

Document of  
**THE WORLD BANK**  
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Report No.11739-CZ

**GLOBAL ENVIRONMENT FACILITY**

MEMORANDUM AND RECOMMENDATION  
OF THE DIRECTOR  
OF THE CENTRAL EUROPE DEPARTMENT  
OF THE  
INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT  
TO THE  
REGIONAL VICE PRESIDENT  
ON A PROPOSED GRANT  
FROM THE GLOBAL ENVIRONMENT TRUST FUND  
IN AN AMOUNT EQUIVALENT TO SDR 1.5 MILLION (USD 2.0 MILLION)  
TO THE  
CZECH REPUBLIC  
FOR A  
BIODIVERSITY PROTECTION PROJECT

June 15, 1994

Agriculture and Water Supply Division  
Country Department II  
Europe and Central Asia Region

## CURRENCY EQUIVALENT

Czech Koruna 28.50 = US\$ 1

## WEIGHTS AND MEASURES

The metric system is used throughout this report.

## GLOSSARY OF ABBREVIATIONS

<b>BSP</b>	-	Biodiversity Support Program (of USAID)
<b>CME</b>	-	Czech Ministry of Environment
<b>ECU</b>	-	European Currency Unit
<b>EEC</b>	-	European Community
<b>ETP</b>	-	Economic Transformation Program
<b>ETNCW</b>	-	European Trust for Natural and Cultural Wealth
<b>EuroMaB</b>	-	European Secretariat of the Man and the Biosphere Program
<b>FACE</b>	-	Forests Absorbing Carbon Dioxide Emissions
<b>GDP</b>	-	Gross Domestic Product
<b>GEF</b>	-	Global Environment Facility
<b>GIS</b>	-	Geographic Information System
<b>IBRD</b>	-	International Bank for Reconstruction and Development
<b>ICB</b>	-	International Competitive Bidding
<b>IMF</b>	-	International Monetary Fund
<b>IUCN</b>	-	The World Conservation Union
<b>LCB</b>	-	Local Competitive Bidding
<b>MaB</b>	-	Man and the Biosphere Program
<b>NGO</b>	-	Non-Government Organization
<b>PMU</b>	-	Project Management Unit
<b>RAMSAR</b>	-	Convention of Wetlands of International Importance
<b>SOE</b>	-	Statement of Expenditure
<b>TA</b>	-	Technical Assistance
<b>UNEP</b>	-	United Nations Environment Program
<b>UNESCO</b>	-	United Nations Educational, Scientific and Cultural Organization
<b>USAID</b>	-	United States Agency for International Development
<b>USFS</b>	-	United States Forest Service
<b>WWF</b>	-	World Wildlife Fund/World Wide Fund for Nature

## FISCAL YEAR

January 1 to December 31

**CZECH REPUBLIC**  
**BIODIVERSITY PROTECTION PROJECT**  
**GRANT AND PROJECT SUMMARY**

**Grantee:** Global Environmental Trust  
**Beneficiary:** Czech Republic  
**Total Project Cost:** US\$2.75 million  
**Terms:** Grant from Global Environmental Trust  
**Onlending:** Not applicable  
**Financing Plan:**

Source	Local	Foreign	Total
	(US\$ Million)		
GEF Grant	0.000	2.000	2.000
USDA Forest Service <sup>1</sup>	-	0.050	0.050
Austrian Eco-Fund	0.000	0.500	0.500
Government	0.200	0.000	0.200
<b>TOTAL</b>	<b>0.200</b>	<b>2.550</b>	<b>2.750</b>

1/ Will assist in US based professional development and training.

**Economic Rate of Return:** Not calculated, though substantial economic and environmental benefits.

**Staff Technical Report:** Report No. 11739-CZ dated June 15, 1994

**MAPS:**

1. Global Environment Facility: Biodiversity Project Areas	IBRD 24595R
2. GEF Biodiversity Project: Šumava	IBRD 23940R
3. GEF Biodiversity Projects: Pálava/Morava	IBRD 23939R
4. GEF Biodiversity Project: Krkonoše	IBRD 23941R

**CZECH REPUBLIC  
BIODIVERSITY PROTECTION PROJECT**

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*Background*

1. From the internationally recognized National Park and Protected Nature Reserves in the Czech Republic, three priority zones of threatened biodiversity were selected for GEF Project financial support.
2. The Palava zone was selected for its unique floodplain forest remnants which also include internationally significant Ramsar designated wetlands of the Morava and Dyje rivers abutting Austria and Slovakia. These Palava wetlands include island limestone dependent endemic plants. Important segments of this Palava/Morava wetland were under strict border control due to its transboundary position with Austria from 1948 to 1990. With the removal of this military restriction, these border floodplains are under increasing visitor and agriculture pressure.
3. The Krkonose zone was selected for its stressed alpine meadows and forests which are impacted by transboundary air pollution as well as significant overuse by un-sustainable concentrated recreation. The result is exceeding the carrying capacity of this sensitive alpine environment.
4. In contrast to the overused Krkonose zone, the Sumava mountain forests, which abut the German Barvarian Forests, are not yet overused. However, as this former military border forest in Sumava, formerly tightly restricted for military purposes, is opened for recreational use, a window of opportunity is available with GEF project support for introducing long term protective management systems.
5. These endangered zones areas are theoretically protected in the form of national parks and reserves, but they are now being degraded through pollution and overuse by visitor demands. Although the threat from air pollution is expected to diminish with economic reconstruction, visitor pressures are likely to continue to grow substantially. The privatization of land will increase development pressures on all natural areas, particularly from tourism, agriculture and forestry and the opening of borders is likely to attract substantial numbers of external visitors.

*Rationale for GEF Involvement*

6. The GEF project has been accorded high priority by Government. However, funds are not available from government sources to carry out the work proposed here and the government does not want to borrow external resources for it at market rates of interest.
7. The proposed project areas of the network in the Czech Republic are rich in species and comprise a variety of important ecosystems. All three of the existing or proposed conservation areas are transboundary, in that they share borders with neighboring countries, therefore the project would explore cooperative relationships with park administrations in Bavaria, Poland, Austria, Slovakia and Hungary to develop complementary planning and management approaches. The forested and alpine environments incorporated in the network are of international importance. The proposed areas contain a large number of plant species, of which a great number are endemic, rare or endangered -- including the freshwater pearl mussel in the Sumava region. There are opportunities for significant wildlife management initiatives. Some of the habitats are suitable for the wolf, lynx, capercaillie and eagle owl. Migratory birds link the region to both Africa and the Mediterranean. Important wild species and historical varieties of commercial fruit are maintained in the areas. As importantly, these borders have only just been opened and provide a unique window of opportunity to conserve biodiversity which has been lost from many of the ecosystems in neighboring countries.

8. Three distinct innovations are associated with this project. The first innovation is the development of regional conservation approaches which will establish systematic co-operation with the resource-using publics around the strictly protected areas. The second is the planning and development of recurrent funding mechanisms such as beneficiary taxes, entrance, visitor, concession and related user fees. The third is to use economic measures to maintain use at a level below the carrying capacity of the resource so that the selected individual areas are maintained now and in the future.

9. The Czech Republic has been developing a broad and comprehensive approach to the conservation of natural resources as part of the former Czechoslovakia, and most recently as a country in its own right. This is demonstrated by its current efforts to establish new legislation, international agreements, policies and practices to deal with the serious environmental problems in the region. It is also shown by its active cooperation with border countries to establish international biosphere reserves and functional networks of protected areas.

#### *GEF Project Objectives*

10. The objective of this project is to protect and strengthen forest and related ecosystem biodiversity in the Czech Republic by:

- a. Protecting three representative ecosystems-zones containing alpine meadows (Krkonose), lowland forests and wetlands (Palava) and mountain forests (Sumava);
- b. Supporting the activity of three transnational biodiversity protection networks: The Sumava National Park (Czech Republic, Austria and Germany), the Krkonose Reserves (Poland and Czech Republic); and the Morava Floodplain Forests and Wetlands (Slovak and Czech Republics and Austria); and
- c. Developing systems of financially sustainable biodiversity protection in the Czech Republic through the introduction of user fees, related charges for visitors and concessions to manage the areas within their determined "carrying capacities."

#### *Project Description*

11. To implement these objectives, the project will involve the following activities:

- a. A **Biodiversity Protection Program** would initiate a range of activities including the development of management techniques for ecosystems (forests, wetlands and alpine meadows), the development of community support for the protected areas and particularly for the sustainable management of contiguous forest systems adjacent to the protected areas, specific *ex-situ*<sup>1</sup> conservation measures where ecosystem protection and restoration are unlikely to be successful, and biodiversity research and management;
- b. A **Conservation Program** would develop revenue generation mechanisms for the protected areas, foster interactions with local communities and land management and uses in the adjacent forest systems; and would institute demonstration activities to be used as models both nationally and internationally (particularly in the ecosystems in the selected transborder regions); and
- c. An **Institutional Infrastructure Improvement Program** would support the project management coordination effort in the Ministry and in the three selected Project zones, professional

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<sup>1/</sup> *In-situ* conservation keeps components of biodiversity within their original habitat or natural environment as a part of their evolutionary dynamic ecosystem, whereas *ex-situ* conservation keeps them alive outside of their original habitat or environment (e.g. gene banks).

development and training, would support the Prague office of the European Trust for Natural and Cultural Wealth -- this Prague office will be commissioned under the project to administer a small biodiversity grants program for Czech NGOs fostering biodiversity initiatives.

### *Benefits*

12. Innovation is being fostered by the integration of the various levels of biological diversity to address issues in conservation planning (as described above), by the unique (for the Czech Republic) collaboration of groups (through the introduction of an NGO small grants program) from a variety of interests, for the balancing of *ex-situ* with *in-situ* approaches to biodiversity conservation, and by the use of consultation at the local level in the identification of viable land uses compatible with the preservation of endangered natural systems. Technically, the Project will break new ground in the development applications of Global Information Systems (GIS) and simplified methods of digital processing.

13. The Project is designed for sustainability. The long-term viability is achieved through the building of institutions within the Czech Republic, including some which are relatively disenfranchised but important to biodiversity such as the respective managements of the National Parks and Protected Reserves. Another facet which is designed to ensure a Project legacy are the training and professional development components. The goal of sustainable revenue generation activities based on consultation with residents who would engage in these activities is another way of ensuring longevity of interventions. These activities are premised on their compatibility with the preservation of biodiversity. They include nature and culture-based tourism, the selling of minor forest products, harvesting game, balancing uneven-aged, small-scale forest production with natural regeneration, and other economically sound and environmentally compatible activities.

14. There is a demonstration value and replicability through the use of integrated planning, and the introduction of new technologies, as well as by the establishment of bilateral organizational structures which foster international resource management approaches. This GEF Project will evolve test solutions for conserving biodiversity. Many of these are regional issues and therefore, the Project will have significant demonstration value. Successes, as well as, failures can be readily transmitted and adapted throughout the region.

15. The Project's specific benefits would:

- a. Greatly reduce the loss of species and now unique relict ecosystems by conservation and management of the forest and alpine associations, a significant proportion of which are not yet protected. This GEF Project strategy is important in assuring the maintenance of the forest and alpine fauna as well as flora;
- b. Encourage related organizations such as the Department of Nature Protection and Department of Forestry to work together on an array of conservation issues;
- c. Enable man to restore ecosystems destroyed by either natural or anthropogenic factors by re-introducing populations into their natural or equivalent habitats after having reduced the influence of the most striking limiting factors;
- d. Stabilize ecosystems by maintaining a high level of genetic variability within species. Thus the species can adapt themselves to the site, even if the site conditions are changing to a certain extent; and
- e. Increase the forest economy in the long term by being able to use the full amplitude of genetic variability available, e.g., by replacement of poorly adapted species by better adapted ones and tree improvement programs.

### *Risks*

16. The major risks are primarily technical and managerial. The technical risk is that a further delay in the basic approach to biodiversity protection in the protected areas could result in continuing biodiversity degradation of the ecosystem. The managerial risk is that the poor Government salaries could result in the top scientists and technicians expected to manage and implement the project leaving Government and Institute service. The project would mitigate these risks by implementing this project from 1993, 1994 and 1995, and by providing funding to support the work and professional development of the key scientists, managers and technicians implementing the project.

17. There are some institutional risks in that legislation and administrative arrangements are not complete after the recent establishment of the Czech Republic. Secondly, there are issues of privatization to be addressed in the planning processes associated with the project. The project will be a key in assisting with such adjustments while at the same time ensuring that biodiversity considerations are taken into account in this rapid period of change.

### *Environmental Assessment*

18. The Project has been reviewed by the Regional Environment Division and it has been placed in the environment screening category "C" as it would have not significant negative environmental impacts. Monitoring and evaluation are built into the terms of reference for the Project Management who will be reporting on a quarterly basis. There are additional built-in quality control and monitoring elements because of the research which will be published in peer-reviewed journals of international quality. Nonetheless, the restoration of wetlands at Palava (which includes key works to restore and rehabilitate important wetlands and floodplain forests) will require an environmental assessment and review acceptable to the World Bank.

### *Actions to be Agreed*

19. During negotiations on the Grant Agreement, assurances would be obtained as follows:

- a. **Regional Scientific Committees.** The Ministry of Environment shall establish Regional Scientific Committees for the Sumava transboundary zone with Germany, for the Palava transboundary zones with Austria and the Slovak Republic and for the Krkosne transboundary zone with Poland no later than October 31, 1993.
- b. **Grant Effectiveness.** The Grant would be declared effective upon submission of documentation satisfactory to the Bank that the Project Management and Coordinating Unit (PMCU) has been established by the Ministry of the Environment (Department of Nature Protection), that the Chief of this Project Management Unit, whose qualifications and experience are satisfactory to the Bank, has been appointed.
- c. **Accounts.** A special account would be established in a financial institution acceptable to the World Bank. This account would be audited annually under arrangements acceptable to the World Bank.
- d. **NGO Small Grants Program.** A written agreement between the Ministry of the Environment (Project Management Coordinating Unit in the Department of Nature Protection), the World Bank and the Prague Office of the European Trust for Cultural and Natural Wealth would be concluded whose financial arrangements and grant making criteria would be signed after review and approval by the World Bank. No withdrawal from the GEF grant by the Czech Republic would be authorized for this Prague based Trust from the GEF account until the Bank has reviewed and approved this agreement and it has been formally signed by both parties.

- e. **Forest Ecosystem Protection.** A written agreement between the Ministry of the Environment (Project Management and Coordinating Unit in the Department of Nature Protection) and the Ministry of Agriculture (Department of Forestry) would be concluded whose financial arrangements and technical specifications for grant investments would be signed after review and approval by the World Bank. No withdrawal from the GEF grant by the Czech Republic would be authorized for the Ministry of Agriculture(Forest Department) from the GEF account until the Bank has reviewed and given approval and it has been formally signed by both parties.
- f. **Research Center - Palava.** An assurance will be sought from the Ministry that government funding to complete the Palava Research Center will be provided.
- g. **Government Budget Support.** An assurance would be sought at negotiations that the Czech Republic would maintain the current level of budget funding for the protected areas in real terms during the life of the project.

Attachments  
Washington, D.C.  
June 15, 1994

**SCHEDULE A**

**CZECH REPUBLIC**

**BIODIVERSITY PROTECTION PROJECT  
CZECH TRANS-BOUNDARY RESERVE MANAGEMENT**

**COST ESTIMATES  
(Current US\$)**

Investment Costs	Local	Foreign	Total	% Foreign Exch.	% Base Costs
	------(US\$000)--				
<b>A. Biodiversity Protection Program</b>					
1. Management of Key Ecosystems	492.0	78.2	570.2	13.7	27.4
2. Development of Community Support	246.0	0.0	246.0	0.0	11.8
3. Wildlife Research and Management	68.0	0.0	68.0	0.0	3.3
Sub-Total	806.0	78.2	884.2	8.8	42.5
<b>B. Conservation Program</b>					
1. Buffer Zone Economic Strategies	72.0	8.0	80.0	10.0	3.8
2. Carrying Capacity and Revenue Mechanisms	46.0	24.0	70.0	34.3	3.4
3. Demonstration Projects	110.0	0.0	110.0	0.0	5.3
Sub-Total	228.0	32.0	260.0	12.0	13.5
<b>C. Institution and Infrastructure</b>					
1. NGO Small Grants Program	100.0	0.0	100.0	0.0	4.8
2. Comparative Data Management	15.3	289.7	305.0	95.0	14.7
3. Infrastructure Improvement	330.0	0.0	330.0	0.0	15.9
4. Project Management	75.0	15.0	90.0	16.7	4.3
5. Training	19.5	90.5	110.0	82.3	5.3
Sub-Total	539.8	395.2	935.0	54.0	45.0
<b>Total BASELINE COSTS</b>	<b>1573.7</b>	<b>505.4</b>	<b>2079.2</b>	<b>24.0</b>	<b>100.0</b>
Physical Contingencies	92.2	9.0	101.5	22.4	4.9
Price Contingencies	63.0	6.7	69.7	17.8	4.5
<b>Total PROJECT COSTS</b>	<b>1729.0</b>	<b>521.0</b>	<b>2250.0<sup>a</sup></b>	<b>23.1</b>	<b>109.4</b>

<sup>a</sup> Does not include Austrian Eco-Fund activities.

FINANCING PLAN

Source	Local	Foreign	Total
	(US\$ Million)		
GEF Grant	1.000	1.000	2.000
Austrian Eco-Fund	0.250	0.250	0.500
USDA Forest Service <sup>a</sup>	-	0.050	0.050
Government	0.200	0.000	0.200
<b>TOTAL</b>	<b>1.450</b>	<b>1.300</b>	<b>2.750</b>

a/ Will assist in US-based professional development and training.

