<br>MCW             | 3.24   |
| <b>2. Goods</b>  | > or equal to 0.100<br>< 0.100<br>< 0.050       | ICB<br>IS<br>NS               | 0.29   |
| <b>3. Services</b>                                       | > or equal to 0.200<br>< 0.200<br>< 0.100       | QCBS/SFB<br>LCS<br>CQ<br>Ind. | 1.18   |
| <b>4. Competitive Grants and Contingency Relief Fund</b> | N/A   | Based on operational manuals  | N/A  |
| <b>5. Training and Study Tours</b>                       | N/A   | Based on semi-annual budgets  | N/A  |
| <b>6. Incremental Operating Expenses</b>                 | N/A   | Based on annual budgets       | N/A  |

**Total value of contracts subject to prior review:** US\$4.71 million

**Overall Procurement Risk Assessment**

**High**

**Frequency of procurement supervision missions proposed:** One every 6 months (includes special procurement supervision for post-review/audits)

16. Procurement implementation progress will be monitored through progress reports and supervision missions. At least one supervision mission per year will include a procurement specialist, who will be responsible for updating the procurement plan, and conducting ex-post reviews. His/her findings will be included in the supervision reports for monitoring their implementation. A project officer in the Sofia Country Office will be responsible for supervising project implementation and provide procurement support. A procurement capacity assessment of the Project Coordinating Unit (former Project Preparation Unit) was carried out and it was decided to classify the PCU within the high risk zone. Because of high-risk category, intensive procurement supervision will be essential during the first three supervision missions of the project. An action plan to strengthen procurement capacity of the PCU has been identified and it includes specialized procurement training at ILO, Turin, Italy, for the project manager and the procurement specialist.

17. It is expected that by the time of GEF grant effectiveness, a three-day procurement launch workshop will be held for the staff involved in implementing the project, including the staff of the PCU,

Protected Areas Administration, and local municipalities. During this procurement launch workshop, procurement arrangements will be discussed in detail, the PCU staff will be trained in the procurement methods applicable to the project, and they will also be assisted in initiating the preparation of draft bidding documents for each package on the procurement plan for the procurement to be conducted during the first two years of the project. A computerized procurement monitoring system will be in place within six months of Grant effectiveness. For this purpose, the PCU will use the procurement tracking module of the existing Financial Management System. This would enable the procurement specialist to keep track of procurement activities as well as to generate the procurement progress reports. Prior to Board approval, the Bank staff will prepare a procurement book containing all procurement related documents, including Standard Bidding Documents, both in hard and soft copies, and send it to the PCU. The contents of the procurement book will be discussed during the project launch workshop.

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<sup>1</sup>Thresholds generally differ by country and project. Consult OD 11.04 "Review of Procurement Documentation" and contact the Regional Procurement Adviser for guidance.

## Disbursement

### **Allocation of grant proceeds (Table C)**

18. Disbursement will follow normal Bank procedures and will be made against the categories of expenditures indicated in Table C. The proceeds of the of the GEF grant are expected to be disbursed over a period of five years. The expected effectiveness date is September 16, 2002, the expected completion date is September 15, 2007, and the expected closing date is March 15, 2008.

**Table C: Allocation of Grant Proceeds**

| <b>Expenditure Category</b>                                | <b>Amount in US\$million</b> | <b>Financing Percentage</b>  |
|--|------------------------------|--|
| Works  | 3.44                         | 100% foreign<br>80% local  |
| Goods  | 0.46                         | 100% of foreign expenditures<br>100% of local expenditures (ex-factory costs) and 80% of local expenditures for other items procured locally |
| Consultant Services  | 1.20                         | 100%   |
| Training and Study Tours                                   | 0.17                         | 100%   |
| Grants under Biodiversity Conservation Small Grant Program | 0.20                         | 100%   |
| Grants under Farmer Transition Support Grant Program       | 0.86                         | 100%   |
| Contingency Relief Fund                                    | 0.38                         | 100%   |
| Incremental Operation and Maintenance Cost (1)             | 0.35                         | 90% until Dec 31 2003, 85% until Dec 31 2004, 75% until Dec 31 2005, 50% until Dec 31 2006, 25% thereafter                                   |
| Unallocated  | 0.44                         |  |
| <b>Total Project Costs</b>                                 | <b>7.50</b>                  |  |
| <b>Total</b>   | <b>7.50</b>                  |  |

**Note:** (1) It includes the incremental expenses incurred by the PCU and various institutions on account of implementation of the project.

### **Use of statements of expenditures (SOEs):**

19. Project funds will initially be disbursed on the basis of the submission of Statements of Expenditures (SOEs). A move to PMR-based disbursement will be made at the mutual agreement of the Government and the Bank, and will be considered once the PCU is familiar with the project's monitoring aspects and is considered able to produce timely and reliable project management information.

20. Withdrawal applications would be fully documented. The reimbursement of expenditures made from the Special Account may be made on the basis of certified Statements of Expenditures (SOEs), for the following items: (i) contracts for goods valued at less than US\$100,000 equivalent each; (ii) contracts for works less than US\$100,000 equivalent each; and (iii) contracts for consulting firms costing less than US\$100,000 equivalent each, and contracts for individual consultants amounting less than US\$25,000 equivalent each; (iv) all contracts for training; (v) grant contracts below a threshold to be set in the respective Operational Manuals; and (vi) all incremental operating costs. Expenditures above these

thresholds will be fully documented.

**Special account:**

21. To facilitate timely project implementation, the PCU will establish, maintain, and operate, under conditions acceptable to the Bank, a Special Account denominated in United States Dollars (USD or US\$) at the Bulgarian National Bank. The maximum authorized allocation of the Special Account (SA) will be limited to US\$0.5 million equivalent. However, during the initial stage of the project, an amount limited to US\$0.3 million equivalent will be deposited in the Special Account. When the amount disbursed reaches SDR\$1.0 million, the amount deposited in the SA will be increased to the full amount of US\$0.50 million. Replenishment applications should be submitted at least every two months and must include reconciled bank statements as well as other appropriate supporting documents. The minimum size of applications for direct payments and issuance of Special Commitments (SC) should be 20% of the authorized allocation.

**Financial Management:**

***Country Financial Management Issues***

22. A Country Financial Accountability Assessment for Bulgaria will be carried out by the Bank after 2002. When finalized, the document will detail issues on the financial management risks for the country and the implications for the World Bank operations. Key country financial management issues are: (i) there have been some reforms in the public sector financial management of Bulgaria; (ii) the accounting standards have been modified to adhere closely to International Accounting Standards (IAS); (iii) the macroeconomic situation has generally improved after the financial crisis of 1996 – 1997 (i.e., GDP growth was recorded yearly since 1998 and inflation has been brought down to single digits figures), but unemployment and total foreign debt as a % of GDP remain at very high levels; (iv) the Supreme Audit Institution (SAI) in Bulgaria is undergoing a reform process that will improve its capacity to carry out an independent external audit on the Government accounts.

***Project Specific Risks***

23. One substantial risk is that the Project is exposed to delays in payments to suppliers: (i) due to the signatures required on both GEF Grant funds and Government contribution; and (ii) inadequate counterpart funds in the Government project account. The signing mechanism proposed for the operation of the above accounts is acceptable, and since the PCU will have physical presence in Sofia and within the premises of the MoEW, all the signatures required will be obtained in a timely manner. The experience during the preparatory phase has demonstrated that the signing mechanism does not pose significant delay risks. On the issue of Government contribution, commitment has been obtained during negotiations that the Government will provide the needed counterparts funds in a timely manner.

24. The Project will operate under the following procedures: (i) all payment orders will be signed jointly by the PCU manager and a high level officer (such as the General Secretary or Chief Accountant of the MoEW); (ii) the beneficiaries' representatives will certify the acceptance of the works done, goods delivered and services rendered before the payments are made by the PCU; (iii) segregation of duties amongst PCU staff members; and (iv) project financial statements will be audited by an external auditor, acceptable to the World Bank.

25. Overall, the above Project risks are considered manageable due to the various risk mitigation measures proposed.

### ***Financial Management Assessment***

26. The latest assessment of the financial management arrangements for the Project was undertaken in March 2002. The result of the assessment is that the Project financial management arrangements satisfy the World Bank minimum financial management requirements. A financial management action plan was developed and agreed with the Government to strengthen the financial management arrangements of the Project. A summary of financial management assessment and conclusions is presented below:

| <b>Financial Management Assessment</b> | <b>Rating</b> | <b>Comments</b>   |
|--|---------------|---|
| Implementing Entity                    | Satisfactory  | PPU created over one year ago for the preparatory grant within MoEW, became fully familiar with World Bank regulations and procedures.                |
| Funds Flow                             | Satisfactory  | Simple funds flow in place.   |
| Staffing                               | Satisfactory  | PPU Financial Management Specialist and Accountant.   |
| Accounting Policies and Procedures     | Satisfactory  | Detailed financial manual and internal control policies documented.   |
| Internal Audit                         | N/A           | No reliance placed on internal audit.   |
| External Audit                         | Satisfactory  | The project will be audited annually. Appointment of auditors will be a Grant effectiveness condition. Preparatory Grant was audited (clean opinion). |
| Reporting and Monitoring               | Satisfactory  | Customized reporting capacity.  |
| Information Systems                    | Satisfactory  | Developed software system.  |
| Overall Financial Management Rating    | Satisfactory  |   |

### ***Financial Management System Assessment***

27. *Project Management and Coordination.* The PPU includes all the key staff agreed upon (project manager, financial management specialist, procurement specialist), and draws upon the experience and expertise of the MoEW staff. The Government will maintain a project financial management system (FMS) in a format acceptable to the Bank and in accordance with OP/BP 10.02 and the World Bank Project Financial Management requirements. The PCU will be responsible for the project's overall financial management system. All procurement, financial management and disbursement procedures for the Project will be centralized at the PCU and be in accordance with the relevant Bank guidelines.

28. *Staffing of the Accounting/Finance Function.* The PPU has been operating for over one year in the implementation of the preparatory grant. So far, the overall activity and progress was satisfactory. The PPU financial management specialist handles all financial accounting records, ensures that accounting records are kept up to date within the accounting software and is in charge of the petty cash arrangements. He is also responsible for the planning, budgeting, auditing and reporting aspects, reporting to the Project Manager. The financial management specialist has also established permanent contacts with the accounting department of the MoEW, auditors and the MOF. During the implementation phase, the financial management specialist will be able to work on a part-time basis, and thus will not be able to deal with the day-to-day activities of the project. Therefore, an accountant will be hired to further strengthen

the financial management capacity of the PCU. The accountant will deal with the daily operations, keep the petty cash book, prepare all relevant documentation, and maintain the financial management system. Satisfactory terms of reference have been developed. The accountant will be hired before June 30, 2002.

29. *Accounting and Internal Controls.* The PPU maintains the project accounts in accordance with International Accounting Standards (IAS) and the statutory requirements and will integrate the project accounts within the MoEW accounts, reporting to the accounting department of MoEW and the World Bank. The PPU maintains all documentation related to project expenditures and keeps financial records in accordance with sound accounting practices. The PPU is responsible for keeping the full accounting records of the Project, in charge of all payments, operating the accounting software, handling the Special Account (SA) and requesting payments from the Project Account (PA - local contributions), preparing all bidding documents, reporting both to the Bank and Government, planning, budgeting, disbursement and auditing.

30. All the original project documents, contracts, payment orders, bank statements and all other relevant accounting documents are kept by the PPU. The PPU staff are responsible for: preparing the bidding documents; receiving offers and evaluating them in accordance with the World Bank regulations; submitting the evaluations to the World Bank for no objection; signing contracts in an acceptable format; and supervising the services provided in accordance with the terms of reference. The payment documents are prepared by the PPU and submitted to the MoEW for approval only after the fulfillment of the above steps. No project funds are passed over to any other parties. The PPU is the only entity authorized to prepare payment documentation and request the MoEW make payments to suppliers. The PPU has developed detailed financial statements, reporting formats and methods, internal control procedures, disbursement and flow of funds arrangements, assigned staff responsibilities in order to ensure a complete segregation of duties.

31. *Detailed Accounts will be Kept for each Project Component and its Sub-Components.* The project accounts also reflect: the status of payment against each contract, utilization of the Special Account (SA) and replenishments made by the Bank, utilization of the Government contribution and uses of the funds. During the implementation phase, the PCU will prepare reports showing detailed budgeted and actual expenditures, uses of funds by source, summary of withdrawals and forecasts, statements of progress achieved to-date and the objectives for the forthcoming quarter and semester. The PCU will agree the formats, contents and frequency of the reports to be received from the other entities involved in the Project by June 30, 2002.

32. *Computerized Accounting System.* The existing accounting and reporting software system developed in house by the financial management specialist is currently used for the preparatory grant and will also be used for the main project. The system is also able to respond to the Bulgarian statutory accounting and reporting. The system was designed to fully respond to the specifics of the preparatory grant. Some changes and a certain degree of customization is needed to modify the software to respond to the specifics of the Project. These changes will be performed in-house by the financial management specialist in accordance with the action plan. The system features a customized chart of accounts, detailed financial statements, reporting formats and methods, etc. The system can produce a trial balance, balance sheet, a statement of sources and uses of funds, income and expenditure statement, special and project account statements. Usual journals and ledgers are also produced by the system, such as separate journals for works, goods, consulting and training, and operating costs. The system also features the bank accounts ledger, the accounts receivable and accounts payable ledgers, the general ledger and a fixed assets register.

33. The financial management specialist is the main operator of the software with the PPU Manager

responsible for authorizing all payments. The procurement specialist has limited rights to access the software on procurement related aspects. The software system is able to produce the quarterly Project Management Reports.

34. *Audit arrangements.* The PPU has selected the auditor of the GEF Block B grant, in accordance with the Bank requirements. The auditor (Pricewaterhouse Coopers Bulgaria) has performed the audit work for the period February 1 until December 31, 2001, and has already issued a clean (unqualified) opinion and the management letter recorded some minor issues, which are now being addressed by the PPU. The MoEW has expressed its satisfaction with the performance of the auditor and most likely will appoint the same auditor for CY02.

35. *Conclusion.* It is concluded that the financial management arrangements of the Project satisfy the minimum World Bank financial management requirements because:

- the current PPU has implemented an acceptable computerized accounting and reporting system for the Project;
- the PPU has developed a detailed financial, accounting and internal control manual describing the accounting policies and procedures, internal controls, delegation of responsibilities and authorities, transaction flows, reporting, planning and budgeting;
- the PPU has an experienced financial management specialist acceptable to the Bank;
- the PPU has already contracted an independent external auditor for auditing of project preparatory activities, acceptable to the World Bank. Depending on the performance of the audit, the same firm will be retained for the implementation phase (effectiveness condition in the Grant Agreement).

### ***Flow of Funds***

36. The Grant Agreement will be signed between the World Bank (GEF) and the MoEW. The MoEW, through the PCU, will handle the Grant amounts through the Special Account (SA). The PCU established within the MoEW will be in charge of operating the SA. The SA is to be opened at the Bulgarian National Bank, in accordance with the World Bank requirements. Government contributions will be received in separate project sub-account of the main budgetary current account of MoEW, that will be used specifically for the Bulgarian contribution to the project. These contributions will be received monthly, directly from the MoEW budget. These contributions will be reflected as a separate line in the budget of MoEW. All documentation pertaining to the project (relating to Grant funds, to the local contributions and other donors as applicable) will be kept at the PCU. All payment requests, statements of expenditures, replenishment requests, payment orders will be countersigned by a high level official of the MoEW.

### ***Financial Monitoring Reports***

37. The PCU will maintain accounts of the Project and will ensure appropriate accounting of the funds provided. The Government has expressed its preference to continue preparing the Project Management Reports, which are produced by the existing software system, as the Financial Monitoring Reports (FMRs), and prepare those on a quarterly basis. The FMRs include:

- Project Sources and Uses of Funds
- Uses of Funds by Project Activity
- Project Balance Sheet
- Special Accounts Statements Plus Local Bank Accounts Statements

- Physical Progress Reports
- Procurement Monitoring Reports

### ***Financial Risk Analysis***

38. From the financial management perspective, the proposed project is considered a substantial-risk project.

### ***Costs and Financial Performance***

39. The project's financing plan, which includes the GEF grant, and the project's planned expenditures, have been realistically estimated. In order to facilitate the implementation, the project's cost tables include an appropriate cost matrix, which adequately shows the relationship between the Grant agreement categories and project components.

### ***Auditing Arrangements***

40. For Bank reporting purposes, the annual Project financial statements will be prepared in accordance with the statutory requirements (Bulgarian Accounting Standards), which is a basis of accounting similar to International Accounting Standards (IAS) and audited by independent auditors, acceptable to the Bank, in accordance with the International Standards on Auditing (ISA) and the Bank guidelines on auditing and financial reporting such as the World Bank Financial Accounting Reporting and Auditing Handbook and the World Bank Project Financial Management Manual. The cost of the audits are to be financed from the Grant. Reappointment of the CY2001 auditor will be a condition of effectiveness specified in the Grant Agreement. The Government of Bulgaria does not have any audit reports overdue on the Bank projects.

### ***Grant Agreement Covenants***

41. The following are the covenants relating to financial management matters: (i) not later than November 30 of each year, the Government will furnish World Bank/GEF the annual project implementation work programs for the project for the next year, including procurement and financing plans, and will review these plans with World Bank/GEF before implementing them; (ii) the Government will submit to World Bank/GEF, commencing upon Grant effectiveness, quarterly Financial Monitoring Reports (FMRs), not later than 45 days after the end of each quarter outlining progress made in the implementation of each project component, as well as the problems encountered and how they are being addressed; and (iii) the Government will cause the PCU to have the Project financial statements audited each year by independent auditors acceptable to the World Bank, commencing with the accounts for the period ending December 31, 2002.