SCHEDULE B

PROCUREMENT ARRANGEMENTS  
(US\$ Millions)

Items	Procurement Method		
	ICB	Other	Total
(1) Civil Works	----	0.400 <sup>a</sup>	0.400
	----	(0.400)	(0.400)
(2) Goods, Vehicles and Equipment	----	0.700 <sup>b</sup>	0.700
	----	(0.600)	(0.600)
(3) Technical Assistance and Training	----	1.050 <sup>c</sup>	1.050
	----	(0.500)	(0.500)
(4) Incremental Salaries, Operating Costs and Maintenance Expenses	----	0.600 <sup>d</sup>	0.600
	----	(0.500)	(0.500)
<b>TOTAL</b>	----	<b>2.750</b>	<b>2.750</b>
	----	<b>(2.000)</b>	<b>(2.000)</b>

NOTE: FIGURES IN PARENTHESIS ARE GEF GRANT

a/ Local shopping for civil works.

b/ Includes International Shopping and Local (US\$500,000) and Direct Purchase (US\$200,000).

c/ Includes training (US\$500,000) to be procured under Bank's consultant guidelines.

d/ Includes Project Management Coordinating Unit and contracted field staff.

**SCHEDULE B**  
(continued)

**DISBURSEMENT**

Items	Amount (US\$ million)	% Financing
(1) Civil Works	0.15	30 %
(2) Goods and Equipment	0.65	100 %
(3) Technical Assistance and Training	0.5	100 %
(4) Incremental Salaries, Operating and Maintenance Costs	0.5	100 %
(5) Unallocated	0.2	
<b>TOTAL</b>	<b>2.0</b>	

**ESTIMATED DISBURSEMENTS**

	IBRD Fiscal Year		
	1994 <sup>a</sup>	1995	1996
Annual	0.4	0.7	0.9
<b>Cumulative</b>	0.4	1.1	2.0

<sup>a</sup> An estimated \$200,000 of disbursements would take place from September 1993 to December 31, 1993, during the first half of the IBRD fiscal year. The Closing Date is set at December 31, 1996

**SCHEDULE C**

**TIMETABLE OF KEY PROJECT PROCESSING EVENTS**

- (a) Time Taken to Prepare ..... 13 months
- (b) Prepared by Ministry of the Environment and Ministry of Agriculture  
with Bank Assistance
- (c) First Bank Mission ..... December, 1991
- (d) Appraisal Mission Departure ..... tbd
- (e) Negotiations ..... July, 1993
- (f) Planned Date of Effectiveness ..... August 31, 1993
- (g) List of Relevant PCRs and PPARS ..... None

M:\FCZECH\MEMOPREZ.CZK  
August 25, 1994

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**Report No.11739-CZ**

**GLOBAL ENVIRONMENT FACILITY**

**CZECH REPUBLIC**  
**BIODIVERSITY PROTECTION PROJECT**

**TECHNICAL REPORT**

**TO THE**  
**MEMORANDUM AND RECOMMENDATION OF THE DIRECTOR**

**June 15, 1994**

**Agriculture and Water Supply Operations Division**  
**Central Europe Department**  
**Europe and Central Asia Region**

## **WEIGHTS AND MEASURES**

The metric system is used throughout this report.

## **EXCHANGE RATE**

Czech Koruna (KC) 28.5 = US\$1

## **FISCAL YEAR**

January 1 to December 31

## **GLOSSARY OF ABBREVIATIONS**

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<b>USAID</b>	-	United States Agency for International Development
<b>USDA</b>	-	United States Department of Agriculture
<b>USFS</b>	-	United States Forest Service of USDA
<b>WWF</b>	-	World Wildlife Fund/World Wide Fund for Nature

**CZECH REPUBLIC  
BIODIVERSITY PROTECTION PROJECT**

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CZECH REPUBLIC  
BIODIVERSITY PROTECTION PROJECT

TECHNICAL REPORT

**I. BIODIVERSITY AND THE ENVIRONMENT**

**A. COUNTRY OVERVIEW**

1.1 An area of 10,869 sq. km in the Czech Republic (13.8%) is protected and includes national parks, national nature reserves, protected landscape areas, biosphere reserves and many small natural areas administered by district organizations (see Table 1). A previous plan for the development of the protected area network envisaged an increase of 490,000 ha, or an addition of 10% to the protected areas. In addition to protected areas, a new designation, "elements of ecological stability" (EES), had been created. This designation has yet to attain legal status; however it aims at the protection of remnants of habitats in largely agricultural landscapes.

1.2 Major environmental threats range from acid precipitation and agricultural mechanization to tourism and recreation. Some 470,000 ha of Czech Republic forests, particularly in the northwest, are among the worst affected by air pollution in Europe (IUCN, 1990). Krkonoše National Park in the Czech Republic is listed by IUCN as a globally threatened protected area.

1.3 From the internationally important National Park and Protected Nature Reserves in the Czech Republic, three priority zones of threatened biodiversity (see Box 1) were selected for GEF Project financial support.

1.4 The Pálava zone was selected for its unique floodplain forest remnants which also include internationally significant Ramsar designated wetlands of the Morava and Dyer rivers abutting Austria and Slovakia. These Pálava wetlands include unique hills with limestone dependent endemic plants. Important segments of this Pálava/Morava wetland were under strict border control due to its transboundary position with Austria from 1948 to 1990. With the removal of this military restriction, these border floodplains are under increasing visitor and agriculture pressure.

1.5 The Krkonoše zone was selected for its pressured alpine meadows and forests which are impacted by transboundary air pollution as well as significant overuse by non-sustainable concentrated recreation. The result is exceeding the carrying capacity of this sensitive alpine environment.

**Table 1. Protected Areas in the Czech Republic**

Type	Number	Total Area (ha)
National Parks	3	110,000
National Nature Reserves	7	15,100
Protected Landscape Areas	24	308,000
Biosphere Reserves	5	362,000

1.6 In contrast to the overused Krkonoše zone, the Šumava mountain forests, which abut the German Black Forest, are not yet overused. However, as this former military border forest in Šumava, formerly tightly restricted for military purposes, is opened for recreational use, a window of opportunity is available with GEF project support for introducing long term protective management systems.

1.7 These endangered zones areas are theoretically protected in the form of national parks and reserves, but they are now being degraded through pollution and overuse by visitor demands. Although the threat from air pollution is expected to diminish with economic reconstruction, visitor pressures are likely to continue to grow substantially. The privatization of land will increase development pressures on all natural areas, particularly from tourism, agriculture and forestry and the opening of borders is likely to attract substantial numbers of external visitors.

1.8 Since this biodiversity project deals with variable and complex land use problems, it will initiate innovative approaches suited to the different ecological and socio-economic situations in three selected regions of the country.

1.9 These areas are also a part of an international network of biosphere reserves where proven, and experimental approaches to biodiversity conservation are being conducted. The project will also provide institutional support to the Czech Ministry of Environment (CME). This project is also linked to the Poland Global Environment Facility (GEF) Forest Biodiversity project in the activities proposed for the Krkonoše area and the GEF project in the adjacent Slovak Republic.

1.10 Therefore, there is now an urgent need, during this crucial time of transition to new economic systems, to demonstrate that biodiversity conservation and appropriate economic development can be compatible objectives. The GEF project presents an opportunity to address these problems in innovative, integrated, and holistic ways at an ecosystem level, rather than by the more traditional treatment of individual species, areas or site-specific problems. Sites chosen for the project are not considered as isolated parcels, but as vital parts of larger landscapes which include human communities and even heavily modified ecosystems. The approach will be one which recognizes the interdependence of humans and natural systems, and of the interrelations between government sectors and political jurisdictions. It will focus on the participation of key government sectors and local communities in developing cooperative solutions to biodiversity conservation and sustainable development (see Box 2). These solutions cannot be achieved without such interactive involvement.

1.11 Among the innovative components of the project will be the development of mechanisms to increase the economic benefits in the transition and buffer zones surrounding the strictly protected areas while at the same time maintaining their ecosystems and biodiversity. These include planning and

#### **Box 1. Biodiversity**

Biodiversity refers to the variety and variability among living organisms and the ecological complexes in which they occur. It encompasses different levels of biological organization from regional landscapes, ecosystems, and habitats to species and genes, and their relative abundance. Biological diversity was once considered an academic subject. However, there is now a realization that the maintenance of biological diversity influences and impacts on the quality of all life, and as a result the productivity and stability of human societies. The concern in recent decades is that the diversity of plant and animal life in most regions is declining, as is now the situation in the Czech Republic and in most of central and eastern Europe.

development of appropriate tourism in different types of ecosystems and socio-economic situations, and the generation of revenues through various means, such as user fee systems, and sales of interpretative materials and crafts. Experiments and demonstrations in ecologically sound and sustainable land uses will also be initiated, e.g., agricultural and forestry practices for the surrounding area. Assistance will be sought from organizations such as WWF and IUCN, and managers from the private forest sector which have developed similar innovative approaches in Eastern Europe.

**Box 2. Sustainable Development**

Sustainable development is defined by IUCN, WWF, and UNEP as: improving the quality of human life while living within the carrying capacity of supporting ecosystems. A sustainable economy is the product of sustainable development. It maintains the natural resource base. It can continue to develop by adapting, through improvements in knowledge, organization, technical efficiency, and wisdom.

**B. NATURAL RESOURCE MANAGEMENT AND PROTECTION**

*Biological Diversity*

1.12 The areas selected for the project (see Map 1), represent a variety of ecosystem types and habitats ranging from high alpine bogs and meadows, pristine mountain streams, primeval forests, grasslands and woodlands, to lowland floodplain forests, marshes, and lakes, including centuries-old fish ponds. These areas have been, and are now, important centers of evolution of plant and animal species. In recent times they have also been centers for scientific research. As a result they are among the best areas in Central Europe to gain a better understanding of how ecosystems and biodiversity can be sustained, and in many cases restored as needed. Through research and monitoring in these areas, knowledge will be gained as to how human activities have affected, and are affecting, different types of ecosystems and habitats, and how these actions can be changed to keep these areas and the societies that depend on them, healthy. The forested mountain areas of Krkonoše and Šumava are important international watersheds. Therefore, this GEF project will contribute, not only to the development of models for biodiversity conservation, but also to the other GEF goals such as the protection of international waters through water management of the watershed and catchment areas, and the monitoring of possible impacts of global change in relation to greenhouse gases and ozone depletion.

1.13 Approximately 3,500 vascular plant species are found in the former Czechoslovakia<sup>1</sup>. This number includes introduced, inventive and commonly cultivated taxa, but more than two thirds of the total are indigenous species. The total size of the fauna in the Czech and Slovak Republics is estimated to be 50,000 to 60,000 species including 600 vertebrates. Practically all Middle European ecosystems occur in this region, except those typical of the coast. Because of a complicated and dynamic natural history, the flora and fauna include a wide range of biogeographical elements, with many of the native species being important relics or even endemics.

1.14 In addition to relatively intact natural areas, such as some of those along the former "iron curtain," there are also varied and harmonious landscapes which have resulted from centuries-old land-use patterns. Some of these contain an exceptional diversity of life which matches, or even surpasses, that of the more natural areas. For example, the Alpine meadows of Krkonoše have developed endemic

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<sup>1/</sup> Figures are not presently available for the Czech Republic, but are believed to be of the same order of magnitude.

species of flora as a result of many centuries of agricultural use. Such stable landscapes, created where adjustments have been made over long periods between human economies and natural resources, are of considerable value for their historical and social interest, and the lessons they hold for biodiversity conservation now and in the future. Many of these areas are valuable reservoirs of genetic materials, such as crop and domestic animal varieties associated with land uses which have disappeared from areas managed under the large scale agriculture of recent times.

1.15 This biological diversity, however, is seriously threatened. Many species have disappeared due to habitat degradation and destruction. Improper agricultural and forestry practices, major engineering works, and industry, and attendant problems such as air, water, and soil pollution, channelization of streams, drainage of wetlands, and soil erosion have seriously damaged or destroyed many ecosystems and habitats. Hundreds of historical varieties of fruit trees, wild apple and pear are now endangered. Such valuable genetic resources need to be given high priority for conservation.

1.16 Tables 2 and 3 detail the endangered and threatened flora and fauna of the Czech Republic. The threat to biological diversity does not only involve individual species (and their populations), but affects whole biological communities and ecosystems. Among the most threatened, those that are actually disappearing, are wetlands and floristically rich meadows. Global and local pollution threaten to reduce the biological diversity in these remaining habitats even without any direct human impact.

**Table 2. Threatened Vascular Plants in the Czech Republic**

Extinct	Missing	Critically Threatened	Strongly Threatened	Threatened	Not common, further study required	TOTAL
37	39	267	240	239	330	1,152
2 %	2 %	14 %	13 %	13 %	17 %	61 %

Source: Holub, J., Prochazka, F. and Cerovsky, J. (1979). *Seznam vyhynutých, endemických a ohrožených taxonů vyšších rostlin kvetených CSR (I. verze)* - List of extinct, endemic and threatened taxa of vascular plants of the flora of the Czech Socialist Republic (first draft). *Presilia* 51:213-237, Praha.

**Table 3. Threatened Vertebrates in the Czech Republic**

CLASS	Cyclostomata	Fish	Amphibian	Reptiles	Birds	Mammals	TOTAL
Extinct	2	7	-	-	6	3	18
Endangered	-	4	7	4	12	14	41
Vulnerable	-	2	6	5	30	9	52
Rare	-	8	2	1	21	9	41
In-determinate	-	7	3	-	44	14	68
Total	2	28	18	10	113	49	222

Source: Cerovsky, J., Petricek, V., Trpak, P. and Damohorsky, M. (1988). *Rukovet ochrany přírody 3*. Ministerstvo kultury CSR ve Statním zemědělském nakladatelství, Praha.

1.17 The forests of the Czech Republic are particularly important from an environmental conservation perspective. Approximately 80 percent of the woodland in the Czech Republic has been converted to coniferous monocultures which has significantly reduced the biological diversity of these systems. The forest ecosystems of Eastern and Central Europe have undergone dramatic biological and physical changes over the last 500 years although human impacts on the forests have been occurring for at least 5000 to 7000 years. It is in the last 500 years with population increases, development of organized societies and eventually industrialization that these impacts have seriously influenced the sustainability of the native forests. A major source of concern has been the rapid and unplanned fragmentation of the forests with the loss of the biologically adapted networks that permitted the natural genetic dispersal of both plants and animals. In an attempt to correct the environmental decline of these forests a massive tree planting program began at the turn of the century. Based on the information of that day, forest tree material was transplanted without a biological basis, and all too frequently artificial homogeneous stands were created. There was a considerable loss in biological richness and adaptability. However, as we seem to be constantly learning, the weakness in artificial forest ecosystem sustainability, may not become apparent until several generations have passed and the level of stress exceeds the ability of the biological system to accommodate new growing environments. Often overlooked in forest ecosystem management is the now apparent relationship and impact of non-adaptable biological systems on native forests. By creating barriers to gene flow, biological gaps are created and genetic enrichment is reduced. Thus even natural systems or slightly modified forest ecosystems become isolated when surrounded by non-native forests and will eventually decline. Another serious cause of forest deterioration and destruction is air pollution. Since timber production is no longer the single objective, the maintenance of environmental balance and ecological stability have become the most important goals. In addition there is growing interest in the non-productive functions of woodlands such as recreation. About one third of the total forest coverage of the Czech Republic has been declared as "forests of special determination" with an emphasis on their environmental and social benefits.

1.18 The government of the Czech Republic and the Ministry of Environment recognize the complexity of these problems and are now in the process of establishing new laws, policies, standards, and international agreements to address the issues of biodiversity conservation and sustainable development. This transformation will be a long-term process, but strong actions must be taken now if ecosystems, and biodiversity are to be conserved. The GEF project would provide the Czech Republic with the urgently needed additional funds to initiate the development of conservation and sustainable development models in the target areas.

1.19 *Conservation Measures.* Mechanisms for biological diversity conservation contained in this project include support for the management and enhancement of a protected area network, in-situ habitat management, ex-situ cultivation and captive breeding. Research and monitoring are also essential components and are strongly orientated to the protection and rational use of the biological and genetic diversity of the country. Implementation of these measures requires the essential support and active co-operation of communities and individuals at all stages of the project. Therefore this project has a significant emphasis on community involvement and on the development of sustainable protection, restoration and ex-situ conservation measures for ecosystems as a whole. The three areas, different ecosystems in themselves, provide the opportunity to trial these measures.

1.20 Initiatives taken in this project can be used as models for Eastern Europe and areas in the emerging CIS Republics. These countries face or will have to face similar environmental issues such as air pollution and the interrelationship between an established protected area and land uses in the

surrounding areas.

*Institutional Setting and Legislative Framework*

1.21 Prior to the development of the Czech Republic, individual State Nature Conservancy Acts of 1955 and 1956 defined nature conservation as the preservation, renewal, enhancement and use of natural wealth and detailed the special protection of important areas and natural features. These laws were supplemented by separate republic guidelines issued in 1978 and 1980 dealing with nature conservation development. The overall objective was to integrate conservation and use of natural resources and to apply principles of ecosystem conservation.