### ***Supervision Plan***

42. The development for further strengthening the financial management system will be monitored for procedures and staff development before effectiveness, during the first supervision missions and throughout project implementation. The reports of the progress of the project implementation will be monitored in detail during supervision missions. The FMRs will be reviewed on a regular basis by the World Bank Financial Management Specialist (FMS) and the results or issues followed up during supervision missions. Financial audit reports of the project will be reviewed and issues identified and followed up. The FMS will monitor the agreed action plan to ensure appropriate actions have been implemented by the PCU.

**Annex 7: Project Processing Schedule**  
**BULGARIA: Wetlands Restoration and Pollution Reduction Project**

| <b>Project Schedule</b>                           | <b>Planned</b> | <b>Actual</b> |
|---|----------------|---------------|
| <b>Time taken to prepare the project (months)</b> | 24             |               |
| <b>First Bank mission (identification)</b>        | 03/15/2000     | 03/15/2000    |
| <b>Appraisal mission departure</b>                | 02/28/2002     | 02/28/2002    |
| <b>Negotiations</b>                               | 03/25/2002     | 04/08/2002    |
| <b>Planned Date of Effectiveness</b>              | 06/13/2002     | 09/15/2002    |

**Prepared by:**

The Project Preparation Team within the MoEW conformed by: Ms. Marietta Stoimenova (Project Manager, Consultant); Ms. Rayka Hauser (Technical Advisor, Consultant); Ms. Elizaveta Matveeva (Environmental Expert, Consultant); Mr. Kiril Iliev (Financial/Accounting Specialist, Consultant); Ms. Violetta Ivanova (Procurement Specialist, Consultant); Mr. Nikolay Kouyumdzhiev, Head, Water Department; Mr. Michail Michailov, Chief Expert Protected Areas, National Nature Protection Service; Mr. Svetoslav Apostolov, Junior Specialist, National Nature Protection Service; and Ms. Milena Rouseva, Junior Specialist, Water Department.

Valuable technical assistance was also provided by: Mr. Andreas Wurzer, WWF; Ms. Snejana Kostadinova, Social Scientist; Mr. Kurt Lonsway, Water Resources Specialist; and Mr. Jim Orr, Wetlands Specialist.

STAP Reviewer was Mr. Richard Kenchington.

**Preparation assistance:**

GEF Project Preparation Grant of US\$350,000;  
Austria Consultant Trust Fund of US\$55,000; and  
Greece Consultant Trust Fund of US\$40,000.

**Bank staff who worked on the project included:**

| <b>Name</b>           | <b>Speciality</b>                                 |
|-----------------------|---|
| Rita Cesti            | Task Team Leader/Senior Water Resources Economist |
| Kerstin Canby         | Environmental Specialist                          |
| Jocelyn Albert        | Task Team Leader until 11/15/00                   |
| Marea Hatzios         | Senior Environmental Specialist                   |
| Robert Robelus        | Senior Environmental/Social Specialist            |
| Julian Lampietti      | Social Development Specialist                     |
| Marjory-Anne Bromhead | Quality Assurance/Sector Manager                  |
| Naushad A. Khan       | Senior Procurement Specialist                     |
| Bogdan Constantinescu | Senior Financial Management Specialist            |
| Blaga Djourdjn        | Procurement Officer                               |
| Daria Goldstain       | Counsel   |
| Nicholay Chistyakov   | Disbursement Specialist                           |

|                 |                                   |
|-----------------|-----------------------------------|
| Sohaila Wali    | Program Assistant                 |
| Stephen Lintner | Peer Reviewer                     |
| Isabel Braga    | Peer Reviewer                     |
| Stefan Schwager | Reviewer Environmental Safeguards |
| Stan Peabody    | Reviewer Social Safeguards        |

**Annex 8: Documents in the Project File\***  
**BULGARIA: Wetlands Restoration and Pollution Reduction Project**

**A. Project Implementation Plan**

The PIP includes the following annexes:

1. Detailed cost tables.
2. Terms of reference for PCU staff
3. Procurement Capacity Assessment
4. Procurement Plan
5. Implementation Schedule
6. Implementation Arrangements Matrix
7. Draft Environmental Monitoring Plan
8. Environmental Management Plan (EMP)
9. Terms of Reference "Detailed Technical Design of Wetlands Restoration"

**B. Bank Staff Assessments**

Procurement Capacity Assessment \*

Financial Management Assessment \*

**C. Other**

1. Technical Analysis of Wetlands Restoration Options \*
2. Protected Areas Management Planning Studies \*
3. Environment Assessment Report and Summary Report \*
4. Social Assessment \*
5. Sustainable Livelihood Program -- Assessment and Recommended Activities \*
6. Detailed maps (many GIS based)

\*Including electronic files

**Annex 9: Statement of Loans and Credits**  
**BULGARIA: Wetlands Restoration and Pollution Reduction Project**  
02-May-2002

| Project ID | FY   | Purpose                       | Original Amount in US\$ Millions |      | Cancel. | Undisb. | Difference between expected and actual disbursements <sup>a</sup> |           |
|------------|------|-------------------------------|----------------------------------|------|---------|---------|---|-----------|
|            |      |                               | IBRD                             | IDA  |         |         | Orig  | Frm Rev'd |
| P064536    | 2001 | CHILD WELFARE REF             | 8.00                             | 0.00 | 0.00    | 7.29    | 4.85  | 0.00      |
| P055158    | 2001 | EDUC MOD (APL #1)             | 14.39                            | 0.00 | 0.00    | 12.50   | -0.79   | 0.00      |
| P055021    | 2001 | REG AND CADASTRE              | 30.00                            | 0.00 | 0.00    | 29.15   | 0.60  | 0.00      |
| P057927    | 2000 | ENV/PRIV SUPT SAL             | 50.00                            | 0.00 | 0.00    | 17.62   | 10.02   | 0.00      |
| P070086    | 2000 | TRADE & TRANS FACIL IN SE EUR | 7.40                             | 0.00 | 0.00    | 6.39    | 2.99  | 0.00      |
| P055157    | 2000 | HEALTH SECT REF               | 63.30                            | 0.00 | 0.00    | 53.27   | -8.85   | 0.00      |
| P033965    | 1998 | ENV REM PILOT                 | 16.00                            | 0.00 | 0.00    | 2.36    | 2.36  | -0.13     |
| P008323    | 1997 | SOC INS ADM                   | 24.30                            | 0.00 | 0.00    | 1.10    | 3.95  | 0.00      |
| P008315    | 1996 | RAILWAY REHAB                 | 95.00                            | 0.00 | 0.00    | 10.12   | 15.12   | 0.00      |
| P008319    | 1994 | WATER COMPANIES REST          | 57.00                            | 0.00 | 41.00   | 7.22    | 55.70   | 14.70     |
| Total:     |      |                               | 365.39                           | 0.00 | 41.00   | 147.02  | 85.96   | 14.57     |

BULGARIA  
STATEMENT OF IFC's  
Held and Disbursed Portfolio  
Jan - 2002  
In Millions US Dollars

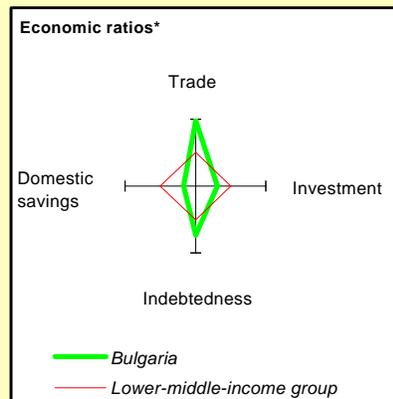
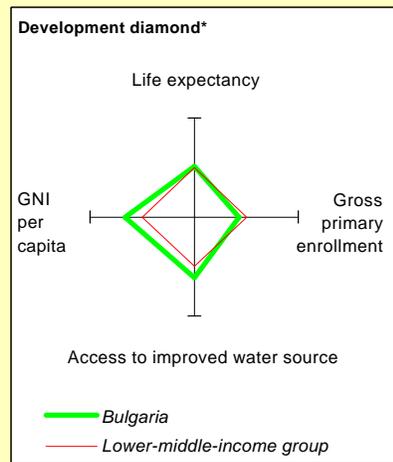
| FY Approval | Company                 | Committed    |              |             |              | Disbursed    |              |             |              |
|-------------|-------------------------|--------------|--------------|-------------|--------------|--------------|--------------|-------------|--------------|
|             |                         | IFC          |              |             |              | IFC          |              |             |              |
|             |                         | Loan         | Equity       | Quasi       | Partic       | Loan         | Equity       | Quasi       | Partic       |
| 1999        | BAC Bank                | 0.00         | 0.00         | 5.00        | 0.00         | 0.00         | 0.00         | 5.00        | 0.00         |
| 2001        | Bulbank                 | 0.00         | 17.47        | 0.00        | 0.00         | 0.00         | 17.47        | 0.00        | 0.00         |
| 1999        | Celhart                 | 13.90        | 1.50         | 0.00        | 0.00         | 13.90        | 1.50         | 0.00        | 0.00         |
| 1998        | Devnya Cement           | 23.81        | 0.00         | 0.00        | 0.00         | 23.81        | 0.00         | 0.00        | 0.00         |
| 2001        | Doverie                 | 2.64         | 0.00         | 1.54        | 0.00         | 0.88         | 0.00         | 0.44        | 0.00         |
| 2001        | EPIQ                    | 7.76         | 0.00         | 0.00        | 0.00         | 4.31         | 0.00         | 0.00        | 0.00         |
| 1994        | Euromerchant FND        | 0.00         | 5.00         | 0.00        | 0.00         | 0.00         | 5.00         | 0.00        | 0.00         |
| 2000        | Florina                 | 3.62         | 0.00         | 0.00        | 0.00         | 2.97         | 0.00         | 0.00        | 0.00         |
| 1996        | Interlease Inc.         | 2.07         | 0.30         | 0.00        | 0.00         | 0.57         | 0.30         | 0.00        | 0.00         |
| 2000/01     | Kronospan Group         | 6.03         | 0.00         | 0.00        | 2.59         | 6.03         | 0.00         | 0.00        | 2.59         |
| 2001        | ProCredit Bank          | 0.00         | 1.05         | 0.00        | 0.00         | 0.00         | 1.05         | 0.00        | 0.00         |
| 1997        | Sofia Hilton            | 10.80        | 0.00         | 2.00        | 9.20         | 10.80        | 0.00         | 2.00        | 9.20         |
| 2001        | Sofia Med               | 11.63        | 0.00         | 0.00        | 0.00         | 0.00         | 0.00         | 0.00        | 0.00         |
|             | <b>Total Portfolio:</b> | <b>82.26</b> | <b>25.32</b> | <b>8.54</b> | <b>11.79</b> | <b>63.27</b> | <b>25.32</b> | <b>7.44</b> | <b>11.79</b> |

| FY Approval | Company                          | Approvals Pending Commitment |             |              |             |
|-------------|----------------------------------|------------------------------|-------------|--------------|-------------|
|             |                                  | Loan                         | Equity      | Quasi        | Partic      |
| 1999        | BPBank                           | 10.00                        | 0.00        | 12.40        | 0.00        |
| 2000        | Podem                            | 3.10                         | 2.00        | 0.00         | 0.00        |
|             | <b>Total Pending Commitment:</b> | <b>13.10</b>                 | <b>2.00</b> | <b>12.40</b> | <b>0.00</b> |

## Annex 10: Country at a Glance

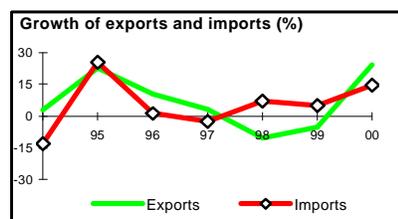
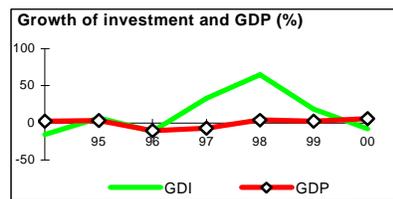
### BULGARIA: Wetlands Restoration and Pollution Reduction Project

| POVERTY and SOCIAL   | Bulgaria       | Europe & Central Asia | Lower-middle-income |             |                |
|--|----------------|-----------------------|---------------------|-------------|----------------|
| <b>2000</b>  |                |                       |                     |             |                |
| Population, mid-year (millions)                              | 8.2            | 475                   | 2,046               |             |                |
| GNI per capita (Atlas method, US\$)                          | 1,520          | 2,010                 | 1,140               |             |                |
| GNI (Atlas method, US\$ billions)                            | 12.4           | 956                   | 2,327               |             |                |
| <b>Average annual growth, 1994-00</b>                        |                |                       |                     |             |                |
| Population (%)   | -0.5           | 0.1                   | 1.0                 |             |                |
| Labor force (%)  | -0.5           | 0.6                   | 1.3                 |             |                |
| <b>Most recent estimate (latest year available, 1994-00)</b> |                |                       |                     |             |                |
| Poverty (% of population below national poverty line)        | ..             | ..                    | ..                  |             |                |
| Urban population (% of total population)                     | 70             | 67                    | 42                  |             |                |
| Life expectancy at birth (years)                             | 71             | 69                    | 69                  |             |                |
| Infant mortality (per 1,000 live births)                     | 15             | 21                    | 32                  |             |                |
| Child malnutrition (% of children under 5)                   | ..             | ..                    | 11                  |             |                |
| Access to an improved water source (% of population)         | 98             | 90                    | 80                  |             |                |
| Illiteracy (% of population age 15+)                         | 2              | 3                     | 15                  |             |                |
| Gross primary enrollment (% of school-age population)        | 99             | 100                   | 114                 |             |                |
| Male   | 100            | 101                   | 116                 |             |                |
| Female   | 98             | 99                    | 114                 |             |                |
| <b>KEY ECONOMIC RATIOS and LONG-TERM TRENDS</b>              |                |                       |                     |             |                |
|  | <b>1980</b>    | <b>1990</b>           | <b>1999</b>         | <b>2000</b> |                |
| GDP (US\$ billions)  | 20.0           | 20.7                  | 12.4                | 12.0        |                |
| Gross domestic investment/GDP                                | 34.0           | 25.6                  | 19.0                | 16.6        |                |
| Exports of goods and services/GDP                            | 35.7           | 33.1                  | 44.1                | 58.5        |                |
| Gross domestic savings/GDP                                   | 39.0           | 22.0                  | 11.3                | 11.0        |                |
| Gross national savings/GDP                                   | ..             | ..                    | 12.2                | 10.7        |                |
| Current account balance/GDP                                  | 4.8            | -5.9                  | -5.3                | -5.9        |                |
| Interest payments/GDP  | ..             | 2.2                   | 2.7                 | 3.7         |                |
| Total debt/GDP   | ..             | 52.4                  | 79.6                | 86.5        |                |
| Total debt service/exports                                   | ..             | 15.1                  | 19.1                | 13.5        |                |
| Present value of debt/GDP                                    | ..             | ..                    | 76.7                | ..          |                |
| Present value of debt/exports                                | ..             | ..                    | 156.9               | ..          |                |
|  | <b>1980-90</b> | <b>1990-00</b>        | <b>1999</b>         | <b>2000</b> | <b>2000-04</b> |
| <i>(average annual growth)</i>                               |                |                       |                     |             |                |
| GDP  | 3.4            | -2.1                  | 2.4                 | 5.8         | 4.6            |
| GDP per capita   | 3.4            | -1.5                  | 3.0                 | 6.3         | 5.3            |
| Exports of goods and services                                | -3.5           | 2.2                   | -5.2                | 24.2        | 1.6            |



#### STRUCTURE of the ECONOMY

|                                | 1980    | 1990    | 1999 | 2000  |
|--------------------------------|---------|---------|------|-------|
| <i>(% of GDP)</i>              |         |         |      |       |
| Agriculture                    | 14.4    | 17.7    | 15.1 | 12.8  |
| Industry                       | 53.8    | 51.3    | 23.4 | 24.6  |
| Manufacturing                  | ..      | ..      | 14.5 | 15.4  |
| Services                       | 31.8    | 31.0    | 61.5 | 62.6  |
| Private consumption            | 55.3    | 59.8    | 72.8 | 71.4  |
| General government consumption | 5.6     | 18.2    | 15.9 | 17.7  |
| Imports of goods and services  | 30.7    | 36.7    | 51.9 | 64.1  |
|                                | 1980-90 | 1990-00 | 1999 | 2000  |
| <i>(average annual growth)</i> |         |         |      |       |
| Agriculture                    | -2.1    | 0.4     | 0.6  | -10.1 |
| Industry                       | 5.2     | -3.7    | -4.4 | 15.3  |
| Manufacturing                  | ..      | ..      | ..   | ..    |
| Services                       | 4.5     | -1.3    | 11.8 | 5.6   |
| Private consumption            | 2.5     | -5.2    | -4.9 | 11.7  |
| General government consumption | 9.1     | -9.4    | 2.0  | 9.8   |
| Gross domestic investment      | 2.4     | 3.3     | 18.7 | -7.7  |
| Imports of goods and services  | -3.3    | 0.5     | 5.1  | 14.6  |

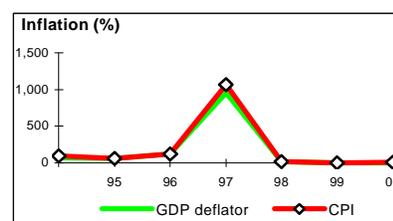


Note: 2000 data are preliminary estimates.

\* The diamonds show four key indicators in the country (in bold) compared with its income-group average. If data are missing, the diamond will be incomplete.