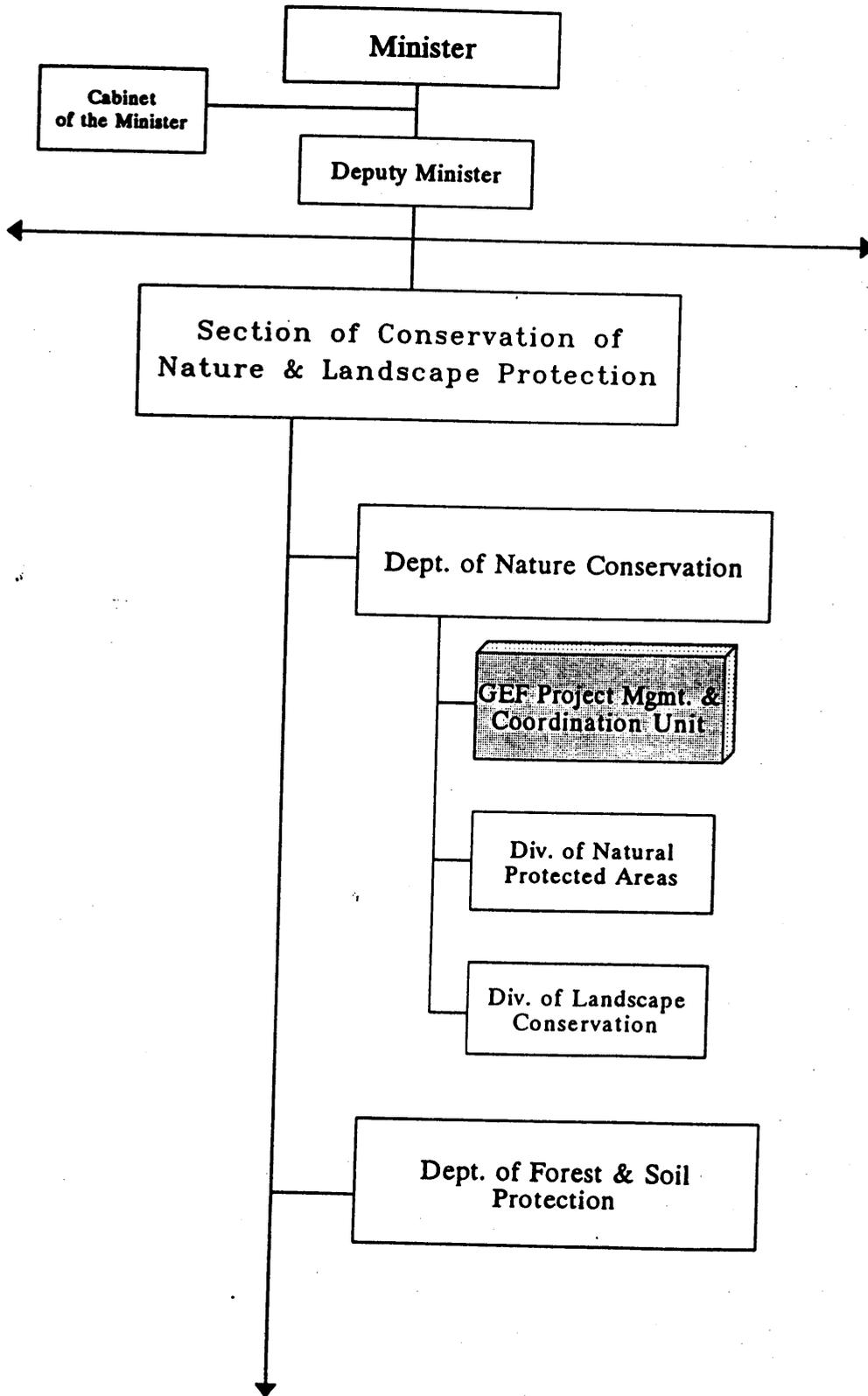
1.22 Protected areas are now declared according to the Czech National Council Act on the Protection of Nature and Landscape (1992) by the Czech Ministry of Environment. (Annex 1 provides a listing of the protected areas in the Czech Republic.)

1.23 Some aspects of the 1992 law are being phased and this includes the responsibility for forestry activities in National Parks. The Act established five authorities for nature conservation:

- a. **Communities and authorized community councils** which participate in the protection of nature and landscape and have certain enforcement and regulatory responsibilities particularly for forests outside natural parks;
- b. **District Councils** which prepare the framework for nature and landscape protection in areas outside the jurisdiction of a national park or landscape protected area;
- c. **Administration of National Parks and Protected Landscape areas** are responsible for their designated territories although in Šumava the administration of the National Park is administered by the Landscape Protected Area management;
- d. **The Czech Environment Inspection** supervises the way in which legal and regulatory provisions related to nature and landscape protection are met; and
- e. **The Ministry of Environment** which is the central state body for nature conservation in the Czech Republic.

1.24 The Czech Ministry of Environment has established a Department of Nature Conservation under its section of Conservation of Nature and Landscape Protection (see Figure 2). This department will house the GEF Project Management and Coordination Unit.

**Figure 1. GEF Project Management & Coordination Unit (PMCU) in the Czech Ministry of Environment**



1.25 The Czech Republic is active in international activities for the protection and conservation of biodiversity. These include:

- a. Membership of RAMSAR convention on wetlands of international importance;
- b. Development of five sites under the UNESCO Man and the Biosphere Program (MaB); and
- c. Membership of the Convention on International Trade in Endangered Species and the World Heritage and Berne Convention.

#### *Sectoral Issues*

1.26 **Administration and Management** The Ministry of Environment is the central authority for management of the environment, as well as for coordination and control of the environmental functions of other ministries. It is responsible for water, air and nature protection of national parks as well as land protection aspects of agriculture and forestry and mineral resource protection. The Department for the Conservation of Nature is responsible for the protected area system. It has a number of organizations responsible to it including the Czech Institute for Nature Conservation and the administration and management of national parks.

1.27 From 1990, a Czech Institute for Nature Conservation (Cesky Ustav Ochrany Prirody) was established with seven regional offices. The main aim of the institute continues to be the selection, management and use of protected natural components. It is also likely to continue to carry out wide-ranging research on threats to protected areas, monitoring and basic inventory work for each protected area and prepare management plans. The Czech Institute provides a professional training house for 25 participants each year in nature conservation. In addition, an education center at Rychory provides in-service training and a regional center concerned with protected landscape areas administration and management of the Czech and Moravian caves. The total numbers employed in protected areas management and administration are *less than 1,000* in the Czech Republic.

1.28 The administration and management of national parks tends to be undertaken by the park authorities themselves, although it can vary from site to site. The authorities are answerable directly to the Czech Ministry of the Environment. Many frontier national parks and protected areas are organized on a bilateral basis with neighboring countries.

1.29 Protected landscape areas (CHKOs) are administered by separate offices for each area which deal directly with the Czech Institute of Nature Conservation. They employ an average of four to ten professional staff who are principally involved in planning, management, monitoring and educational work. Research in CHKO is conducted by the Academy of Science or by the Institute for Nature Conservation which most usually supervises the protected landscape areas.

1.30 In 1991 the Czech Republic national parks received KC 30.9 million and protected landscape areas KC 19.1 million. For the 1993 budget year, a total of KC 41 million was budgeted for this purpose.

1.31 In 1958, the National Museum Society, the first non-governmental nature conservation

organization was founded but later disbanded and was subsequently replaced in 1979 by the Czech Union of Nature Conservation (*Cesky svaz ochrancu prirody*) (CSOP). This group often takes responsibility for the management of nature reserves and monuments.

1.32 On the basis of a June 1990 document *The Environment in Czechoslovakia*, a "Draft Concept of State Ecological Policy" was produced. This was followed in July 1990 by the document *Ecological Programs and Projects, Czech and Slovak Federative Republic* which added more details to the draft policy and described specific objectives, including the development of national and international parks. The status and implementation of these programs is not clear at the present time. It is believed, however, that these frameworks, as they relate to the Czech Republic, are being adapted to the new political situation.

1.33 The Czech Ministry of Environment, through its state nature conservation bodies, has an advisory input to discussions on state and republic plans, agricultural and water management and energy projects, and all types of physical planning. It produced the Blue Book and Rainbow Book (*Environment of the Czech Republic 1991*) a comprehensive survey of the country's environmental situation and program of environmental protection.

1.34 The Czech Republic in the early 1990s, in response to environmental pressure, was developing -- "the ecoprogram" -- aimed at integrating ecological and economic activities. A national conservation strategy was also being prepared, containing a Species Preservation Strategy. As yet unresolved is the question of the return of land to former private owners (under the Restitution Law) which might result in the break-up of larger protected areas. Land is in the most part under state ownership, but where private enclaves occur in protected areas, the owners are obliged to conform to legal requirements such as the existing forest (harvesting) plans.

1.35 **Land Redistribution.** In the Czech Republic, recent legislation was enacted that safeguards the integrity of the protected area system from land redistribution. In any areas subject to reprivatization<sup>2</sup> (the return of specific land to its former owners) substitute land is to be offered. If not available, compensation is provided. As well, the Czech protected area managers have the preemptive right of purchase. In the case of lands in protected areas that might be the subject of distribution, collective forest farms distributed to the workers on privatized (for example forest collectives), the Transformation Law and the Land Use Law forbid any change of use offered to the general public. Overall land subject to privatization and distribution cannot be sold.

1.36 **Other Relevant Information** Special governmental decisions were passed in 1976 and 1978 regarding environmental education, which was to be promoted at all levels in both republics. In the Czech republic, one university offers courses on "Protection of the Natural Environment." There is a training center established in the Krkonoše National Park. Tourism is a major element of national park interests. Selected protected areas are used very extensively for educational purposes and have visitor centers and nature trails.

## C. LESSONS LEARNED FROM SIMILAR PROJECTS

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<sup>2</sup>/ Land redistribution is a generic term that covers land reprivatization, distribution and privatization.

1.37 The five GEF biodiversity projects<sup>3</sup> in the region have just been initiated or are at advanced stages of preparation. The GEF projects all have innovative components and it is premature to draw lessons from any similarities at this time. Nonetheless, there are a number of recurring issues:

- a. A relationship needs to be developed with surrounding communities through participation in planning and management and the development of sustainable and appropriate land uses around protected areas;
- b. Transboundary coordination is needed with other countries given that wildlife and pollutants do not respect political boundaries and management systems need to be applied over complete ecosystems; and
- c. Professional development needs to enable managers, administrators and local communities to effectively develop the skills to manage, plan and administer land and usage in a sustainable way as well as achieving biodiversity protection objectives.

## II. THE PROJECT

### A. ORIGIN AND RATIONALE

2.1 While the GEF project has been accorded high priority by the Ministry of the Environment, funds are not available from government sources to carry out the work proposed here and the government does not want to borrow external resources for it at market rates of interest.

2.2 The proposed Czech biodiversity protection project has three innovations to protect the endangered ecosystems in the selected zones:

- a. Transboundary integrated conservation approaches would be established over formerly strictly protected (under military administration) cross border areas<sup>4</sup>. Each of the three proposed ecosystem reserve zones in the project in the Czech Republic are in transboundary areas. Development of a coordinated protection strategy involving five impacted countries, the Czech Republic, Poland, Germany, Slovakia and Austria will be challenging politically and scientifically, nonetheless, this project will initiate these efforts;
- b. Funds provided under the Project will contribute to the first GEF effort to commission an international NGO (The Prague Office of the European Trust for Ecological Bricks) to administer and evaluate an in-country NGO biodiversity competitive grants program.

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<sup>3/</sup> Four projects have been approved, Poland Forest Biodiversity Protection Project, \$4.5 million (December 1991) and Belarus Forest Biodiversity Protection Project, \$1.0 million (September 1992), Slovak, \$2.3 million (September 1993) and Ukraine, \$0.5 million (July 1993) Biodiversity Protection Projects.

<sup>4/</sup> Both the Morava Floodplain reserves abutting Austria and the Sumava National Park forests abutting Germany were strictly off-limits to non-military persons from the end of World War II to 1990, resulting in minimum human impact and interventions over this 50 year period. They were under the administration of the Military Forest Department.

- c. The project initiates a major effort to ensure the longer term financial sustainability of these protected ecosystems through the planning and development of recurrent funding mechanisms, such as, entrance and user fee systems and through encouraging additional contributions to the proposed European Trust Prague Office for NGO Biodiversity Competitive Grants.

2.3 The project will complement other activities such as the national park component of the World Bank Forest Development Support Loan for Poland (3641-POL) and GEF supported protection activities (with Poland in the Krkonoše and the Slovak Republic, with Austria in the Morava FloodPlains and with Germany and Austria in the abutting Šumava National Park) all of which abut the Czech reserves proposed for support under this GEF project.

2.4 This project was originally developed for the former Czechoslovakia and has been divided into two projects in the new independent republics. It will be a logical extension of the activities for sustainable development and protection of transnational protected areas.

## B. PROJECT AREAS

2.5 Three trans-border areas (see Maps 1 to 4) each of which has unique and important biodiversity values have been selected for implementation of a range of activities to meet specific issues. Given that these are border areas, the initiatives developed will as far as practicable, be communicated and discussed with the appropriate neighboring management agencies. The MaB framework among others will be used as a mechanism for this communication. Zoning is used to define the biosphere reserve (see Figure 2) and most usually includes a legally protected core area (such as a national park), a legally defined buffer zone and a non-defined transition zone around the core and buffer. The overall approach will be to have the contiguous areas managed on a similar basis. This will be particularly important for activities such as wildlife management, monitoring of pollution, reforestation, economic activities in buffer zones, conservation of genetic material and visitor management. The three areas (Šumava, Krkonoše and Pálava) are described in more detail in Annex 1.

### *Šumava*

2.6 **Location.** Šumava is located in southwest Bohemia in the Czech Republic and is bordered by both Germany and Austria (See Map 5).

2.7 **Key Characteristics.** Šumava is one of the most valuable natural areas in Central Europe with almost continuous secondary forest cover. The area is covered with snow for four months and the forests consist of spruce, fir and beech, with homogenous fir forests in the higher elevations. These forests are valuable retreats for lynx and capercaillie. One of the largest populations of the Freshwater Pearl Mussel *Margaritana margaritifera* can be found in this area.

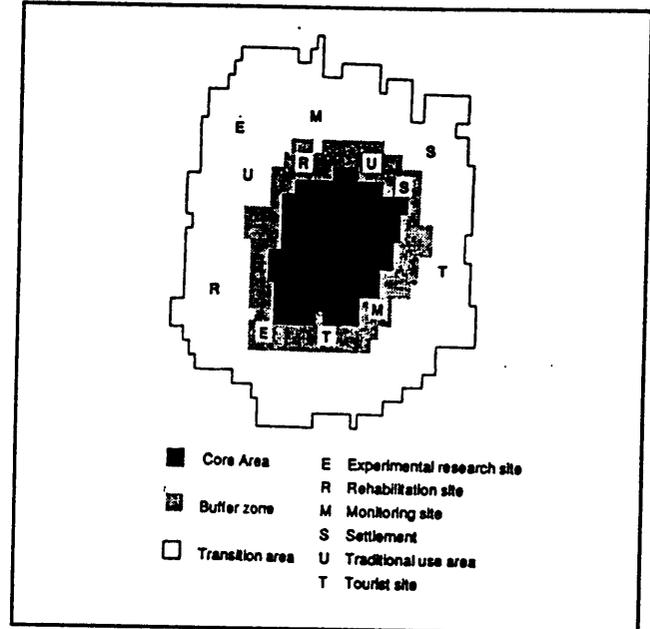
2.8 The region is also characterized by bogs which are a refuge for cold resistant flora and fauna. The peat soil quite unlike the aspects presented in the neighboring Bavarian forest is quite unique and shares important species similar peat bogs of Finland. These bogs are covered by very old crippled spruce, dwarf pine (approximately 1 m high), cranberry and heath.

2.9 The area is an important watershed. Glacial lakes and creeks supply high-quality water

and shares important species similar peat bogs of Finland. These bogs are covered by very old crippled spruce, dwarf pine (approximately 1 m high), cranberry and heath.

2.9 The area is an important watershed. Glacial lakes and creeks supply high-quality water to the farms, towns and villages in the surrounding region. Glacial relicts such as crowberry, dwarf arctic birch, and insects including the butterfly *Coleas palaeno* have survived here. The vegetation types which range from 500 m above sea level to 1378 m, include mountain pine *Pinus montana*, *Pinus mugo rotundata*, birch *Betula pubescens* and *Betula carpatica*, spruce, round eared willow, heather, round-leaved sundew, cotton grass and many varieties of sedge and sphagnum moss.

Figure 2. A Model Biosphere Reserve



2.10 **Principal Issues.** Conservation problems in the region include:

- a. Air pollution, which leaves acid deposits in some parts of the region that cause forest damage as well as acidification of soil and lake water;
- b. Increasing cultivation of parts of the Šumava forests, as the former border of the Iron Curtain is opened up, includes mechanized large scale agriculture combined with large scale "amelioration" (drainage of wetlands, meadows and fields); and
- c. Unsuitable management and forest technologies have also caused serious damage to forest ecosystems.
  - Growing uncontrolled tourism with the opening of the border areas will lead to disturbance, isolation and fragmentation of areas used as refuges by endangered species in both sections of the region.
  - Forest ecosystems were also subject to artificially high trophy animal populations (mainly in the western part) to provide sport for privileged hunters under the old regime.

2.11 These issues are also representative of the result of deteriorating traditional lifestyles, deteriorating cultural heritage, the lack of environmental awareness and the programs of forest exploitation of the late 1970's. All of these issues were addressed in a recent planning process and a plan of management, drafted with the assistance of WWF and the involvement of local communities, has now been accepted by the government.