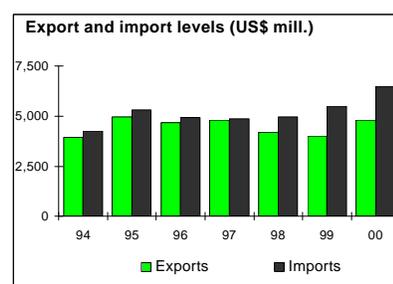
## PRICES and GOVERNMENT FINANCE

|                                     | 1980 | 1990 | 1999 | 2000 |
|-------------------------------------|------|------|------|------|
| <b>Domestic prices</b>              |      |      |      |      |
| (% change)                          |      |      |      |      |
| Consumer prices                     | ..   | 64.0 | 2.6  | 10.3 |
| Implicit GDP deflator               | ..   | 26.2 | 3.1  | 5.6  |
| <b>Government finance</b>           |      |      |      |      |
| (% of GDP, includes current grants) |      |      |      |      |
| Current revenue                     | ..   | 56.9 | 41.2 | 42.1 |
| Current budget balance              | ..   | -3.2 | 5.0  | 3.5  |
| Overall surplus/deficit             | ..   | -7.7 | 1.5  | 0.4  |



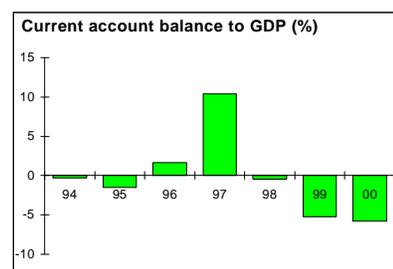
## TRADE

|                               | 1980 | 1990  | 1999  | 2000  |
|-------------------------------|------|-------|-------|-------|
| (US\$ millions)               |      |       |       |       |
| Total exports (fob)           | ..   | 3,743 | 4,006 | 4,812 |
| Consumer goods                | ..   | 1,380 | 1,343 | 1,437 |
| Capital goods                 | ..   | 890   | 214   | 215   |
| Manufactures                  | ..   | ..    | 660   | 655   |
| Total imports (cif)           | ..   | 4,660 | 5,515 | 6,494 |
| Food                          | ..   | 150   | 165   | 175   |
| Fuel and energy               | ..   | 1,392 | 1,235 | 1,768 |
| Capital goods                 | ..   | 1,706 | 1,492 | 1,590 |
| Export price index (1995=100) | ..   | 54    | 102   | 109   |
| Import price index (1995=100) | ..   | 28    | 101   | 113   |
| Terms of trade (1995=100)     | ..   | 198   | 101   | 97    |



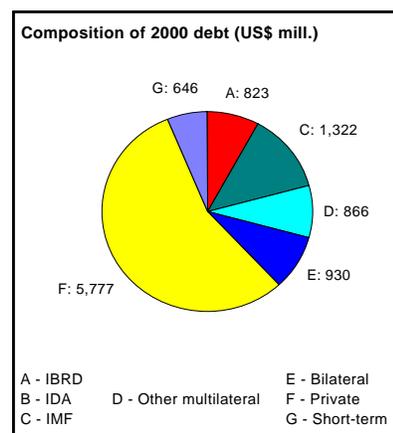
## BALANCE of PAYMENTS

|   | 1980   | 1990   | 1999  | 2000  |
|---|--------|--------|-------|-------|
| (US\$ millions)                         |        |        |       |       |
| Exports of goods and services           | 9,302  | 8,980  | 5,795 | 6,987 |
| Imports of goods and services           | 7,995  | 5,165  | 6,561 | 7,657 |
| Resource balance                        | 1,308  | 3,815  | -767  | -670  |
| Net income                              | -412   | -613   | -185  | -321  |
| Net current transfers                   | 58     | ..     | 300   | 290   |
| Current account balance                 | 953    | -1,231 | -652  | -701  |
| Financing items (net)                   | -718   | 820    | 1,017 | 975   |
| Changes in net reserves                 | -235   | 411    | -365  | -273  |
| <b>Memo:</b>                            |        |        |       |       |
| Reserves including gold (US\$ millions) | ..     | ..     | 3,222 | 3,460 |
| Conversion rate (DEC, local/US\$)       | 0.0013 | 0.0022 | 1.84  | 2.12  |



## EXTERNAL DEBT and RESOURCE FLOWS

|                                      | 1980 | 1990   | 1999  | 2000   |
|--------------------------------------|------|--------|-------|--------|
| (US\$ millions)                      |      |        |       |        |
| Total debt outstanding and disbursed | ..   | 10,865 | 9,872 | 10,364 |
| IBRD                                 | ..   | 0      | 829   | 823    |
| IDA                                  | ..   | 0      | 0     | 0      |
| Total debt service                   | ..   | 1,374  | 1,156 | 989    |
| IBRD                                 | ..   | 0      | 64    | 75     |
| IDA                                  | ..   | 0      | 0     | 0      |
| Composition of net resource flows    |      |        |       |        |
| Official grants                      | ..   | 4      | 80    | 74     |
| Official creditors                   | ..   | 57     | 199   | 12     |
| Private creditors                    | ..   | -71    | 204   | 171    |
| Foreign direct investment            | ..   | ..     | 802   | 1,003  |
| Portfolio equity                     | ..   | 0      | -199  | -179   |
| World Bank program                   |      |        |       |        |
| Commitments                          | ..   | 0      | 176   | 135    |
| Disbursements                        | ..   | 0      | 221   | 71     |
| Principal repayments                 | ..   | 0      | 22    | 27     |
| Net flows                            | ..   | 0      | 199   | 44     |
| Interest payments                    | ..   | 0      | 42    | 49     |
| Net transfers                        | ..   | 0      | 157   | -5     |



**Additional Annex 11**  
**Social Assessment Summary**  
**BULGARIA: Wetlands Restoration and Pollution Reduction Project**

1. This annex summarizes the social assessment of the communities surrounding Kalimok/Brushlen Protected Site and Persina Nature Park. The complete social assessment is available in the background document "Environmental and Social Assessment for Wetland Restoration and Pollution Reduction Project" prepared by the Analytic Creative Group (ACG), December 2001. This annex has six sections. The first section describes the data and methods that were used. The second section provides a synopsis of public attitudes towards the project. The third section summarizes the socioeconomic condition of the population in the area surrounding the project. The fourth section describes expected project impacts. The fifth section describes the expected social impacts -- positive and negative -- as well as mitigating measures. The sixth and seventh sections provide an overview of participation activities and an analysis of the stakeholders.

### **I. Data and Methods**

2. The socioeconomic assessment was undertaken in three stages between July and November 2001. The first stage consisted of primary and secondary data collection. Two focus group discussions with 10 participants each were undertaken at Kalimok/Brushlen. Thirty-five in-depth interviews were undertaken at both sites. This information was used to design a household survey instrument. Secondary data on the socioeconomic condition of the project area was collected from relevant government institutions.

3. In the second stage household surveys were undertaken. In Kalimok/Brushlen Protected Sites (hereafter KBPS) a 1,282 household survey, representative of the population in the protected area, was completed. In Persina Nature Park (hereafter PNP), a 550 household survey, representative of the town of Belene, was completed.

4. The third stage consisted of data analysis and consultations with stakeholders. In particular stakeholders were consulted on project alternatives and then the social assessment team worked with the Project Preparation Unit to include the results of these consultations in the project design. The social assessment has had a significant impact on project design.

### **II. Public Attitudes Towards the Project**

5. Traditionally, nature plays an important role in the Bulgarian value system. This was confirmed by the population's generally positive attitude towards the concept of wetland restoration. There are, however, important differences in the population's perception of the project at the two sites. These are partly related to physical differences in the sites. At KBPS, most of the original marshlands proposed for restoration are state-owned, and have reverted to reed beds. Adjacent areas are privately and municipality-owned and used for agriculture of varying productivity levels -- while the western part of the area is mainly in private or local government ownership, the eastern area is mainly in state ownership. The project will restore wetlands in an area that is currently on short-term lease from local government to local farmers. At PNP, the project will support the wetland restoration on eastern Belene Island, a 15 km long island, the western portion of which is currently under the jurisdiction of the Ministry of Justice which operates a prison on this side, while the eastern portion is a managed Nature Reserve under the jurisdiction of the Ministry of Environment and Water. Since the establishment of the prison on the Belene Island, local communities have not been allowed access to this part of the island due to the security requirements.

6. The total population connected to the KBPS is about 23,140, including the municipalities of Slivo Pole (Ryahovo village 2,250 inhabitants, Golyamo Vranovo village 2,190 inhabitants, Bobovo village 710 inhabitants and Brushlen village 560 inhabitants) and Tutrakan (Tzar Samuil village 1,900 inhabitants, Novo Cherna village 2,250 inhabitants, Staro Selo village 1,480 inhabitants, and Tutrakan town 1,800 inhabitants). Most of the land is used for agricultural purposes, and the population surrounding KBPS is traditional and more dependent on agriculture. Most of the people in the KBPS have lived in their current homes their entire lives. The protected area was not, at the inception of project preparation, perceived as providing new economic opportunities. People were not interested in developing new skills such as tourism and perceived the best way to improve their living standards as simply increasing existing activities. However, as the project concept developed with their feedback, they became more aware of the potential benefits and more supportive of the restoration objective, and more pro-active in identifying further potential socio-economic and environmental benefits from the project, providing important input into project design.