2.13 **Location.** Krkonoše National Park is located in the Czech Republic approximately 120 km northeast of Prague (see Map 6). The park is bordered by Poland. The entire range of mountains, including those of Krkonoše are part of the Sudety chain.

2.14 **Key Characteristics.** The climate of the region resembles that of sub-arctic regions in the upland plateau above 1300 m. Strong western winds over dissected relief result in an uneven distribution of precipitation and secondary translocation of snow, important factors in the high biodiversity of the area.

2.15 A steep tectonic slope forms the Polish (northern) side of the mountains and on the Czech side several parallel ranges are divided by river valleys which project from the main ridges. Nearly the whole of the Czech part belongs to the catchment of the Elba River, while the Polish part is a component of the catchment of the Odra River.

2.16 The Czechoslovakian "Red Data Book" (vertebrates only) indicates six endangered species *Lampetra planeri*, *Triturus cristatus*, *Eudromias morinellus*, *Falco peregrinus*, *Rhinolophus hipposideros*, *Myotis dasycneme* and 49 vulnerable species. Habitats of particular conservation value have been identified, from many years of study and in the existing management plan, are the alpine tundra, sub-arctic peatbogs, glacial corries, mountain spruce forest and flower-rich mountain meadows.

2.17 **Principal Issues.** The Krkonoše mountains are an isolated island of subarctic flora in Central Europe and populations of endangered species are rapidly decreasing. Primarily there are two main issues leading to this decline:

- a. **Air Pollution.** The Krkonoše mountains are surrounded by industrial areas including the power stations of North Western Bohemia and those on the boundary of Poland and Germany. Since 1976, damages by industrial emissions have become quite obvious. At the present time 100 percent of the forest in the Krkonoše mountains are stressed by emissions. Monitoring between 1982 to 1987 has revealed the rapid increase in the affects of air pollution on forest stands. The 1987 estimate indicates that only one seventh of the forest area which will survive longer than 60 years compared to the 1982 estimate. Associated with the direct affects of air pollution is the increase in infestation of the forests by insect pests. For example the Norway Spruce stands were heavily infested by the larch bud moth in the period 1976 to 1981. In 1984 IUCN recognized the Krkonoše among the most threatened protected areas in the world, primarily because of the damage from air pollution to its forests and other mountain habitats, and to the watersheds that supply fresh water to Prague's reservoirs. The FACE Foundation has already made available considerable funding to initiate a program to re-establish the affected forest.
- b. **Recreational Tourism.** One of the major reasons for the high tourism pressure on the mountains was the previous government policy for them to be a major recreational resource for the country. This lead to uncontrolled development of skiing facilities which resulted in major damage to the landscape, weed infestation, eutrophication and even major traffic problems. Summer visitation has been so high that poorly sited and planned walking trails have become major threats to sensitive alpine habitats. Erosion on these trails is a major concern. Over use beyond the carrying capacity of many of the sensitive

habitats has been beyond the management resources of the park to deal with the issue for some time.

### *Pálava*

2.18 **Location.** The Pavlov hills stretch over a narrow strip of land between Pavlov and the Austrian border, 35 km south of Brno (see Map 4).

2.19 **Key Characteristics.** The Pavlov hills are designated as a nature reserve. In 1976 a greater area was designated as a Protected Landscape Area. The Pálava Biosphere Reserve was declared in 1986 and covers an area of some 8017 ha. Both the Czech and Slovak Republics as well as the Austrian government are eager to consider compatible management practices in the region. It has been recently proposed that compatible reservation or at least the comparable management of areas in all three jurisdictions be finalized. As a result two important areas have been identified to extend the present biosphere reserve.

2.20 Important vegetation types of the biosphere reserve, which in parts also extend into Austria, are the floodplain forests, forest steppe, grassy, turf and rocky steppes, and the sub-alpine vegetation of the steep north facing slopes. Animal species of note include *Chondrula saxatiulus*, *Bubo bubo*, *Upopa epops*. *Anser anser* nest in the crowns of pollard willow trees in the Dyje river valley. The Pavlov hills are renowned for their landscape values and the region has a high visitation associated with the natural beauty of the area.

2.21 The strictly protected nature reserves are surrounded by agricultural and forestry practice and sound land management of all the land resources of the area is required to ensure that the areas features are maintained on a sustainable basis for the future.

2.22 The current boundaries of the Pálava Landscape Protected Area includes only a small, but important, section of wetland. This State Nature Reserve, called Krive Jezero, is located on the right bank of the Dyje River immediately south of the village of Nove Mlyny. However, there is a proposal to enlarge the protected area to encompass a much larger area of wetland on both sides of the River Dyje between Krive Jezero and the confluence of the Dyje with the Morava, nearly 30 km downstream (i.e. only a small stretch of the river around the city of Breclav would be omitted). Thus, it is proposed to give national recognition (by inclusion in the Landscape Protected Area and Biosphere Reserve) and international recognition (by designation for the RAMSAR list) to one of the best surviving examples of Central European riverain forest and meadow systems. The national legislative measures are presently in preparation and it is hoped that they along with the international measures can be completed as soon as possible.

2.23 Wetlands like those along the Dyje are a particular phenomenon of Central European Rivers. They are affected by periodic flooding, often governed by snowmelt higher in the catchment. The resulting floodplain is a mosaic of wet forest, open marshes and grasslands, called "luh" in Czech and "Au" in German. On all the major rivers of the Central European region, this type of habitat is dwindling and disappearing due to drainage, the construction of dams and agricultural disturbance. Action is needed to safeguard the remaining sections. The wetlands of the Lower Dyje are the remains of a wetland complex which was until quite recently much larger and richer. They have in the last twenty years undergone severe change - on the Dyje above Nove Mlyny due to the building of three water

reservoirs; and on both the Dyje below Breclav, and the Morava, below Hodonin, due to embankment of their rivers and the alluvial forests. Even so the Lower Dyje, despite suffering drainage, afforestation and river regulation, retains some of the largest tracts of "luh". Therefore, it is vital and urgent to restore and to try and save what is left of the damaged areas.

2.24 It must be noted that while the reservoirs have submerged a range of valuable habitats, some species of water fowl have taken advantage of the change. Breeding species at Nove Mlyny, with its bird islands, include Cormorant *Phalacrocorax carbo* (50 pairs), Purple Heron *Ardea purpurea* (5 pairs), Greylag Goose *Anser anser* (now probably one hundred pairs), Mediterranean Gull *Larus melancephalus* (1-5 pairs), Common Gull *L. canus* (only breeding site in Czechoslovakia) and Common Tern *Sterna hirundo* (70-100 pairs). This is also both an overwintering spot for many geese as well as a migration stopover point for divers, ducks and terns.

2.25 **Principal Issues.** The major issues for the whole region include: undirected and uncontrolled tourism, resulting in over commercialization of the area, and unsuitable forest management, water regime management (particularly in the floodplain forests), and agricultural practices.

### C. PROJECT OBJECTIVES AND DESIGN

2.26 The project was identified following several workshops in the Republic with management and research personnel of the Czech Ministry of Environment, Department of Nature Protection. The focus of activity will be on three areas identified by the Ecological Bricks Initiative. The project will foster linkages to the forest restoration program being started by FACE in Krkonoše and the Morava Floodplain pollution mitigation work being fostered through the Austrian Eco-Fund.

2.27 The objective of this project is thus to protect and strengthen forest and related ecosystem biodiversity in the Czech Republic by:

- a. Protecting three representative ecosystems-zones containing alpine meadows (Krkonoše), lowland forests and wetlands (Pálava) and mountain forests (Šumava);
- b. Supporting the activity of three transnational biodiversity protection networks: Šumava National Park (the Czech Republic, Austria and Germany), the Krkonoše National Parks (Poland and the Czech Republic); and the Morava Floodplain Forests and Wetlands (the Slovak and Czech Republics and Austria); and
- c. Fostering systems of financially sustainable biodiversity protection in the Czech Republic through the introduction of user fees, related charges for visitors and concessions to manage the areas within their determined "carrying capacities."

### *Management Plans*

2.28 The project has been developed after a review of the existing management and regional planning. This is an important linkage in that there is a need to ensure that the framework for land use is consistent with the management objectives of specific designated areas. The project will address and

modify inappropriate uses and provide feedback to improve existing planning.

2.29 In each of the selected areas management plans are at various stages of preparation or acceptance (see Table 4 below). The project components either support the implementation and expansion of the existing management plans or facilitate the basis for sound and integrated planning in the future. Management planning is not a goal in itself, and the key to successful implementation is the development of the necessary ownership and support by the constituencies in the planning process. This involvement is crucial and not necessarily a successful feature of management planning in the past. Therefore, components of the project are directed to integrating planning outside the strictly protected areas in consultation with affected communities and interests.

**Table 4. Status of Management Plans in Project Areas**

AREA	PLAN STATUS	COMMENT
Krkonoše	Detailed plan has been drafted (Sept. 1992) which comprehensively covers management issues and actions within the three zones of the national park and the transition zone. The plan is incorporated into legislation still awaiting approval.	The plan addresses the most pressing issues facing the park as well as taking an innovative approach to issues affecting the park outside the administrative boundaries. The project assists with activities identified in the plan particularly the restoration and management of the forests and the ex-situ breeding mechanisms.
Šumava	A detailed plan was prepared with the assistance of WWF (International). This was recently accepted and formally endorsed by government.	The project supports the implementation of specific programs detailed in the management plan (environment, public use, administration, integrated development and the biosphere program). The review of the role of hunting and the management of game have been included in the project. Legislation will address the management of the forest, whereby the National Park administration will control forestry activity.
Pálava	A territory management plan for the Pálava area has been completed. In summary it purports to propose optimal exploitation of land resources (outside the strictly protected nature reserves) which does not endanger natural resources.	The core areas equivalence to declared nature reserves. Current legislation restricts activities in these areas including hunting, agriculture and forestry. The project through demonstration activities and the development of strategies in the areas outside the core will provide practical mechanisms to meet the objectives of the existing plan. The results of the project will require evaluation from which the plan will need to be revised.

2.30 Table 5 lists the current activities and uses within the Krkonoše National Park and the Biosphere Reserve. Shaded activities apply (occur or are allowed) in the core (strictly protected) zone and are thought to be consistent with the conservation objectives of the area. Additionally, for each activity in the list the number under the buffer or transition column indicates how important this use or activity is in each of those zones (5 = very important, 1 = unimportant, 0 = does not occur). Buffer zones may support a variety of uses which promote the multiple roles of a Biosphere Reserve area. The project will address those activities that are not consistent with management objectives and develop the necessary planning and actions required to minimize the impact or remove the activity. Transition zones are areas of cooperation which often support a wide range of land uses and activities characteristic of the region. These uses and activities largely determine the possibilities for research and demonstration activities to support sustainable regional development. Uses and activities outside the National Park are thought to be similar to the Krkonoše Biosphere Reserve.

**Table 5. Activities Regulated by Current Planning in the Krkonoše National Park  
(Level of importance in core, buffer and transition)**

Activity	Zone		
	Core <sup>a</sup>	Buffer <sup>b</sup>	Transition
Biological inventories		3	3
Plant and animal collection for research		1	1
Conservation management practices		3	3
Environmental education		4	5
Long-term environmental monitoring		4	2
Professional training		1	1
Recreation and tourism		5	5
Tourist development		5	5
Forestry activities		5	5
Destruction of habitats		5	4
Restoration of habitats		5	3
Human settlements		4	5
Residential development		4	4
Urban centers		3	5
Transportation facilities		3	3
Water resource development projects		3	3
Gathering of natural products		3	3
Agriculture		2	5
Grazing		2	4
Hunting and trapping		2	2
Fishing		1	1
Industrial development		1	3
Mineral development		0	2
Poaching		0	0
Dredging and filling		0	0
Restoration of wetlands		0	0

<sup>a</sup> Shading indicates activities that occur or are allowed in the core area.

<sup>b</sup> For each activity the number under the buffer or transition column indicates how important this activity is in each of those zones (5 = very important, 1 = important, 0 = does not occur).

2.31 An analysis of the permitted uses within the zones of the Šumava management plan indicates that activities within each of the zones are consistent with the conservation objectives of the area.

**Table 5. Šumava National Park - Activities According to 1992 Draft Management Plan**

Zone or Transition Area	Uses and Activities
Core	No use is allowed except for limited research activities and educational purposes; hunting, fishing, logging, and silviculture are not permitted (25,000 ha).
Recuperation	All areas have been drastically altered and modified, and except for limited research and monitoring programs no use is permitted. Active intervention is only allowed for erosion control and watershed protection (6,000 ha).
Public Use Zone	All areas are set aside for environmental education and recreation; road access, nature trails, picnic sites, camp grounds, etc. Access is controlled and confined to trail systems.
Traditional Use	All forest lands with artificially established monocultures of different age classes; areas are to be converted into stable forest ecosystems by active intervention (nurseries, replanting and logging) Twenty five year program (25,000 ha)
Special Use	Administrative infrastructure areas
Enclaves	There are the following 4 communities within the park: (a) Sri 300 people, 500 ha; (b) Kvilda 280 people, 150 ha; (c) Stozec 100 people, 60 ha; and (d) Zleby 60 people, 50 ha.
Transport Corridors	A railroad corridor is designated for tourism on the southern border of park. The road corridor is free of settlements but heavily travelled because of border crossing. Some active agriculture is practiced.

D. DETAILS OF PROJECT COMPONENTS

**Biodiversity Protection Program**

**\$884,000**

*(1) Management of Key Ecosystems (\$570,200)*

2.32 This is important as biodiversity isolation either natural or man-made will eventually lead to a loss of ecological sustainability in even the largest forest ecosystems. Though the science of landscape ecosystem management is rather young, there is currently more than adequate information and experience in the forestry sector to develop responsible management strategies for maintenance and even restoration of protected, unique areas and even adjacent communities found in the common landscape. To accomplish this task, deliberate, systematic and well planned cooperation between park and forest managers is required. Thus to properly manage a protected area such as parks or natural areas and their surrounding biological systems requires a new approach in which the natural goal is the coordinated management of their common landscape.

2.33 The GEF project proposes that the Ministry of Environment's Nature Conservation Department and the Ministry of Agriculture's Forestry Department develop a joint coordinated management and restoration plan for the ecological landscapes that contain the Šumava and Krkonoše National Parks.

- a. It is the goal of this coordinated effort to maintain and to improve the biological conditions of these two unique parks. It is also a goal of this cooperation to develop and apply an array of new concepts of forest ecosystem management to improve the biological diversity of both the Park and the surrounding national forests.
- b. These goals will be made possible by management strategies that are directed at first restoring and sustaining the natural ecological systems of these areas prior to the establishment of traditional production goals.

2.34 Elements of this coordinated landscape level ecosystem management program between the two Ministries include:

- a. Establishment of a joint landscape ecological management team for each National Park from the protected areas and neighboring National Forests;
- b. Establishment of a scientific advisory group to share current advances in conservation biology, restoration ecology and forestry and current concepts of sustainable forest resource management;
- c. Development of a joint cooperative strategic plan that gives first priority to the natural restoration and long term maintenance of the protected areas and surrounding National Forest ecosystems (including the joint restoration and management of wildlife species, that is, habitat restoration regardless of ownership and whenever feasible, the restoration of natural plant communities while avoiding the use of exotic germplasms);

- d. Application of modern concepts of population genetics in the restoration of natural plant communities. This will require the application of modern techniques of population identification such as isoenzyme methodology.

**2.35 Restoration of Forest Ecosystems (\$170,000).** The Project will provide financial support to the Ministry of Agriculture (Department of Forestry) to undertake a pilot program for the restoration of forest eco-systems. This program would be primarily but not solely limited to the three zones (including their buffer and transition zones) included in the Project. The objective would focus on the sustainable management, maintenance and restoration of these extended landscape protected areas (including their core National Parks) in Šumava, Pálava and the Krkonoše. Funding would support:

- a. Purchase of new isoenzyme equipment and the necessary complementary chemicals to help the Department to identify native populations of tree and plant species (\$30,000);
- b. Professional development and training in both the Czech Republic and internationally in utilizing this equipment and undertaking wider conservation biology activities (\$40,000);
- c. Investment in pilot programs of forest restoration and conservation biology of forested zones critical to sustain these selected protected areas. These small pilot investments would result in the restoration of native vegetation, thus providing the habitat for the restoration of wildlife as well as restoring the biological successional nature of these ecosystems (\$30,000). Funding would be for the provision of nursery stock, site preparation and planting costs, and labor charges. Funds would also be provided for a consultant to monitor and evaluate this restoration work.
- d. Investment in limited *ex-situ* gene conservation of native species, including provision for collecting equipment and staff costs and deep freezers for germ plasm storage. (\$40,000)

The Forestry Department indicated that it now had adequate nursery facilities to provide the protected areas with tree planting stock. During negotiations on the grant agreement, assurances would be obtained that a Financing Agreement between the Ministry of Environment and the Ministry of Agriculture (Department of Forestry) outlining the technical procedures and criteria for utilization of the funding for these investments outlined above would be agreed and signed between the two parties. The substance of this Financing Agreement would be acceptable to the World Bank.

**2.36 Management of the Alpine Meadows at Krkonoše (\$36,000).** The alpine meadows have developed after many centuries of agricultural use and have a unique flora composed of many endemic species. Traditional agriculture is no longer practiced in these areas and the species composition will inevitably change with a resulting decrease in biodiversity. Two trial management approaches will be implemented: \$18,000 would be provided for farmer incentives to maintain traditional agriculture in these remote areas; and \$18,000 for equipment, labor, operating and maintenance costs for the seasonal mowing the alpine meadows. Both trials will require evaluation in terms of their long term sustainability. Therefore, careful consideration is needed in the selection of representative areas for this activity.

**2.37 Restoration of Wetlands at Pálava (\$365,000).** The component envisages the planning and implementation of key works to restore and rehabilitate important wetland and floodplain forests of the Pálava region. A priority evaluation of sites has already been conducted and include the state nature

reserve at Krive jezero, meadows near Rakvice, Azant and Nejdek and the whole confluence "Soutok". The project will be conducted by close cooperation with the Pálava Protected Landscape Area administration and the forest management authorities. Key steps will include project planning and design including consultation with Austria and Slovak authorities, construction of water retention and diversion mechanisms and monitoring and evaluation of the effects on species and ecosystems. Both national and international scientists have been committed in the development of the project and this will be maintained through each phase of implementation. This project funding would be allocated for engineering and design costs, construction labor and equipment for the rehabilitation of the Pálava wetlands.

*(2) Development of Community Support (\$246,000)*

**2.38 Construction of Research and Education Center at Pálava (\$100,000).** There is already major research activity occurring in the broad Pálava region, including many cooperative and joint activities with Austrian organizations. These activities include research for management, protection and promotion. Unfortunately, there is no central facility to play a key role of coordination. The center is also required to assist with the preparation of educational material. It is proposed to establish the center within an old chateau, Insell, and to erect a support building on the same site. This building is situated approximately 21 km from Mikulov and about 500m from the Austrian border. The need for such a facility has been expressed by a multitude of active research organizations. Such a center is a basic tool needed to properly provide the directed and on-ground research structure needed in the region. Before proceeding with this element a research plan is needed to identify the priority needs for such a center. Both the feasibility and desirability of using the Insell structure will be components of the project. As well GEF funds will be only committed provided government funding to complete the project is assured. Project funding would support construction, labor and internal fittings and equipment costs not to exceed 30% of the overall costs of this restoration project, with the balance of funding to be provided by the Czech Republic.

**2.39 Enhancement of Interpretation and Education Facilities at Šumava (\$66,000).** There is a very great need to expand the very modest and inadequate visitor facilities of the area. It is envisaged that activities would range from the expansion of the system of marked trails of the area to the expansion of the environmental education facilities for the park headquarters. There is a need to integrate materials with a broader program and there will also be a need to review the management plan proposals with the needs of the broader area and community. Some technical assistance is required for the "production" of materials. Project funding would support preparation of educational and interpretive materials, construction of walkways and interpretative trails and visitor facilities in the Šumava region.

**2.40 Environmental Education and Public Awareness at Krkonoše (\$80,000).** The Krkonoše administration has responsibility for the overall Czech Public Awareness and Education Program Unit which is located in the park. Specific needs have already been identified for the park, biosphere reserve and support zones. There is a need, however for an integrated strategy which would address the needs with specific management strategies. The GEF would support the development of these strategies and to some extent their implementation by the provision of essential equipment. Project funds would support consultant assistance and development of a strategy and purchase of interpretative and audio-visual equipment. Funds for fitting out visitor centers with furniture would be provided.

(3) *Wildlife Research and Management* (\$137,000)

- 2.41 **Wildlife Management Program at Šumava** (\$20,000). This component would assist with the rehabilitation and restoration of habitats for some important species as well as a review of the current deer management programs and their impacts. Project funding would support consultant services for wildlife management and to advise on an optimal wildlife management regime for game in this park with funds labor, management and materials in implementing game control.
- 2.42 **Applied Research at Krkonoše** (\$30,000) Research on the dynamics of wild herbivore consumption of regeneration will be important to initiating any ecosystem restoration. The red deer (shared with Poland) require joint management. This research proposed here will investigate the optimal populations and be reflected in modified management programs. The establishment of monitoring sites, equipment, data processing and the publication of results would be funded.
- 2.43 **Ex-situ Conservation Capercaillie Breeding Program** (\$7,000) Limited support is required to assist with a breeding program for this declining species. The program which has already been established will be reviewed to determine the results of this approach to date as well as a comparison to any alternatives that may be appropriate to ensure the maintenance of this species in the area.
- 2.44 **Ex-situ Conservation Non-tree Plant Species** (\$40,000) Support of this new approach to resource management, both education and training in the current sciences of conservation biology and ecosystem management would be provided for the various management staffs. In addition, appropriate training and current literature in the general areas of forest and ecosystem restoration would be provided under the Project. Additional training in wildlife management would be included as well.
- 2.45 Specifically, support would be provided for on-going *ex-situ* conservation of non-tree species in the Krkonoše National Park (\$20,000) and Šumava National Park (\$20,000). This \$40,000 would finance equipment, labor and management for the maintenance of nursery stock in these two parks. Funding for seed storage and the planting of sites previously determined would be done.

**Conservation Program**

**\$260,000**

(1) *Preparation of Sustainable Development Strategies* (\$80,000)

- 2.46 On large complex landscapes, it is both feasible and possible to sustain an array of human activities and maintain the ecological resources. In order to accomplish a sustainable system requires a thoughtful degree of careful planning, coordination and cooperation by the various users and managers involved in the landscape. This is commonly referred to as land use planning.
- 2.47 The main objective of the land use planning program being supported under the Project will be to maintain and improve both the biological and physical conditions of the protected areas, ensure that traditional agricultural and selected land use practices can be successfully continued and to expand the social and recreational opportunities of the general public.
- 2.48 To accomplish successful land use strategies that meet the above goals and objectives requires careful issue identification, as well as the involvement of those affected by the planning process.

Initially, a series of local planning groups need to be established by the LME to identify those activities essential to the maintenance and sustainability of local communities or institutions. During these initial evaluations, the various impacts of human activities on the surrounding ecosystems will be identified and evaluated to determine their long term effects on sustainability of the biological systems. Following this initial phase of local evaluations, a series of regional meetings by the various local committees will collectively bring together the priority issues on a landscape basis. Thus the following steps then would have been accomplished:

- a. Consultation and consensus building on both the local and regional level;
- b. Identification of key issues and concerns affecting sustainability at both the local and regional level;
- c. Joint information assembly, analysis and evaluation;
- d. Joint development of a policy meeting local needs as well as directed at the sustainability of large landscapes and the maintenance of unique cultural skills; and
- e. Joint planning for the implementation of the policy with appropriate assignments of responsibilities.

2.49 To assist in the development of a land use plan requires a series of small local workshops in which the broader goals are noted and the local needs, objectives and their impacts identified. It is at this time that provençal traditional practices and skills are to be identified and local individuals or groups that can contribute their knowledge and skills toward sustainability are encouraged to share their experiences with others.

2.50 These local planning meetings should be implemented by the Ministry of the Environment and should the area also be a Biosphere Reserve then the Czech MaB Committee should also take part. The regional meetings should also be guided by the Ministry of the Environment and the Czech MaB is appropriate. These initial planning meetings should take place within the first year and based on the recommendations of these groups, an initial land use plan for a given landscape area should be in place within 12 months.

2.51 To further support these various planning groups, some additional information would be essential. An evaluation of the existing inventory of historical varieties of crop species, as well as threatened or endangered species and wild relatives will be conducted so that information could be made available for land use planning. Unique habitats would also be identified and mapped. A skills inventory of the local communities should be conducted. Often overlooked is the array of unique cultural skills to be found in the local communities (refer to Annex 3). To assist the Ministry of Environment, local and regional planning groups in their various tasks there are available useful guidelines provided by IUCN for developing strategies for sustainability. If the Ministry of Environment feels it is appropriate, there are international and NGO groups that can assist and contribute at both the local and regional level in the planning process.

*(2) Carrying Capacity and Revenue Mechanisms (\$70,000)*

2.52 Generally, an area's **carrying capacity** can be qualitatively described as the level of tourism visitation without causing unacceptable degradation of the environment. Tourism related carrying capacity has been broken down into numerous inter-related types. Three important types are:

- a. Ecological carrying capacity, the level of visitation beyond which unacceptable impacts will occur, either from the tourists directly or the amenities they require;
- b. Tourist social carrying capacity is the level beyond which visitor satisfaction drops unacceptably from overcrowding; and
- c. Host social carrying capacity is the level beyond which unacceptable damage will be caused to local cultural stability and attitudes towards tourists.

2.53 Many of the selected areas are already experiencing visitation and use beyond the ecological carrying capacities of the resource (for example, Park core areas) and to some extent, their host social carrying capacities. In the past this was partly as a result of a previous government strategy to exploit natural areas as a major recreational resource with little concern for the checks and balances required to protect the resource itself. In recent times, travel restrictions within CSFR and the border areas have been removed, and because of Czech Republic's unique location within the rest of Europe, it can be expected that major tourism and visitation increases will occur. Nature-based tourism, conservation and the private market can provide a unique potential to work together. Private organizations, whether business or NGOs, may be able to play important roles not only in park-related tourism management, but in complementary regional tourism. Such decentralization also would encourage responsible use of the attraction by the tourism industry.

2.54 Most protected areas around the world are maintained with allotments from national government budgets. Related entrance fees, concessions and taxes, or recurrent funding mechanisms, go into the general government treasury. If a government is in a position to adequately support conservation this system works well, but park budgets are often found to be inadequate or reduced as a result of competition for public sector funding. Therefore given the expected increase in the management of natural resources in Czech Republic which will be required, it is urgent that recurrent funding mechanisms be explored. These recurrent funding mechanisms would not only be for the protected areas, but for the broad regions in which they are located.

2.55 One source of recurrent funding for resource management costs could be tourism. Studies to date have shown that appropriate tourism is not a total solution for conservation financing, and other sources of funding will remain necessary to adequately maintain many of the protected areas which do not have tourism capability. Tourism will provide little support to sustainable development if the benefits it generates remain in the hands of the tourist, or in terms of revenue in the tourism industry, or the government treasuries (local and republic) instead of being channeled back into the protected (park) area and the surrounding communities. One way of ensuring channeling is by earmarking revenues for park maintenance and community development.

2.56 Benign land uses which are scientifically rationalized and closely monitored and which depend upon the protected areas for water, flora, fauna, infrastructure and expertise should provide a

"beneficiary tax" to the protected area administration based upon the financial strength of the sector. This will be less than the added value derived from the presence of the state lands providing the valuable natural resource.

2.57 In the Czech Republic the implementation of such concepts will require a heavy emphasis on environmental education requiring adequate planning and coordination between all user groups and management entities.

2.58 Therefore, a major component of this project will be to examine and determine the appropriate carrying capacities of selected environments and to examine the mechanisms, institutional, legal and practical arrangements to use economic measures to maintain carrying capacity at an acceptable level. Such an approach is indeed innovative and is critical to the overall development of sustainable development component of this project.

2.59 The emphasis of the component will be on developing mechanisms to: (i) identify critical habitats currently beyond their carrying capacities; (ii) determine carrying capacity levels for particular activities and habitats; (iii) determine the measures to ensure that carrying capacities are not exceeded (including the use of economic measures); and (iv) implement these measures in selected locations.

2.60 Expertise for this component will be required from a number of sources: scientists, economists, local communities and land users, NGOs and managers.

2.61 The Project would fund a workshop to determine the methodology for the mechanisms above, a consultant feasibility study (12 person months) to explore the appropriateness of these mechanisms, and pilot projects in target areas.

*(3) Demonstration Projects (\$110,000)*

2.62 **Development of Environmentally Sustainable Viticulture (\$60,000).** Wine production in the Pálava region and particularly around Mikulov has been maintained since the Roman times. Modern production methods that are associated with the use of pesticides are now having significant impact. Research has shown that vegetation corridors, biological controls, and the resulting reduction of pesticide use can be practical methods for the enhancement of biodiversity. This component will involve the establishment of a demonstration project to facilitate the introduction of vineyard management practices which maintain, and in many areas enhance the biological values of the region. It will also include an objective which will examine the role and opportunity that vineyards might provide for heritage tourism. The project would fund equipment, consultants, and training programs for local farmers.

2.63 **Development of Model Agriculture Programs (\$50,000).** Studies and plans to initiate pilot programs in sustainable agriculture, environmentally suitable small industries and the establishment of advisory and extension services for sustainable development will be considered in the light of the results from the overall Conservation program. The project would fund consultants in implementing this effort.

**Institutional Infrastructure Improvement Program**

**\$935,000**

*(1) NGO Small Grants Program (\$100,000)*

2.64 Funds provided under the Project will contribute to the first GEF effort to commission an international NGO, the Prague Office of the European Trust for Natural and Cultural Wealth (ETNCW), to administer an in-country NGO biodiversity competitive grants program.

2.65 This component will finance the newly established Prague office of ETNCW who will manage a small grants program in the Czech Republic. Before issuing applications for these small grants, ETNCW will hold two workshops for the development of proposal preparation skills for Czech NGOs. The development of proposal preparation skills will be a significant project legacy for the development and sustainability of the NGO community.

2.66 After completion of these workshops, ETNCW will issue public requests for grant applications from Czech environmental NGOs for projects in support of transboundary biodiversity protection which are connected with the Krkonoše, Šumava and Pálava project areas. The maximum size of a grant will be \$7,500, with the average grant expected to be \$5,000. A minimum size grant of \$1,000 is recommended. A small, five-person grants review committee will be established (see Annex 5, para 3). A Financing Agreement specifying the grants criteria between the Prague Office of the European Trust and the Project Management and Coordination Unit (PMCU) would be agreed and submitted to the Bank during negotiations for review and approval before signing by the two parties.

*(2) Computerization, Monitoring and Data Management (\$305,000)*

2.67 Land resource management requires both a knowledge of the resource, the systems that maintain the resource and management experience, tools and skills. Therefore, the development of an integrated system of monitoring and data management to support the proper management of specific areas, to assess the causative agents of biodiversity conservation problems, and to provide an on-going assessment of the successes and failures of the programs being implemented, is a high priority if biodiversity values are to be maintained in the longer term. This system, including GIS capability will need to be focussed on three levels: local, national and international. A GIS capability enables the manager to model planning decisions (e.g. a facility or prioritizing a fragment corridor conservation system) and examine the interrelationships between specific resource elements. With a sufficient data set, a GIS can model long-term effects as well as provide key indications of management strategies and their likelihood of success or failure. At the very least, GIS capability enables resource information to be overlaid in a spatial context and provides a mechanism for assessing environmental interrelationships over time. As such it is an invaluable planning tool necessary and essential for most other components of the project.

2.68 A UNDP Project entitled "Development of Integrated Information Systems for the Environment of CSFR" was begun in October 1991. This 15 month project of \$266,000 was for both republics and has been completed.

- 2.69 The UNDP project had the following objectives:
- a. Identification of the main institutional responsibilities and duties in the field of environmental information and the measures needed to fulfill these tasks;
  - b. Establishment of a framework for the role of the Slovak Environmental District Offices in the integrated environmental information system in the Slovak Republic; and
  - c. Establishment of a framework for the role of the Regional environmental executive bodies and the regional pollution control bodies in the integrated environmental information systems of the Czech Republic.

2.70 This UNDP project provides an overall framework for this component. It is clear that further funding is required to implement the development of on-ground programs at a local and republic level and specifically those addressing biodiversity protection, rather than those directed at broader environmental issues. In addition, at the local level monitoring has normally been conducted for many years but data are dispersed in a number of locations and facilities do not exist for the meaningful analysis of these data.

2.71 A similar situation exists with thematic and spatial data critical in a variety of land use and development decisions. The need for a GIS network will be demonstrated in the overall framework. Given the expected major changes in tenure and land use in the Czech Republic, there is a need to provide GIS facilities in the very near future to assist in meeting the short- and medium-term land use planning challenges. Challenges that if not met, will threaten these internationally significant biodiversity resources.

2.72 The Czech Republic has a strategy for the co-ordination of environmental data systems as indicated in the overall UNDP and framework. This part of the GEF project is designed to build on this initiative. It will concentrate on developing systems in the three protected areas, and at the State level, through the appropriate coordinating institutions. It will therefore require the design of compatible systems after determination of specific priority needs, the purchase of equipment and software, and the training of key personnel (system managers, operators and land managers) in the development and operation of integrated data management and monitoring.

2.73 The objectives are to give support for decision and policy making, with respect to nature conservation, and land use, and at the same time ensure that compatibility is achieved in the development of transferable and priority data sets between all participants.

2.74 The project would support the procurement of computer equipment, GIS and database software and supportive training, installation costs of this equipment, and external and internal technical assistance of the integrated system of monitoring and biomanagement for the Czech Republic. Funds are also included for the expansion of the electronic mail system and for improving the existing conservation databases.

*(3) Infrastructure Improvement (\$330,000)*

**2.75 Pre-Feasibility Studies on Treatment and Reduction of Waste Water - Šumava (\$20,000).** Part of the cultural features of the support zone in this biosphere reserve is the architecture associated with the villages. Maintenance of the cultural features has been identified as a priority by local communities. These villages are in urgent need of some infrastructure for waste water removal and treatment since inadequate treatment facilities are having a significant negative impact on both the urban and surrounding environment. While many villages require immediate attention, Srni and Kvildathe have been identified as priority areas. Funds made available will assist in the necessary engineering pre-feasibility studies by consultants (20 months of Czech consultants).

**2.76 Management Infrastructure - Šumava (\$160,000).** The recent Šumava planning process which has resulted in major management programs, has identified the minimum number of personnel to meet the objectives for the protected, transition and support zones of the biosphere reserve. The government is in a position to assist with the establishment of staff, but has great difficulty in providing basic equipment including vehicles to enable them to conduct their work. Therefore, this GEF project will determine and provide the most needed basic infrastructure for management. Project funds would finance incremental staff costs (\$ 35,000), vehicles (\$25,000), building construction and renovation (\$80,000) and office equipment (\$20,000).