7. The total population connected to the PNP is about 49,970 inhabitants, including the municipalities of Nikopol (Nikopol town with 5,100 inhabitants and Dragash Voyvoda village with 930 inhabitants), Belene (Belene town 9,830 inhabitants) and Svishtov (Svishtov town 31,800 inhabitants and Oresh village 2,310 inhabitants). Most of the land in the area, regardless of ownership, is used for agricultural purposes. Other land uses are forestry and fishery. In contrast, the people of PNP are slightly less traditional. Also the local economy is more active and diversified. They have high expectations of the nature park, hoping it will create new cultural and natural tourism opportunities. At both sites, the project will continue to build support of the population through the public awareness and environmental education subcomponent.

### **III. Socioeconomic Characteristics of the Population**

8. The people living in and around the two protected areas are older, less educated, and more diverse in terms of religion than the rest of the country. Approximately 40% of survey respondents are over 60 years, significantly more than the 27% nationwide. Thirty to 35% do not have more than an 8th grade education, compared to 27% nationwide. In terms of religion, about 38% of PNP residents are Catholics and 12% of KBPS are Muslims. Eighty-four percent of Bulgarians are Eastern Orthodox.

9. Unemployment levels are high and cash incomes are low, particularly in the KBPS. Approximately 32% of the labor force in KBPS is unemployed. The main sources of household income are pensions, wages (including agricultural wage labor), self-production, and social assistance. The median monthly household income is about 190 BGL, which is well below the national median of 259 BGL per household per month (Table 1). This is consistent with respondent's self-assessment of welfare – 45% consider themselves worse off than the rest of the population. By contrast, in PNP 22% of the labor force is unemployed and median income is similar to that of the country as a whole.

**Table 1: Median Household Incomes in Different Occupations (BGL per household per month)**

| <b>Occupation</b> | <b>Kalimok Brushlen</b> | <b>Persina Belene</b> | <b>Nationwide</b> |
|-------------------|-------------------------|-----------------------|-------------------|
| Agriculture       | 175                     | 197                   | 194               |
| Self production   | 150                     | 145                   |                   |
| Wage labor        | 200                     | 250                   |                   |
| Education         | 200                     | 350                   | 248               |
| Military/Police   | 240                     | 325                   | 321               |
| Administration    | 200                     | 250                   | 260               |
| Industry          | 300                     | -                     | 360               |
| Power energy      | -                       | 400                   | 443               |
| Median            | 190                     | 245                   | 259               |

10. Households engage in two main types of agricultural activities – self-production and wage-labor. Self-production takes place on small private farms (generally less than 1 hectare). It includes subsistence production of vegetables and potatoes and some livestock. There are also some small farms that produce high value irrigated crops such as vegetables, fruits, and tobacco. The majority of self-production in KBPS is subsistence, with only limited amounts of high value production. Wage-labor takes place on medium (from 2 to 10 hectares) and large farms (greater than 10 hectares). Larger farms produce grain (mainly corn and wheat) and industrial crops.

11. Household use of natural resources in the protected areas is very limited and almost never on a commercial basis. In KBPS, 21% of the population report gathering some herbs and mushrooms, fishing, and/or hunting, but these activities are all minor and do not contribute substantially to household income. In PNP, only 8% of the population gather herbs and mushrooms from the protected area. Tourism related activities are not very developed. Only 2% to 3% of the respondents in KBPS and 1% in PNP are either engaged or know people who are engaged in tourism.

#### **IV. Expected Project Impacts**

12. There is an overwhelming expectation of positive impacts from the project, with more than half of the survey respondents indicating that it would be beneficial for their region. The benefits people feel will accrue to them include improvement in the water quality of the Danube, conservation and protection of natural resources, improvement in the natural fishery, and general economic revitalization from an increased flow of visitors. There will also be direct benefits from the creation of new jobs associated with the civil works activities, maintenance, guarding and monitoring of the wetlands and protected sites.

13. The project may result in some negative impacts on the population. In particular there may be limitations placed on resource extraction in the protected areas and there may, at KBPS, be indirect impacts on private land from wetland restoration although this is not expected. These impacts and how the project addresses them are discussed in detail below in the section on social risks. At both sites the population raised the issue that restoring wetlands will exacerbate mosquito population. While this is not expected to occur, the environmental management plan has taken this into account and explored options for mitigating this impact. Increasing stagnant water surfaces could significantly increase mosquito breeding grounds and insect populations. Increasing fish, bird and populations of beneficial insects that feed on mosquito larvae and insects would offset this. Also, cycling water through the wetlands would help limit insect breeding.

## **V. Social Impacts (Negative and Positive)**

14. There are several parties at risk from the project in KBPS. These include farmers in the protected area, farmers renting state/municipal land in the restoration area, and private land owners adjacent to the restoration area. Each of these risks and the mitigating measures are described below. These risks do not apply to the restoration areas of Belene Island because it has always been state land where villagers have historically not been allowed access because of security risks associated with the Belene Prison.

15. The protected area management plans are expected to support economic activities compatible with biodiversity conservation objectives and limit those that are not. The plans are not expected to result in any significant restrictions of land use or on gathering of natural products from the wetlands. In order to minimize the negative impacts on the population, the plans will be developed in consultation with the local population.

16. In addition to adopting a participatory approach in the development of the protected management plans, Project Component 2 will support the establishment of a Farmer Transition Support Fund. The fund's purpose is to provide farmers (both land owners and renters) with incentives to make the transition from activities that are not compatible with the project conservation objectives to those that are. The fund will provide farmers with one-time grants for the cost of converting to project compatible activities – and will be developed along the lines of SAPARD Program measures on environmentally friendly agriculture and the sustainable livelihood program assessment conducted during project preparation. A menu of options for these grants has been drafted and will be finalized during the first year of project implementation. In addition, Project Component 2 will support the establishment of an eco-business support development program to provide technical assistance and grant financing for the development of viable long-term business opportunities (green business) compatible with conservation objectives.

17. The wetland restoration activity involves the flooding of 1,050 to 1,290 hectares of state/municipal land. Flooding is expected to last one or two months. The exact extent of indirect impacts caused by the restoration will remain uncertain pending completion of a detailed feasibility study of restoration activities during the first year of implementation. The terms of reference for this study include specific language to minimize the impact of restoration on local incomes and undertake regular consultations with local communities and NGOs. The purpose of these consultations is to help the MoEW and the local populations define and implement a jointly acceptable restoration plan.

18. Several large farmers (including the mayor of Nova Cherna) are leasing (on annual renewal basis) state/municipal land that will be included in the restoration area. While restoration is expected to eliminate crop farming (other than production of reed) within the restored wetland area, outside the wetland area, farming may actually be improved by lengthening the cropping season. The final restoration plan will, by improving drainage conditions, make equivalent amounts of state land adjacent to the restoration area available for lease. The farmers will be fully informed of all restoration activities and their timing through the public information campaign. Thus the risk of negative impacts on these farmers is considered minimal.

19. Another party at risk is private landowners that will be indirectly affected by wetlands restoration. While it has been determined that restoration will not result in the direct loss of private land or displacement of private housing, the MoEW's stated objective is not to have an impact on private land. The MoEW recognizes that there is some uncertainty associated with restoration activities pending the outcome of the feasibility study.

20. Restoration activities may also have an indirect impact on a small amount (*less than 100 ha*) of private land adjacent to the restoration area. For example ground water levels may increase resulting in a longer than normal period of soil saturation in the spring. Farmers may be forced to plant crops late which can result in lower yields due to late harvest or poorer germination. Project component 2 includes a Contingency Relief Fund to mitigate these circumstances. This fund will provide households with the resources necessary to undertake mitigating measures. The institutional mechanism and criteria by which affected parties can access the fund as well as a system for participatory monitoring of adverse impacts and effectiveness of compensating measures will be completed during the first year of project implementation. The terms of reference for this task are included in the Project Implementation Plan.

## VI. Participation

21. The project has been developed in a participatory manner and these activities will serve as a template for implementation (Table 2). Key stakeholders consulted during preparation include villagers and their representatives in local government, Government staff involved in implementing the project, and environmental Non-Government Organizations. Feedback from stakeholders during these participatory activities were incorporated into the project design.