**2.77 Development of the Administrative Infrastructure at Pálava (\$100,000).** The infrastructure needed to manage the area has not been a priority of previous governments. At the present time, commitments have been made to meet recurrent and operational costs from the Republic budget. But there is a major need to assist with initial purchase of some vital components essential for management. Without such infrastructure, (such as vehicles) the Pálava Biosphere Reserve Authority has little hope of affecting any real conservation of biodiversity. Project funds would finance vehicles, office equipment, and monitoring equipment, etc.

**2.78 Additional Monitoring Equipment at Krkonoše (\$50,000)** The Krkonoše National Park has been the center of considerable study and monitoring for a long period of time. Unfortunately the data that has been collected remains to some extent unusable due to the lack of modern analysis equipment and techniques. The objective is to provide additional monitoring and technical equipment which will specifically focus on the special needs of Krkonoše, especially to monitor air pollution.

*(4) Project Management and Coordination (\$90,000)*

**2.79** To undertake the project a Project Management and Coordination Unit (PMCU) will be established in the Department of Nature Protection in The Czech Ministry of Environment. Project funds will be provided to establish this small office facility as well as staffing. A Project Manager, Deputy Manager and Secretary/Bookkeeper would be appointed and be responsible with the three protected area managers for the conduct of the project. Funding would be provided for incremental staff costs \$51,000, office equipment (\$10,000) and a vehicle (\$8,000) plus office operating costs and Czech and limited international travel for coordination purposes (\$19,000)

**2.80** To ensure that the project maximizes the opportunities for innovation and for the coordination of approaches, a Regional Scientific Coordinating Committee will also be supported for the Šumava area. This committee will be established to ensure that the activities immediately adjacent in the

abutting German Bavarian Forest National Park are complementary with those on the Czech side (\$2000).

*(5) Training (\$110,000)*

2.81 A detailed needs analysis for training has not been completed. Such an analysis is required to meet consideration such as occupational health and safety, professional development and organizational efficiency.

2.82 The project will fund an independent needs analysis to determine the training and professional development needs for protected area managers, researchers and other staff. The existing curricula will need to be reviewed and the analysis should provide details on preferred training delivery mechanisms -- particularly to introduce modern concepts of restoration ecology and conservation biology.

2.83 It would be expected that the project will fund some immediate development needs including a project management study tour, operator training in GIS systems and short courses to train trainers in various skills.

2.84 The funding will also be designed to fund activities recommended as a result of the needs analysis. Terms of reference for the needs analysis will be developed by the Project Management and Coordination Unit (PMCU).

E. PARTICIPATION BY NGOS AND LOCAL COMMUNITIES IN PROJECT ACTIVITIES

2.85 The development of sustainable development strategies will involve local communities and NGOs, as well as the international NGO community. This will be a significant feature of the project and will enable effective implementation of project components. The small grants program will provide for direct support to the NGO community and will leave a legacy for future project planning and implementation by these groups.

F. ENVIRONMENTAL IMPACT

2.86 The proposed activity will have a positive environmental impact by directly enhancing the management and protection of the three selected areas of 163,000 ha. Project supported mechanisms for local community participation in reserve management and planning will be significant components of the project and social impacts are expected to be positive as well.

2.87 The Project has been reviewed by the Regional Environment Division and it has been placed in the environment screening category "C" as it would have no significant negative environmental impacts. Monitoring and evaluation are built into the terms of reference for the Project Management who will be reporting on a quarterly basis. There are additional built-in quality control and monitoring elements because of the research which will be published in peer-reviewed journals of international quality. Nonetheless, the restoration of wetlands at Pálava (which includes key works to restore and rehabilitate important wetlands and floodplain forests) will require an environmental assessment and review acceptable to the World Bank.

G. PROJECT COSTS

Components & Sub-components	Local	Foreign	Total	%	%
	------(US\$000)--				
				Foreign Exch.	Baseline Costs
<b>A. Biodiversity Protection Program</b>					
1. Management of Key Ecosystems	492.0	78.2	570.2	13.7	27.4
2. Development of Community Support	246.0	0.0	246.0	0.0	11.8
3. Wildlife Research and Management	68.0	0.0	68.0	0.0	3.3
Sub-Total	806.0	78.2	884.2	8.8	42.5
<b>B. Conservation Program</b>					
1. Sustainable Development Strategies	72.0	8.0	80.0	10.0	3.8
2. Carrying Capacity & Rev. Mechs.	46.0	24.0	70.0	34.3	3.4
3. Demonstration Projects	110.0	0.0	110.0	0.0	5.3
Sub-Total	228.0	32.0	260.0	12.0	13.5
<b>C. Institutional Infrastructure Improvement</b>					
1. NGO Small Grants Program	100.0	0.0	100.0	0.0	4.8
2. Computer & Data Management	15.3	289.7	305.0	95.0	14.7
3. Infrastructure Improvement	330.0	0.0	330.0	0.0	15.9
4. Project Management	75.0	15.0	90.0	16.7	4.3
5. Training	19.5	90.5	110.0	82.3	5.3
Sub-Total	539.8	395.2	935.0	54.0	45.0
<b>Total BASELINE COSTS</b>	<b>1573.8</b>	<b>505.4</b>	<b>2079.2</b>	<b>24.0</b>	<b>100.0</b>
Physical Contingencies	92.2	9.0	101.2	22.4	4.9
Price Contingencies	63.0	6.7	69.7	17.8	4.5
<b>Total PROJECT COSTS</b>	<b>1729.0</b>	<b>521.1</b>	<b>2250.1<sup>a</sup></b>	<b>23.1</b>	

<sup>a</sup> Does not include Austrian EcoFund activities.

H. FINANCING PLAN

2.88 Estimated project financing plan is as follows:

Table 2 PROJECT FINANCING PLAN

Source	Local	Foreign	Total
	(US\$ Million)		
GEF Grant	1.000	1.000	2.000
Austrian Eco-Fund	----	0.500	0.500
USDA Forest Service <sup>a/</sup>	----	0.050	0.050
Government	0.200	----	0.200
<b>TOTAL</b>	<b>1.200</b>	<b>1.550</b>	<b>2.750</b>

<sup>a/</sup> This includes in-kind training at USDA Forest Service locations in the United States as well as the services of USDA Forest Service consultants, both without charge.

I. PROCUREMENT

2.89 The Grant would finance the procurement of equipment to provide: (a) monitoring, research and communications equipment; (b) GIS; (c) office and interpretative facilities, including video and projection equipment, display sets, etc.; (d) vehicles, monitoring and research equipment and limited materials (US\$700,000); (e) civil works (US\$400,000); and (f) technical assistance, including consultant services (US\$550,000) (See Annex 4 for a partial listing). Procurement of goods and civil works will be carried out in accordance with the *Procurement Guidelines of the World Bank* (May 1992). Procurement of items financed by other cofinancers will be carried out under the respective cofinancier's procurement rules or guidelines.

2.90 International shopping procedure would be used for the items of equipment available off-the-shelf. These items would be grouped in three separate packages, the value of such contracts will not exceed US\$100,000 per contract (up to an aggregate of US\$300,000) and will be procured through International Shopping on the basis of comparison of at least three price quotations to be obtained from at least three different countries. Local shopping procedure, based on the comparison of at least three price quotations obtained from local suppliers, would be used for items of equipment, combined in approximately 20 packages, available locally at competitive prices. The cost of local shopping packages would not exceed \$5,000 per contract (up to an aggregate of \$200,000). Contracts for the equipment, which are of proprietary nature or are subject to licensing arrangements, estimated to cost US\$200,000 in the aggregate, would be awarded following direct negotiations. The project includes two small (total estimated cost of US\$400,000) civil works contracts for restoration of the Pálava wetlands and reconstruction of the research and education center at Pálava. Given the small values of these contracts and the availability of a large number of civil works contractors in the country, local competitive bidding (LCB) procedure would be used for which the Recipient would prepare a draft bidding document based on the Banks Sample Bidding Document for Civil Works (Smaller Contracts) and submit to the Bank for review and clearance before use. The project will include expenditures on incremental costs of salaries, operating costs and maintenance (estimated at \$600,000) for the one-person coordinating offices in each of the project areas as well as contracted field staff to implement technical activities.

2.91 The project also includes twelve short-term assignments (estimated cost US\$550,000) for which individual consultants or firms (both foreign and local) would be engaged following the procedures outlined in the *Guidelines for the Use of Consultants* (August 1981). All of these contracts are estimated to cost under US\$150,000 each; however, regardless of the value, all consultant contracts would be subject of the Bank's prior review. The selection of all individual consultants will be on the basis of comparison of CVs from at least three candidates.

2.92 Procurement would be carried out by the staff of the Project Management and Coordination Unit in the Czech Ministry of Environment, who would be provided the necessary training in Bank procedures. They would also be provided with model invitation documents for consultant assignments. The estimated procurement plan is as follows:

Table 3 PROCUREMENT ARRANGEMENTS  
(US\$ Millions)

Items	Procurement Method		
	ICB	Other	Total
(1) Civil Works	----	0.400 <sup>a</sup>	0.400
	----	(0.400)	(0.400)
(2) Goods, Vehicles and Equipment	----	0.700 <sup>b</sup>	0.700
	----	(0.600)	(0.600)
(3) Technical Assistance and Training	----	1.050 <sup>c</sup>	1.050
	----	(0.500)	(0.500)
(4) Incremental Salaries, Operating Costs and Maintenance Expenses	----	0.600 <sup>d</sup>	0.600
	----	(0.500)	(0.500)
<b>TOTAL</b>	----	<b>2.750</b>	<b>2.750</b>
	----	<b>(2.000)</b>	<b>(2.000)</b>

NOTE: FIGURES IN PARENTHESIS ARE GEF GRANT

a/ Local shopping for civil works.

b/ Includes International Shopping and Local (US\$500,000) and Direct Purchase (US\$200,000).

c/ Includes training (US\$500,000) to be procured under Bank's consultant guidelines.

d/ Includes Project Management Coordinating Unit and contracted field staff.

## J. DISBURSEMENT

2.93 A special account would be established in a Bank acceptable to the World Bank. An initial deposit of \$200,000 would be made into this account by the World Bank. All categories of expenditure (listed in table below) would be eligible for disbursement from the special account. For each payment made out of the account, project management would furnish to the World Bank such documents and other evidence showing that such payment was made exclusively for eligible expenditures. The account would be replenished upon submission of this documentation. Retroactive financing of \$75,000 is included for investments dated from July 1, 1993 for start-up costs of the proposed Project Management Coordination Unit (PMCU) including professional development and training, computer investments, and the establishment of an electronic mail system. The Disbursement Plan for GEF grant funds is as follows:

Table 4 DISBURSEMENT

Items	Amount (US\$ million)	% Financing
(1) Civil Works		
(a) Wetland Restoration	0.30	100 %
(b) Pálava Education Ctr.	0.10	30 %
(2) Goods and Equipment	0.50	100 %
(3) Technical Assistance and Training	0.40	100 %
(4) Incremental Salaries, Operating and Maintenance Costs	0.40	100 %
(5) Unallocated	0.30	
<b>TOTAL</b>	<b>2.00</b>	

**L. SUSTAINABILITY**

2.94 The Project's specific benefits would:

- a. Greatly reduce the loss of species and now unique relic ecosystems by conservation and management of the forest and alpine associations, a significant proportion of which are not yet protected (GEF Project strategy which is important in assuring the maintenance of the forest and alpine fauna as well as flora);
- b. Encourage related organizations (Department of Nature Protection and Department of Forestry to work together on an array of conservation issues.
- c. Enable man to restore ecosystems destroyed by either natural or anthropogenic factors by re-introducing populations into their natural or equivalent habitats after having reduced the influence of the most striking limiting factors;
- d. Stabilize ecosystems by maintaining a high level of genetic variability within species. Thus the species can adapt themselves to the site, even if the site conditions are changing to a certain extent; and
- e. Increase the forest economy at a long term by being able to use the full amplitude of genetic variability available, e.g., by replacement of poorly adapted species by better adapted ones and tree improvement programs.

2.95 The project will be a catalyst for the establishment of a Trust for recurrent funding which will enable the results of the project to be maintained over time. Several of the project components will address mechanisms and economic measures for the sustainability of the protected area as well as for the surrounding communities.

M. PROJECT RISKS

2.96 Although there are no major risks, implementation could be affected by some institutional weaknesses, instability in sustainable forest practices, and delineation of authority and responsibility for the areas (e.g. a diffusion of authority and responsibilities outside the Ministry of Environment), as well as the field level given the major reductions in allocations for staff and essential management functions. A commitment will be sought at negotiations that the government will maintain the current level of funding for the protected areas in real terms during the life of the project.

III. IMPLEMENTATION

3.1 A small Project Management and Coordination Unit (PMCU) will be organized within the Department of Nature in the Ministry of the Environment. The satisfactory establishment of this office would be a condition of grant effectiveness. This Unit would coordinate the project activities administered directly by this Department as well as the Ministry of Agriculture.

3.2 In addition, each of the three biodiversity zones included in the project would establish a one person coordinating office to ensure timely implementation of project activities in Pálava, Šumava and Krkonoše.

3.3 The PMCU would be staffed by a Project Coordinator whose qualifications and terms of appointment would be satisfactory to the GEF, a Deputy Coordinator/Accounts Specialist and an Administrative Assistant. The costs (salaries, furniture, travel, office equipment) would be reimbursed from the GEF project.

3.4 A Regional Scientific Committee will also be established for the Šumava area. The costs of these committee operations (travel, subsistence, hotels) would be reimbursed by the GEF project.

3.5 Monitoring and evaluation of the project are detailed in Annex 2. These elements are designed to ensure that project objectives are being met as the project proceeds. This ongoing evaluation throughout the project will enable immediate correction to be made and assist in implementation.

IV. AGREEMENTS AND RECOMMENDATIONS

4.1 During negotiations on the Grant Agreement, assurances were obtained as follows:

- a. **Regional Scientific Committee.** The Ministry of Environment shall establish a Regional Scientific Committee for the Šumava transboundary zone with Germany no later than December 31, 1993.
- b. **Grant Effectiveness.** The Grant would be declared effective upon submission of documentation satisfactory to the Bank that the Project Management and Coordinating Unit (PMCU) has been established within the Ministry of the Environment (Department of Nature Protection), that the Chief of this Project Management Unit, whose

qualifications and experience are satisfactory to the Bank, has been appointed.

- c. **Accounts.** A special account would be established in a financial institution acceptable to the World Bank. This account would be audited annually under arrangements acceptable to the World Bank.
- d. **NGO Small Grants Program.** A written agreement between the Ministry of the Environment (Project Management and Coordinating Unit in the Department of Nature Protection) and the Prague Office of the European Trust for Ecological Bricks would be concluded whose financial arrangements and grant making criteria would be signed after review and approval by the World Bank. No withdrawal from the GEF grant by the Czech Republic would be authorized for this Prague based Trust from the GEF account until the Bank has reviewed and approved and it has been formally signed by both parties.
- e. **Forest Ecosystem Protection.** A written agreement between the Ministry of the Environment (Project Management and Coordinating Unit in the Department of Nature Protection) and the Ministry of Agriculture (Department of Forestry) was concluded whose financial arrangements and technical specifications for grant investments would be signed after review and approval by the World Bank. No withdrawal from the GEF grant by the Czech Republic would be authorized for the Ministry of Agriculture (Forest Department) from the GEF account until the Bank has reviewed and provided its approval and it has been formally signed by both parties.
- f. **Research Center - Pálava.** An assurance was obtained from the Ministry that government funding to complete the Pálava Research Center will be provided.
- g. **Government Budget Support.** An assurance was obtained at negotiations that the Czech Republic would maintain the current level of budget funding for the protected areas in real terms during the life of the project.

## **V. PROJECT BENEFITS FROM BIODIVERSITY PROTECTION IN THE CZECH REPUBLIC**

5.1 The most important benefits to biodiversity conservation in the Czech Republic and internationally will be in the examples that are developed to illustrate sustainable development in transition and buffer zone around protected areas management for different types of ecosystems in different socio-economic situations. This will not be an easy task, but if these urgent problems of the biodiversity loss and the ecosystems maintenance to produce the goods and services necessary for human well-being are to be solved, it will only occur through collective contributions of different countries in a deliberate, systematic approach such as the one proposed in this project.

5.2 Fortunately, the numbers of countries, conservation organizations, field projects, scientists, and resource managers dedicated to solving the problems are growing. The MaB network of biosphere reserves will assist with this type of cooperation since it has the maturity resulting from the cumulative efforts of thousands of scientists, government officials, and resource managers from countries throughout the world.

## VI. GLOSSARY

**Biodiversity:** The variety of life in all its forms, levels and combinations. Includes ecosystems, habitats, species and genes.

**Biosphere Reserve:**

A unique category of area combining both conservation and sustainable use of natural resources. Each biosphere reserve conserves a representative example of a biotic region. There is a core area for strict protection for a species or habitats surrounded by a support or buffer zone in which sustained development takes place with the focus on developing uses and activities which are compatible with sustained conservation goals.

**Carrying Capacity:**

Capacity of an area to support the life it contains while maintaining its productivity, and capability of renewal.