**Table 2: Participation**

| Stakeholder   | Identification and Preparation | Implementation | Operation/ Maintenance and Monitoring |
|---|--------------------------------|----------------|---------------------------------------|
| Beneficiaries, Communities Groups, and Associations | IS/COM                         | IS/COM/COL     | IS/COM/COL                            |
| Central Government                                  | IS/COM                         | IS/COM/COL     | IS/COM/COL                            |
| Regional Government                                 | IS/COM                         | IS/COM/COL     | IS/COM/COL                            |
| Local Government                                    | IS/COM                         | IS/COM/COL     | IS/COM/COL                            |
| Academy of Sciences                                 | IS/COM                         | IS/COM/COL     | IS/COM/COL                            |
| NGOs  | IS/CON                         | IS/COL         | IS/COL                                |
| EU and other Donors                                 | IS/CON                         | IS/CON/COL     | IS/CON/COL                            |

**Legend:** IS=Information sharing; COM=Consultation; COL: Collaboration

22. Villagers will continue to participate in the project throughout implementation, contributing to the development of protected area management plans and identifying impact mitigation measures. Staff of the protected areas administrations will participate in implementation and will receive training on methods to encourage and manage community involvement. Local and national NGOs will be involved in monitoring implementation.

## VII. Stakeholder Analysis

22. There are many stakeholders in the project, particularly in the Government. The stakeholders and their level of interest in the project, ability to influence it, and support for it are summarized in Table 3. The most important stakeholders at both sites are state institutions. They are the primary decisions makers concerned with project design and implementation. Also the public perceives them as guaranteeing the success of the project.

**Table 3: Stakeholder Assessment**

| <b>Stakeholder</b>                   | <b>Interest</b> | <b>Ability to Influence</b> | <b>Support</b> | <b>Total</b> |
|--------------------------------------|-----------------|-----------------------------|----------------|--------------|
| Ministry of Environment              | 5               | 4                           | 5              | 14           |
| Bulgarian Academy of Science         | 3               | 5                           | 5              | 13           |
| Ministry of Agriculture and Forestry | 4               | 5                           | 3              | 12           |
| Ministry of Justice                  | 2               | 5                           | 4              | 11           |
| National Electricity Company         | 3               | 5                           | 3              | 11           |
| Fishermen                            | 5               | 2                           | 4              | 11           |
| Natural product users                | 5               | 1                           | 3              | 9            |
| Local Government                     | 2               | 4                           | 2              | 8            |
| Private land owners                  | 1               | 5                           | 1              | 7            |
| Agricultural cooperatives            | 1               | 2                           | 3              | 6            |
| Land renters                         | 1               | 1                           | 2              | 4            |
| NGO (Green Balkans)                  | 5               | 2                           | 5              | 12           |
| Teachers                             | 5               | 4                           | 4              | 13           |

**Note:** Stakeholder assessment measured on a scale 1 (low) to 5 (high).

23. Project success will depend on the involvement of local government, private business and teachers. Local government will be partly responsible for implementation. Private business will play a key role in the economic development of the region. Teachers are trusted by the population and can therefore play a key role in disseminating accurate information about the project and raising environmental awareness. This has been taken into account in project design.

**Additional Annex 12**  
**Process Framework for Mitigating Potential Adverse Livelihoods Impacts**  
**BULGARIA: Wetlands Restoration and Pollution Reduction Project**

1. **Project Description.** The development objective of the Wetlands Restoration and Pollution Reduction Project is that local communities and local authorities in the Persina Nature Park and Kalimok/Brushlen Protected Site areas adopt sustainable natural resources management practices. The project will help demonstrate how environmentally-friendly rural development activities can improve livelihoods. The global environmental objective is to demonstrate the potential to replicate actions to reduce transboundary nutrient loads and other agricultural pollution flowing into the Danube River and the Black Sea Basins, while at the same time conserving key ecosystem processes and targeted threatened species in the project areas through: (i) wetlands restoration and protected areas management programs; and (ii) support for stakeholders to adopt environmentally-friendly economic activities in the two project areas. The Project has three main components:

*Component 1: Support for Wetland Restoration.* Restoration of approximately 2,340 hectares (ha) of wetland ecosystems along the Danubian coast (Belene Island and Kalimok / Brushlen marshes) within Persina Nature Park and Kalimok/Brushlen Protected Site respectively, as well as additional sites to be identified during project implementation.

*Component 2: Support for Protected Areas Management.* Support for two protected areas covering 28,000 ha -- Persina Nature Park (PNP) and Kalimok/Brushlen Protected Site (KBPS) will include: (i) development and implementation of protected areas management plans; (ii) monitoring of water quality, ecosystem/habitat and socio-economic parameters; (iii) public awareness and education; (iv) institutional strengthening; and (v) guidelines for a national nutrient reduction program.

*Component 3: Project Coordination, Management and Monitoring.* Operating costs of a Project Coordinating Unit.

2. **Component Description.** Two components are of particular relevance to the Process Framework: Component 1 supporting wetland restoration and Sub-Component 2a for the development and implementation of protected areas management plans. Benefits of the two include: the improved productivity of ecosystems and critical natural habitats in the two protected areas; more efficient agricultural productivity through better agriculture practices; development of small eco-enterprises; progress toward compliance with EU directives and emerging Bulgaria regulations; and increased capacity of existing institutions at the central, regional and municipal level. Local communities will also benefit from improved fisheries along the Danube, and possibly from the development of tourism.

3. *Wetland Restoration Component:* Portions of Belene Island and the Kalimok/Brushlen Marshes have been selected for restoration during the first phase of project implementation on the basis of their potential for nutrient trapping and value as a biodiversity habitat. They are among the 17 former floodplains which provide potentially high environmental services and recommended for restoration in the UNDP/GEF-financed Pollution Reduction Program study of the Danube Commission. Additional sites are expected to be identified and restored during project implementation.

4. *Development and Implementation of Protected Areas Management Plans Sub-Component:* This sub-component supports the preparation and implementation of protected area management plans in PNP and KBPS. The PNP covers about 21,000 hectares (ha) located along the Svishtov – Belene lowlands, and

comprises five areas: Belene Island, other islands and floodplains, the eastern part of the former floodplain mainly under state and municipal ownership, the western part for the former floodplain mainly under private ownership, and the hilly landscape of Nikopol. Most of the land in the area, regardless of ownership, is used for agricultural purposes. Other resource uses include forestry and fishery. The KBPS covers about 6,000 ha and is located 60 kilometers east of Ruse. As in the case of PNP, most of the land is used for agricultural purposes, and the population is mainly employed in the agriculture sector. Up until the 1950's, the marsh complex was a key part of the region's valuable fish resources. In the 1950's, a dyke was constructed between Ruse and Tutrakan for agricultural purposes, which cut off fish from their historical spawning grounds. Fish ponds (encircling 560 ha of state-owned land) were constructed, but they were declared bankrupt and abandoned after the collapse of the state farming system. Most of the original marshlands proposed for restoration are state-owned, and have reverted to reed beds. Much of the adjacent areas outside of the restoration sites are privately and municipality-owned and used for agriculture of varying productivity levels.

5. Activities under the project relevant to the Process Framework include:

Protected Areas Management Planning: Management Plans (MP) for both PNP and KBPS will be developed during a 2-3 year process. The MPs will regulate all activities within the designated areas – including the demarcation of management zones for multiple resources use and economic development. The management planning process is expected to cover a period of two years, with the first year dedicated to fact-finding and the establishment of consensus-building processes which will help guide the identification of zones and management protocols.

Protected Areas Management Activities:

Land management activities: (i) operation and maintenance of the flooding infrastructure – such as the opening/closing of the sluice gates; and (ii) management and maintenance of the wetlands in order to optimize nutrient trapping and biodiversity habitat.

Contingency Relief Fund: While the technical design studies, environmental and social assessments have identified measures to mitigate potential negative indirect impacts from wetland restoration (e.g., raised groundwater levels, changes in well-water quality and road access to private lands), it is recognized that it is important to "plan for the unexpected" in case there may be unexpected indirect effects. The Project's Contingency Relief Fund will provide, if necessary, relief to households that experience a decrease in income, water quality and quality of life as a result of indirect effects of the flooding.

Farmer Transition Support Grant Program: The PNP and KBPS MPs are expected to institute programmatic support for economic activities compatible with conservation objectives and identify ways for local communities to transition out of activities that are not sustainable over the long-term. The purpose of this fund is to help farmers make the transition from non-sustainable activities (many of which are currently illegal) to those that are sustainable, with programs for activities such as livestock waste treatment, agro-forestry, and low-till cropping. Households that experience a decrease in income or welfare as a result of the indirect effects of the flooding will also be eligible to apply for grant resources from this fund.

Eco-Business Development: The project will provide assistance to local communities and individual farmers to: (i) identify existing sources of funds (i.e., EU programs PHARE, SAPARD, Cross-Border Cooperation, USAID, Swiss bilateral program, etc.); (ii) developed

marketable “eco-friendly” business proposals; (iii) access grant funds; and (iv) support implementation of a small number of pilot schemes to promote small-scale environmentally friendly income generating initiatives.