**Conservation:** The management of human use of ecosystems and natural resources to ensure such use is sustainable.

**Ecosystem:** A community of organisms together with the non-living components of their environment. Ecosystem boundaries are often physical, and are defined so that inputs and outputs can be determined.

**Ex-situ:** The management of genetic resources outside of their natural range.

**Gene Bank:** A center for the storage and management of genetic resources.

**Genetic Resources:**

The heritable materials contained within and among species that may provide economic, scientific or societal values.

**Geographic Information System (GIS):**

A system using maps and display of data (forest cover, pollution damage, habitats, etc.) to overlay, analyze, and display themes to help solve land management problems.

**In-situ:** The management of organisms in their natural state, and habitat, or within their normal range.

**Man and the Biosphere (MaB):**

A UNESCO international program of research, training, demonstration and information dealing with rational conservation and use of natural resources.

**Reforestation:** The introduction of trees and other species on land from which forest had been removed.

**Sustainable Development:**

Improving the quality of human life while living within the carrying capacity of supporting ecosystems.

**Sustainable Use:**

Use of renewable resources (species and ecosystems) at a rate within their capacity for renewal.

**CZECH REPUBLIC**

**BIODIVERSITY PROTECTION PROJECT**

**DETAILED DESCRIPTION OF PROJECT AREAS  
& PROTECTED AREAS IN THE CZECH REPUBLIC**

**ŠUMAVA**

**I. LOCATION, KEY CHARACTERISTICS AND VALUES**

1. Šumava is the Czech translation for Bohemian Forest. It is located in the south-west of Bohemia and is bordered by the Bavarian Forest in Germany and Austria. The Bohemian region covers 257,000 ha. of primarily mountainous terrain with a diversity of landscapes and ecosystems that are unique to the region and Europe at large. Historically, this region has been sparsely populated (1980 census was 63,064 persons) due to its isolation and the resulting low economic potential in comparison to the rest of the Czech Republic. The forest industry has traditionally been the economic backbone of the region, complemented with subsistence agriculture. Undoubtedly, the economic potential of the Bohemian forest centers on nature-based tourism development, as experienced in the Bavarian Forest, following the creation of the Bayerischer Wald National Park. However, as discussed in Section II of the main report, this can only be achieved through the development of an appropriate infrastructure and where all interests are willing to subscribe to the proven concept of nature protection through sustainable development.
2. The prominent military presence in the border area (the core of the Bohemian Forest) over the last 40 years has prevented large scale forest destruction and environmental degradation. During this period entire villages have been removed as a result of large scale resettlement schemes. The ecological benefits, such as the lack of industrialization have only been recognized recently, and exhibited through the declaration of the Šumava Biosphere Reserve (SBR) in 1990, and the acceptance of the Šumava National Park (SNP) as the Biosphere Reserve's core area in 1991. The Biosphere Reserve covers 162,000 hectares, out of which 82 % is covered by forest and 13 % agriculture. The National Park of 70,000 hectare is the core conservation area.
3. Approximately 70% of the national Park is located above 1000 m. The highest peak is 1400 m. The park center is 125 km from Prague, 180 km from Munich and 230 km from Vienna. The two major border crossings linking the Park to Europe are Phillipsreuth (bisecting the Park) and Bayerisch Eisenstein to the north.
4. Šumava is one of the most valuable natural areas in Central Europe with almost continuous secondary forest cover. The harsh climate, with snow cover for four months, has led to mixed forests of spruce, fir and beech, with homogenous fir forests in higher elevations. These forests are valuable retreats for lynx and capercaillie. Otters, black storks and black grouse which have become extinct in the Bavarian Forest during the past twenty years are still found in the Šumava region. About ten pairs of eagle owls have also survived, although the brown bear is no longer present. One of the largest populations of the freshwater pearl mussel *Margaritifera xmarginifera* can be found in this area.

5. The region is also characterized by bogs which are a refuge for cold resistant flora and fauna. The peat soil is covered by very old crippled spruce, dwarf pine (approximately 1 m high), cranberry and heath.

6. This area is an important watershed. Glacial lakes and creeks supply high quality water to the farms, towns and villages of the region. Glacial relicts such as crowberry, dwarf arctic birch and marsh tee or the butterfly *Coleas palaeno* among the insects that have survived here. Characteristic habitats can be found at certain elevations, for example, from 500 m above sea level *Fagato quercetum*, *Alnetum* to 1378 m and *Sorbetopicetum mughetum*. The vegetation also includes varieties of mountain pine *Pinus montana* and *Pinus mugo rotundata* and birch *Betula pubescens* and *Betula carpatica*, spruce, round eared willow, heather, round-leaved sundew, cotton grass and many varieties of sedge and sphagnum moss.

7. Conservation problems in the region include: 1) air pollution, which leaves acid deposits in some parts of the region that cause forest damage as well as acidification of soil and lake water, and, 2) increasing cultivation as parts of the Šumava forests of the former border of the Iron Curtain are opened up. This utilization includes mechanized large scale agriculture combined with large scale "amelioration" (drainage of wetlands, meadows and fields). Intensive agriculture in the southern part of the region is causing major problems and growing uncontrolled tourism with the opening of the border areas will lead to disturbance, isolation and fragmentation of areas used as refuges by endangered species in both sections of the region.

8. Forest ecosystems were also subject to artificially high trophy animal populations mainly in the western part to provide sport for privileged hunters under the old regime. Unsuitable management and forest technologies have caused serious damage to forest ecosystems.

9. These issues are also representative of the deteriorating traditional lifestyles, deteriorating cultural heritage, the lack of environmental awareness, the lack of organized development plans and poorly controlled and planned resource exploitation.

## II. MANAGEMENT OBJECTIVES AND STRATEGIES

10. In a first effort to capitalise on the potential of the area and to address the major issues above, the central government planning agency (TERPLAN) developed a highly progressive Regional Development Plan with tourism, small scale industry and "eco-agriculture" as key elements. As a second step a Management Plan for the Šumava National Park has been finalized. The Management Plan for the park was formulated by a team of Czech experts with the technical and financial assistance of WWF International. Both plans were presented at an international workshop at Srni in June 1991.

11. The long-term Šumava plan objectives include:

- the maintenance and re-establishment of the natural dynamics of the Šumava forests,
- improved protection and management of the extensively used grasslands to maintain the high diversity of plant and animal species and,
- the strengthening of the rural economy through sustainable resource management and promoting conservation oriented tourism and education.

**KRKONOŠE**

I. LOCATION, KEY CHARACTERISTICS AND VALUES

12. The Krkonoše mountains are part of the Sudety chain of ranges which is shared with Poland, the Czech Republic and Germany. In 1959 the Karkonoski Park Narodowy was established on the Polish side and this was subsequently followed by the Krkonoše National Park on the Bohemian (or Czech side) in 1963. The Krkonoše National Park is located approximately 100 km northeast of Prague (see Map 6). A Biosphere Reserve has been established covering both the national parks and their transition zones since 1992.
13. This bilateral Biosphere Reserve includes core National Park areas of 85,000 ha in the Czech Republic and 1,700 ha in Poland. The total Biosphere Reserve areas are 54,000 ha and 6,000 ha respectively.
14. Strong western winds over dissected relief result in an uneven distribution of precipitation and secondary translocation of snow, important factors in the high biodiversity of the area. The climate of the region resembles that of sub-arctic regions in the upland plateau above 1,300 m.
15. A steep tectonic slope forms the Polish (northern) side of the mountains and on the Czech side several parallel ranges are divided by river valleys which project from the main ridges. The majority of the Czech part belongs to the catchment of the Elba River, while the Polish part is a component of the catchment of the Odra River.
16. The Czechoslovakian "Red Data Book" (vertebrates only) indicates 6 endangered species *Lampetra planeri*, *Triturus cristatus*, *Eudromias morinellus*, *Falco peregrinus*, *Rhinolophus hipposideros*, *Myotis dasycneme* and 49 vulnerable species. Habitats of particular conservation value have been identified as alpine tundra, sub-arctic peatbogs, glacial corries, mountain spruce forest and flower-rich mountain meadows.

17. The major habitats and characteristic species of the Krkonoše mountains are:

HABITAT TYPE AND ELEVATION (M)	ALLIANCES	SPECIES
Alpine Tundra (1450-1600m)	<i>Juncion trifidii</i> , <i>Salicion herbaceae</i> , <i>Nardo-Caricion rigidae</i>	<i>Hieracium</i> spp. (23 endemic), <i>Veronica bellidoides</i> , <i>Juncus trifidus</i> , <i>Nardus stricta</i> , <i>Carex bigelowii</i> , <i>Festuca supina</i> , lichens, mosses
Subarctic Peatbogs (1300-1400m)	<i>Oxycocco-Empertrion hermaphroditii</i> , <i>Rhynchosporion albae</i> , <i>Caricion fuscae</i>	<i>Pedicularis sudetica</i> , <i>Rubus chamaemorus</i> , <i>Pinus mugo</i> , <i>Salix lapponum</i> , <i>Sphagnum lindbergii</i> , <i>Empetrum hermaphroditum</i> , <i>Trichophorum caespitosum</i> , <i>Vaccinium</i> spp., <i>Carex</i> spp., <i>Eriophorum vaginatum</i> , <i>Oxycoccus microcarpus</i> , <i>Drosera rotundifolia</i> , <i>Andromeda polifolia</i> .
Dwarf Pine - <i>Pinus mugo</i> (250-1450m)	<i>Pinion mughi</i>	<i>Pinus mugo</i> , <i>Vaccinium</i> spp., <i>Avenella flexuosa</i> , <i>Calamagrostis villosa</i> .
Glacial Corries (1000-1400m)	<i>Calamagrostion arundinaceae</i> , <i>Calamagrostion villosae</i> , <i>Adenostylin alliariae</i> , <i>Cardamino-Montion</i> .	<i>Saxifraga oppositifolia</i> , <i>Sorbus sudetica</i> (endemic), <i>Salix herbacea</i> , <i>Pulsatilla vernalis</i> , <i>Primula minima</i> , <i>Adenostyles alliariae</i> , <i>Aconitum</i> spp., <i>Calamagrostis</i> spp., ferns.
Mountain Spruce Forest (800-1250m)	<i>Vaccinio-Piceion</i> , <i>Athyrio-Piceion</i> .	<i>Picea abies</i> , <i>Sorbus aucuparia</i> , <i>Avenella flexuosa</i> , <i>Calamagrostis villosa</i> , <i>Homogyne alpina</i> , <i>Blechnum spicant</i> , <i>Vaccinium myrtillus</i> .
Mixed Beech-Spruce Forest (480-800m)	<i>Fagion</i> , <i>Luzulo-Fagion</i> .	<i>Picea abies</i> , <i>Fagus sylvatica</i> , <i>Ulmus glabra</i> , <i>Cicerbita alpina</i> , <i>Allium</i> spp., <i>Lilium martagon</i> , ferns.
Flower Rich Mountain Meadows (800-1200m)	<i>Nardion</i> , <i>Nardo-Agrostion tenuis</i> , <i>Polygono-Trisetion</i> .	<i>Bistorta major</i> , <i>Hieracium aurantiacum</i> , <i>Geranium</i> spp., <i>Potentilla aurea</i> , <i>Campanula bohemica</i> , <i>Viola sudetica</i> , <i>Festuca rubra</i> , <i>Agrostis tenuis</i> , <i>Nardus stricta</i> , <i>Trisetum flavescens</i> .

SOURCE: Biosphere Reserve Nomination, 1991.

18. The number of visitors, principally from the Czech Republic, Poland and Germany, reaches nearly 10 million a year. The Krkonoše National Park contains unique natural values but also has significant water resource, recreational, economic and landscape values. The Krkonoše mountains are an isolated remnant of arcto-alpine flora in Central Europe and populations of endangered species are rapidly decreasing. Primarily there are two main issues leading to this decline: (i) air pollution; and (ii) the huge number of visitors which have both direct and indirect impacts.

## AIR POLLUTION

19. The Krkonoše mountains are surrounded by industrial areas including the power stations of North Western Bohemia and those on the boundary of Poland and Germany. Since 1976, damages by industrial emissions have become quite obvious. At the present time 100 percent of the forest in the Krkonoše mountains is stressed to some extent by emissions. Monitoring between 1982 to 1987 has revealed the rapid increase in the affects of air pollution on forest stands. The 1987 estimate indicates that only one seventh of the forest area which will survive longer than 60 years as compared to 1982. Associated with the direct affects of air pollution is the increase in infestation of the forests by insect pests. For example the Norway Spruce stands were heavily infested by the larch bud moth in the period 1976 to 1981.

20. In 1984, IUCN recognized that the Krkonoše National Park was among the most threatened protected areas in the world, primarily because of the damage from air pollution to its forests and other mountain habitats, and to the watersheds that supply fresh water to Prague's reservoirs.

## TOURISM

21. One of the major reasons for the high tourism pressure on the mountains was the previous government policy to utilize them as a major recreational resource for the country. This visitation led to uncontrolled development of skiing facilities, major traffic problems, weed infestation and eutrophication. Summer visitation has been so high that poorly sited and planned walking trails have become major threats to sensitive alpine areas. Over-use beyond the carrying capacity of many of the sensitive habitats has been beyond the management resources of the park for some time.

## II. MANAGEMENT OBJECTIVES AND STRATEGIES

22. The Krkonoše National Park Authority presently administers the protected areas and has a current staffing of 194 made up of:

116	-	administrative, control and resource management personnel
64	-	educational, demonstration and training personnel
14	-	research and technical personnel.

23. The current budget is approximately 35 million KC (Czech koruna) in 1993.

24. Recent administrative and legislative changes have included the direct administration of most of the developed areas inside the park by local government. Pending legislation is expected to enable the park management to have approval of the siting and type of future development in these areas.

25. At the present time there are visitation charges levied for entry into the resort sections of the park, but this money is not directed to cover any of the recurrent costs of park management.

26. Presently the area is managed according to a management plan that details objectives of management and permitted activities. Within all of the zones administration of forest activities is presently under the control of the Forestry organizations. Forestry activity is controlled by existing forest management plans, which in the key protected areas requires the concurrence of the park administration. It is expected that the new legislation will further strengthen the rehabilitation and non-

extractive use of forest resources in the core and buffer zones of the park. Unfortunately this legislation is still being debated and the exact nature of the administrative responsibilities will not be clear for some time.

27. Park management has concentrated on monitoring and research, development of educational and public awareness facilities, rehabilitation and to some extent enforcement. A significant effort has also been directed at planning and the implementation of prescriptions for the management of the designated zones in the management plan.

28. The importance of the need to co-ordinate the management of the Czech protected areas with the Polish authorities has been recognized. Close co-operation with the Polish authorities is being maintained and an IUCN conference held to address the threats to the mountains, principally from air pollution, has recommended joint actions at local, regional and international levels.

29. The Dutch Foundation FACE (Forests Absorbing Carbon Dioxide Emissions) has funded a project for the reforestation of the Krkonoše National Park. The Park authority will be responsible for undertaking this ambitious program lasting some 20 years at a cost of approximately 45 million Koruna per year.

## **PÁLAVA**

### **I. LOCATION, KEY CHARACTERISTICS AND VALUES**

30. The Pavlov Hills stretch over a narrow strip of land between Pavlov and the Austrian border 35 km south of Brno (See Map 4). It includes the western most promontories of the Carpathians on the Pannonia province border (part of the Mikulov Highlands and adjoining lowland relief of the Dyje river valley).

31. The Pavlov hills have been declared as nature reserves for many years and in 1976 a larger area was designated as the Pálava Protected Landscape Area (PPLA). The Pálava Biosphere Reserve was declared in 1986 and covers an area of about 82,000 ha including the nature reserves.

32. The Pavlov hills are renowned for their landscape values and the region has a high visitation associated with the natural beauty of the area. The strictly protected nature reserves are surrounded by agricultural and forestry practice and land management of all the land resources of the area is required to ensure that the areas features are maintained on a sustainable basis for the future.

33. Suitable underlying rock, varying depth of soil, and locally different climatic conditions on slopes of different orientation have resulted in an unusually rich variety of plant species and varieties growing in the Pavlov Hills and for the remarkably variegated mosaic of plant associations.

34. Important vegetation types of the reserves, which in parts also extend into Austria, are the floodplain forests, forest steppe, grassy, turf and rocky steppes, and the alpine vegetation of the steep north facing slopes.