6. **Policy Trigger.** This Process Framework will be implemented in accordance with the World Bank Policy on Involuntary Resettlement. It covers restrictions of access to legally designated zones within PNP and KBPS, and the possibility of negative externalities from floodwaters, which may have adverse impacts on livelihoods of the affected persons or households. Good practice has demonstrated that the objectives of both the Project and the Operational Policy can be better achieved through a participatory process similar to that outlined in this Process Framework and to be followed during the development of the PNP and KBPS management plans.

7. *Wetland Restoration:* The wetland restoration activities have been and will continue to be specifically designed so that no involuntary physical displacement or relocation of people would be necessary. Design parameters include flood elevations that do not encroach on private lands and minimize impacts to groundwater (levels and quality) and crops as well as road access. The wetland restoration activity will only involve the flooding of 2,340 hectares, most of it state/municipal land, lasting one or two months. Within the core restored wetland area, direct planting of crops will no longer be possible, but the production of reed and grazing will be possible. Outside the immediate wetland area, farming may actually be improved by lengthening the cropping season and introducing improved agricultural practices which are also in line with the management plans. The final restoration design will, by improving drainage conditions, make equivalent amounts of state land adjacent to the restoration area available for lease. Existing dykes will be raised or new dykes will be built to protect private property. The exact location and area of the restoration will remain uncertain pending completion of a detailed feasibility study of restoration activities during the first year of implementation. The terms of reference for this study include specific language to minimize the impact of restoration on local incomes and undertake regular consultations with local communities and NGOs. The purpose of these consultations is to help the MoEW and the local populations define and implement a jointly acceptable restoration plan.

8. Despite the expectation that negative impacts will be minimal and the specific mitigation measures that have been identified, the Project's Contingency Relief Fund will, if necessary, provide relief to households that experience a decrease in income or quality of life as a result of restoration activities. Permanent assistance for transition to compatible eco-business or agricultural practices can be provided through the farmer transition fund and eco-business development program, the former giving priority support to long term solutions that mitigate the negative indirect impacts of the flooding.

9. The fund is capitalized at a level equal to an estimate of the maximum potential marginal losses resulting from the restoration activities. All households in the KB protected area are eligible to apply for the funds. The public information campaign will disseminate information on the application process continually and then more intensively before application period. All applications will be reviewed by a panel including an environmental expert (from a local NGO), an agricultural economist/engineer expert, and a representative from the Regional Directorate of the Ministry of Agriculture and Forestry. The expert panel will review claims, submitted in a standard format developed and disseminated by the Project Coordinating Unit, once a year. If losses claimed can be attributed to wetlands restoration activities, then the applicant will be awarded grants sufficient to offset the losses. The Project Coordinating Unit will be responsible for administrating this fund according to an Operational Manual.

10. *Protected Areas Management Planning:* In order to enhance the management of natural resources within the two protected areas' landscapes, this component will support the development of protected area

management plans which will focus on key management activities to enhance conservation, such as habitat restoration, increased monitoring and working with local communities to develop and implement regulations and other measures to ensure sustainable use of natural resources. Implementation of MPs will not require involuntary physical displacement or relocation of people. To the extent feasible, the MPs would avoid including new restrictions or strict enforcement of current regulations which could adversely affect livelihoods, beyond those needed to ensure the sustainability of the natural resource.

11. Nevertheless, the MP process may identify the need for new zoning (with increased restrictions on access to natural resources) and increased enforcement of existing laws within the protected area in order to ensure sustainability of the natural resource. For example, there may be various regulations for the types of agricultural practices allowed, introduction of new species, forestry practices as well as hunting and fishing. In some cases, this may adversely impact livelihoods. In other cases, the improved productivity of the resource (e.g. fisheries) or business opportunities (e.g. tourism, eco-business development) may increase opportunities for communities. However, increased restriction of access cannot be ruled out until the MPs are developed during years 1-3 at which time the nature of any proposed restrictions, as well as the type of measures necessary to mitigate adverse impacts of those restrictions, will be determined in consultation with affected groups.

12. **Process Framework.** This Process Framework outlines the criteria and procedures which will be followed as part of the Project, in cases where project-induced involuntary restriction of access to natural resources within the protected areas, or involuntary damage from floodwaters, results in adverse livelihood impacts. It will ensure that eligible, affected persons are assisted in their efforts to restore or improve their livelihoods in a manner which maintains the environmental sustainability of the protected area in question. More specifically, it describes the participatory process by which: (i) specific components of the Project were prepared and will be implemented; (ii) the criteria for identifying who are "affected persons" will be determined; (iii) measures to assist the affected persons in their efforts to improve or restore, in real terms, the pre-displacement levels, their livelihoods (e.g., as appropriate, alternative agricultural or grazing areas, cultivation of alternative crops, or investments in alternative-income generating activities) while maintaining the sustainability of PNP and KBPS will be identified; and (iv) potential conflicts involving affected persons will be resolved. It also provides a description of the arrangements for implementing and monitoring the process.

13. Process Followed During Preparation. A full social assessment was conducted during Project preparation which, while covering all aspects of the Project, focused on potential social and economic impacts due to ecosystem restoration (flooding) and the enforcement of regulations associated with new protected areas management plans. The objective of the Social Assessment was to: (i) assess general socio-economic conditions in the region as well as public attitudes towards the project; (ii) identify potential positive and negative impacts as well as mitigating measures; and (iii) inform ongoing Project design. The project was developed in a participatory manner which serves as a model for implementation. Key stakeholders consulted during preparation include villagers and their representatives in local government, Government staff involved in implementing the project, and environmental Non-Government Organizations. Feedback from stakeholders during these participatory activities was incorporated into project design. A full summary of the process that was followed can be found in Annex 11 " Summary of Social Assessment."

14. The Social Assessment found that, in general, the local population expects positive impacts from the project, with more than half of the survey respondents indicating that it would be beneficial for the region. Benefits expected include the sustainable conservation and protection of natural resources, improvements in the natural fisheries, and a general economic revitalization (possibly from tourism and

eco-business development). Nevertheless, the Project may inadvertently adversely affect the livelihoods of persons living within the protected areas. Many of these potential impacts were anticipated even before the Social Assessment was completed, and TORs for design studies specifically called for these impacts to be minimized.

15. During Project preparation, new components were specifically added to assist local communities adjust not only to any potential restoration impacts and changes in the land management regime of the area, but also to new regulations that are expected to be adopted in the country anywhere due to EU Accession requirements. These include the Farmer Transition Support Grant Program (or Fund), the Contingency Relief Fund and the Eco-Business Support Development Program. The Terms of Reference for the MPs developed during preparation specifically outline the participatory approach to be followed, in which the roles of local communities in the management of natural resources would be strengthened. The role of an Advisory Committee or Consultative Council during the planning process was agreed upon.

16. Process to Be Followed During Implementation. Villagers and local authorities will continue to participate in the project throughout implementation, contributing to the development of protected area management plans and identifying impact mitigation measures. Staff of the protected areas administrations responsible for implementation will receive training on methods to encourage and manage community involvement. Local and national NGOs will be involved in monitoring implementation. Specific processes to be followed during project implementation would consist of the following steps:

- (i) Local communities, authorities and farmers will be fully informed of all restoration activities and their timing through the public information campaign.
- (ii) Through a well-designed participatory process, the management plans aim to gain public acceptance for not only the natural resource management proscriptions identified in the management plan, but also possible restrictions to resource use which may be necessary to ensure the long-term sustainability of these resources. The protected areas management plan will identify not only the appropriate management proscriptions of the protected areas' biological resources, but also processes by which the park administrations can proactively foster local sustainable socio-economic activities.
- (iii) If adverse impacts are unavoidable, the consultations will focus on identifying measures to assist subsistence users to improve or restore their livelihoods while maintaining the sustainability of the two protected areas. Particular emphasis will be placed on the consultation process that allows communities to identify and choose among potential compensating measures.
- (iv) The MPs will address mechanisms by which potential conflicts involving resource users will be resolved. This includes working with community members to define criteria for eligibility for compensating measures and identifying the relevant administrative jurisdictions and line ministries responsible for implementing such mitigating or compensating measures.
- (v) Develop strategies for participatory monitoring of beneficial and adverse impacts within the PAs and effectiveness of compensating measures.

17. The MPs will include a detailed write-up of the results of these consultations. The MPs will include descriptions of the management zones and allowed uses; measures to assist affected person to improve or restore their livelihoods while maintaining the sustainability of natural resources within the protected areas; administrative procedures for how potential conflicts will be resolved; legal procedures for

project management; and monitoring arrangements.

18. Plan of Action: The MPs will serve as the Plan of Action required by the Bank's Operational Policy on Involuntary Resettlement to be developed and submitted to the Bank during implementation and prior to enforcement of existing of new laws and regulations governing access to resources.

19. Monitoring and Evaluation: As part of the monitoring of social development outcomes, the PCU will hire consultants that will carry out annual socio-economic surveys to monitor progress of the project. These surveys will be tailored to measure the impact of the management plans against the initial socio-economic baseline carried out during the preparatory phase.