35. In the salt steppe rare halophytes can be found such as *Crypsis aculeata* and *Samolus valerandii*. Forest species of note include *Quercus petraea* and *Carpinus betulus*, on southern slopes associations of *Quercus pubescens* and *Cornus mas* L., and on scree slopes associations of *Tilia platyphyllos* and *Acer pseudoplatanus*. In the Dyje river flat the alluvial forest of *Quercus robur*, *Fraxinus augustifolia* with *Leucojum aestivum* in the herb layer is preserved and adjoins a complex of flood plain meadows.
36. The entomofauna is species rich. A number of pontomediterranean, pontic and sarmatic species reach the northern boundary line of their occurrence. *Saga pedo*, *Mantis religiosa*, *Bombus fragrans*, *Anthanus hungarica*, *Marimba quercus* can be found here.
37. Animal species of note include *Chondrule saxatiulus*, *Bubo bubo*, *Upopa epops*. *Anser anser* nest in the crowns of pollardde willow trees in the Dyje river valley.
38. Wetlands like those along the Dyje area a particular phenomenon of Central European Rivers. They are affected by periodic flooding, often governed by snowmelt higher in the catchment. Their resulting floodplain is a mosaic of wet forest, open marshes and grasslands, called "luh" in Czech and "Au" in German. On all the major rivers of the Central European region, this type of habitat is dwindling and disappearing, and action is needed to safeguard the remaining sections. The wetlands of the Lower Dyje are the remains of a wetland complex which was until quite recently much larger and richer. They have in the last twenty years undergone severe change - on the Dyje above Nove Mlyny due to the building of three water reservoirs; and on both the Dyje, below Breclav, and the Morava below Hodonin, due to embankment of their rivers and the alluvial forests. Even so the Lower Dyje, despite suffering drainage, afforestation and river regulation, retains some of the largest tracts of "luh". Therefore, it is vital and urgent to restore some of the damaged areas and try and save what is left.
39. While the reservoirs have submerged a range of valuable habitats, it should be noted that some species of water fowl have taken advantage of the change. Breeding species at Nove Mlyny, include Cormorant *Phalacrocorax carbo* (50 pairs), Purple Heron *Ardea purpurea* (5 pairs), Greylag Goose *Anser anser* (now probably one hundred pairs), Mediterranean Gull *Larus melancephalus* (1-5 pairs), Common Gull *L. canus* (only breeding site in the Czech Republic) and Common Tern *Sterna hirudo* (70-100 pairs). The area is also important as a migration stopover point for divers, geese, ducks and terns as well as an over-wintering spot for many geese.
40. Both the Czech and Slovak republics as well as the Austrian government are eager to consider compatible management practices in the region. It has been recently proposed that compatible management and possibly reservation of the areas in all three jurisdictions be finalized. As a result two important areas have been identified to extend the present biosphere reserve.
41. The current boundaries of the Pálava Landscape Protected Area include only a small, but important, section of wetland, called the State Nature Reserve Krive Jezero. It is located on the right bank of the Dyje River immediately south of the village of Nove Mlyny. The proposed enlargement of the protected area will encompass a much larger area of wetland on both sides of the River Dyje, between Krive Jezero and the confluences of the Dyje with the Morava, nearly 30 km downstream. This would mean that only a small stretch of the river around the city of Breclav is omitted.
42. It is proposed to give national recognition (by inclusion in the Landscape Protected Area) and international recognition (by designation for the RAMSAR list) to one of the best surviving examples

of Central European riverine forest and meadow systems. The national legislative measures are presently in preparation and it must be hoped that they along with the international measures can be completed as soon as possible.

## II. MANAGEMENT OBJECTIVES AND STRATEGIES

43. The present administration of the Biosphere reserve is undertaken by a staff of ten with additional field personnel available as an alternative to military service.

44. The Pálava Biosphere reserve has a Consulting Board with local government representation which assists with both short and long term planning. Inhabitants with permanent interests in the nature reserve can become voluntary wardens to assist with the management of the protected landscape area.

45. The following non-government organizations are heavily involved in the management of the Region. These include:

- (i) Czech Union of Nature Protection (national with local organizations, one of them at Pálava Protected Landscape Area [PPLA] Administration, and 4 in the area of the enlarged PPLA),
- (ii) Brontosaurus (Brno based voluntary works),
- (iii) Veronica (Brno, produces a journal of nature conservation),
- (iv) Ecocentrum Brno (8 workers and a member of the Green Circle of CSFR), and
- (v) WWF (Brno, with major projects in the enlarged PPLA).

46. Current research programs are being conducted by:

- Czechoslovak Academy of Science (Geography Institute, Institute of Ecology and Systematic Biology, Institute of Archaeology and Institute of Botany)
- Universities: University of Agriculture, Brno (mainly faculty of Forestry and faculty of Horticulture) Masaryk University (mainly Faculty of Science and Faculty of Philosophy)
- Central Control and Tasting Institute of Agriculture (mainly alternative agriculture)
- Research Institute of Ecology and Farming Technology Hrusovany u Brna (alternative agriculture)
- Forestry Institute Lesprojekt Brno (forest management).

The activities of all the above organizations in the PPLA are coordinated by the Biosphere reserve authority.

47. Management plans exist for the nature reserves and a major planning initiative is in progress for the wider biosphere reserve. This management plan is expected to be finalized in the near future.

48. The management objectives and strategies of the PPLA are therefore presently being developed. Nonetheless, it is expected that they will be directed to the conservation of the landscape and its unique natural features as well as the appropriate development of the economic activities in the transition and support zones (i.e. those areas outside the strictly protected nature reserves).

49. The major threats to the whole region include undirected and uncontrolled tourism and over commercialization of the area, unsuitable forest management, unsuitable water regime management (particularly in the floodplain forests and unsuitable agricultural practices).

CZECH REPUBLIC PROTECTED AREAS

NATIONAL PARKS	<i>type</i>	<i>area (ha)</i>	<i>date founded</i>
Krkonoše	V	36,300	1963
Podyji	II	6,300	1991
Šumava	II	68,250	1991
<b>NATIONAL NATURE RESERVES (over 1,000 ha)</b>			
Ardspassko Teplicke skaly	IV	1,772	1933
Karlstejn	IV	1,547	1955
Kokorinsky Dul	I	2,097	1953
Prameny Labe	I	2,884	1980
Prameny Upy	I	4,280	1980
Stara Reka	I	1,197	1956
Vltavsky Luh	I	1,845	1989
<b>PROTECTED LANDSCAPE AREAS</b>			
Beskydy	V	117,319	1973
Bile Karpaty	V	71,129	1980
Blanik	V	4,057	1981
Blansky les	V	21,235	1989
Broumovsko	V	41,000	1991
Ceske stredohori	V	107,113	1976
Cesky kras	V	12,458	1972
Cesky raj	V	8,646	1955
Jeseniky	V	73,689	1969
Jizerske hory	V	35,002	1967
Kokorinski	V	26,726	1976
Krivoklatsko	V	63,346	1978
Labske Piskovce	V	32,474	1972
Litovelske pomoravi	V	9,600	1990
Luzicke Hory	V	26,441	1976
Moravsky kras	V	8,545	1956
Orlicke hory	V	20,410	1969
Pálava	V	8,017	1976
Podyjii	V	10,300	1978
Poodri	V	8,150	1991
Šumava	V	99,752	1963
Trebonsko	V	70,695	1979
Zdarske vrchy	V	70,881	1970
Zelezne hory	V	38,000	1991

**BIOSPHERE RESERVES**

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Krivoklatsko Protected Landscape	IX	62,792	1977
Pálava Protected Landscape	IX	8,017	1986
Šumava	IX	167,117	1990
Trebon Basin Landscape	IX	70,000	1977
Krkonoše	IX	54,000	1992

**RAMSAR WETLANDS**

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Lednice fish ponds	R	553	1990
Trebon fish ponds	R	10,165	1990
Novozamecky and Behyn Ponds	R	923	1990
Modrava peatbogs	R	3,615	1990

**THE CZECH REPUBLIC**  
**BIODIVERSITY PROTECTION PROJECT**  
**PROJECT MONITORING AND EVALUATION PLAN**

I. INTRODUCTION

1. Supervision and monitoring are essential elements of any complex Project. They are much more than checking disbursements, reporting, and contractual observations. They are important in assisting all participants to step back and view the whole effort rather than focussing on managing its' parts. The view afforded permits innovation, adaptive changes, mid-course corrections in changing environments, and the evolution of the project in ways which enrich it and foster the achievement of the goals of the Project. Monitoring and evaluation are particularly important for projects which involve uncertainty or poor and missing data. Therefore, in these cases, assumptions, innovations, and techniques, must be closely monitored before waste or damage occurs.

II. MONITORING

2. With the number of innovative components in this project being implemented in a short time frame, a wider and more extensive program of supervision and monitoring is proposed than is commonly applied in Bank projects. For example, the life of this GEF project is two years, rendering the Annual Project Review less meaningful. Also, its thrust differs somewhat from the normal concerns of the implementing Agency. This will probably not be unusual for such new technical concerns as conservation biology in many areas of the world which most require such efforts. The normal checks and balances and quality assessment mechanisms of such Agencies may be initially confounded by the novel and unfamiliar elements of such Projects and may therefore benefit disproportionately from Bank supervision activities.

3. There is the distinct danger of a paper blizzard with lots of raw monitoring data but little analysis and **useful** synthesis. The Plan is more frequent (three times in 1994 and two times per year thereafter as well as more scientifically oriented compared to the normal schedule of semi-annual staff/consultant efforts in regular Bank projects. The scheduled supervision visits respond to milestones proposed in the Project.

III. SUPERVISION

4. Three supervision missions are planned for each year of the proposed two year project implementation period (estimated at about 2 weeks each, with 1 week of report writing on return). Each of these missions should have the flexibility to adapt to the conditions at the time. The Core Team would include Task Manager, the forest wildlife ecologist, and the parks specialist supplemented by additional scientists. The first supervision mission is proposed for October 1993. At this critical juncture, the administrative mechanisms should be in place, the equipment specifications settled and pro forma invoices organized, a professional development and training program draft developed and a monitoring system proposed. The second supervision mission will take place in April/May 1994 when the work is largely in progress, and the Regional Scientific Coordinating Committees have met with their counterparts in Poland, Germany, Austria and Slovak.

Proposed Staffing Pattern	October 1993	August 1993	October 1993	April 1994	July 1994	Sept 1994	June 1995 Wrap-up
Task Manager	2	2	2	2	2	2	2
Forest Wildlife Ecologist	2	1	1	1	1	1	1
Parks Specialist	2	-	-	1	-	1	1
GIS Specialist (Trust Fund) non-GEF	1	-	-	1	-	-	-
Land Use Planner (Trust Fund) non-GEF	2	1	1	1	1	1	-
<b>Proposed Supervision (GEF) Staff/Weeks</b>	<b>6</b>	<b>3</b>	<b>3</b>	<b>4</b>	<b>3</b>	<b>4</b>	<b>4</b>

5. The proposed budget for this intensive supervision work is 27 staff weeks, 12 weeks for 1993, 11 staff weeks for 1994 and 4 staff weeks for the wrap up work in 1995. The estimated total supervision cost is estimated at \$40,000 for 1993, \$35,000 for 1994 and \$13,000 for 1995, for a total supervision cost estimate of approximately \$88,000 (inclusive of staff costs, consultant fees, travel and subsistence) according to the detailed program outlined in the matrix above. The supervising division expects at a minimum of 10 staff weeks of the specific scientific supervision work on the GIS and the Land Use Planner to be eligible for non-GEF Trust Fund support. This would leave a direct divisional supervision charge of 17 weeks for the full project, which is in line with regular GEF supervision co-efficients on an annualized basis (12 staff weeks per annum).

**CZECH REPUBLIC**  
**BIODIVERSITY PROTECTION PROJECT**  
**SUSTAINABLE DEVELOPMENT STRATEGY**

*(IUCN's Commission on Environment and Strategic Planning)*

**I. INTRODUCTION**

1. Biodiversity conservation in each of the areas depends upon the development of an ecosystems management approach which must include the development of sustainable economies in the nearby communities and ultimately throughout the region. Since each biosphere reserve is intended to be a place where decision-makers, scientists, managers, and local people work together to develop model programs to sustain ecosystems and natural resources to meet human needs, there must be an organized and disciplined approach to preparation of sustainable development strategies for the areas. Since the management of these protected areas and their adjacent lands is the responsibility of a number of agencies and jurisdictions, a means to establish this systematic cooperation is necessary if the goal of responsible ecosystems management and biodiversity conservation is to be achieved.

**II. OBJECTIVES**

2. Under the auspices of the Czech Ministry of the Environment and the Slovak Commission for the Environment, it is proposed that the Czech and Slovak MaB Committees would organize workshops in cooperation with IUCN and WWF, to develop plans for the preparation of ecosystems management and sustainable development strategies in each of the transborder areas.

3. World Wildlife Fund has played a leading role in developing policy guidelines for sustainable use of natural resources in Europe. WWF is carrying out a study of farming practices and exploring ways to help traditional farmers. In Central and Eastern Europe, WWF is examining ways of promoting land-use and agricultural policies which are not harmful for the environment. It has also helped to establish energy efficient centers in the Czech Republic and Poland to carry out research, promote joint ventures and advise Eastern European governments on more efficient energy production and use. Another current activity of WWF is to assist in the development of environmental education programs for Czech and Slovak Republics, which for many years has led the development of environmental education programs under the auspices of IUCN and WWF. This experience should be applied in this GEF project so that model programs for sustainable development can be implemented in the biosphere reserves and their support zones.

4. One compelling reason for developing these models is that in the Czech Slovak biosphere reserves, there are examples of varied and harmonious landscapes which are the result of long-established patterns of land-use. These areas contain an exceptional diversity of life which matches, or even surpasses in some cases, that of the more natural areas. These landscapes, created where stable adjustments have been made between the requirements of the human economies and natural resources,

could be of considerable value for their historical and social interest and the lessons they hold for sustainable resource use and development now and in the future. The biosphere reserves also serve as valuable reservoirs of genetic materials, e.g. crop varieties and animal breeds, associated with land-uses which have disappeared from most of the lands managed under the agricultural practices of recent times.

5. Another component of the GEF project would be international exchange, both in the transborder reserves and with other countries which have leading activities in the field of sustainable development related to protected area management. For example, the U.S. MaB Program has research projects and case studies regarding sustainable development in five U.S. biosphere reserves, so an exchange and sharing of experience is proposed. Of particular significance is the approach developed in the Southern Appalachian Biosphere Reserve and a program which focuses on local community programs, as well as an analysis of social and economic processes, land-uses, landscape dynamics, and resource effects and environmental quality impacts to compare the Southern Appalachians and the Olympic Peninsula of Washington State.

6. The approach to development of strategies for the GEF project areas is outlined below. It is adapted from an approach developed by IUCN, WWF, and UNEP, described in their publication, "Caring for the Earth -- A Strategy for Sustainable Living," Gland, Switzerland, October 1991. The approach outlines how strategies for sustainability at both national and local levels can be undertaken. More detailed guidance can be made available, as plans for the proposed workshops in the Czech Republic are prepared, by the IUCN Working Group on Strategies for Sustainability of IUCN's Commission on Environmental Strategy and Planning.

### III. COMPONENTS OF A STRATEGY

7. Successful strategies have five components in common:

- a. Identification of key issues by participants;
- b. Consultation and consensus building;
- c. Information assembly and analysis;
- d. Policy formulation; and
- e. Action planning and implementation.

8. Demonstration projects may also be undertaken so that participants can see results from the strategy while it is being developed.

#### **Identification of Key Issues**

9. The first step is to identify, from a scientific perspective, the critical or priority issues which affect ecological sustainability of the natural resources, ecosystems and habitats, and sustainable development in a particular area or region. These issues will almost always cross-sectoral and

jurisdictional boundaries, so knowledgeable people from the different sectors and jurisdictions must be included in the identification of issues from the beginning. This analysis can be a basis for discussions under "Consultation and Consensus Building," and can be expanded under "Information Assembly and Analysis." (below)

### **Consultation and Consensus Building**

10. Consensus means general agreement on a course of action.

11. This component provides a forum and process through which participants can build a consensus on the sustainable development of their region. It may include public meetings and workshops, opinion surveys, written and spoken submissions, and group discussions within communities. It is the means by which anyone concerned -- communities, government, industry, other interest groups, and individuals -- can participate in developing the strategy.

12. The aim is to find out people's knowledge, concerns, interests, and what results they would like most from the strategy. It insures that the strategy builds and reflects a consensus of all participants on:

- a. Sustainable development objectives;
- b. The issues that need to be resolved based upon the above scientific analysis, and the information required for sound decisions; and
- c. Policies, procedures and actions to achieve sustainable development.

13. It also increases the chance that all parties will implement the strategy, by enabling them to contribute effectively to it and giving them a stake in the strategies' implementation.

### **Information Assembly and Analysis**

14. Effective strategies are built on facts. This component of a strategy assembles and analyzes the information necessary for sound decisions on economic development, environmental conservation, and their integration.

15. Information is needed on:

- a. *The people.* Status and trends in population, employment, and resource use. Values and perceptions. Interactions among communities and interest groups. Common interests and compatibilities. Avoidable and unavoidable conflicts.
- b. *The economy.* Status and trends of the main income sectors, particularly the resource-based sectors (energy, timber mining, fisheries, aquaculture, tourism); their social and economic importance and potential; their sustainability, both in their own terms and in relation to other sectors; their interactions with each other; what is required to conserve their resource base (the ecosystems and natural resources they depend on).

- c. *The environment and natural resources.* Status and trends of ecosystem structure, function, and composition including biodiversity; what will be required to use these natural resources sustainably.
- d. Institutions, laws, policies and voluntary actions that will promote sustainable development.

16. The nature and scope of the issues and interests that participants decide should be covered by the strategy govern how much information is needed. This is not intended to be a major research effort, although the process should be used to identify areas where further research is needed. This should be done in close collaboration with the biosphere reserve authorities and within the context of their management plans.

### **Policy Formulation**

17. This component is developed on the basis of the information analysis, through consultation and consensus building. It sets out agreed policies that are compatible with the management plans and policies for the biosphere reserves to achieve sustainable development in the area and in particular to:

- a. Develop an economy that is sustainable and consistent with the needs and values of the biosphere reserve and the participants;
- b. Coordinate and allocate resources among economic sectors;
- c. Promote each sector's sustainable development and secure its resource base;
- d. Maintain and enhance life-support systems and biodiversity;
- e. Improve decision-making and resolve conflicts that may arise in the future, including a mechanism for making decisions in the event of an impasse; and
- f. Reduce resource waste, and achieve a level of resource consumption.

### **Action Planning and Implementation**

18. An action plan sets out how the participants will implement the agreed policies. It should be done in close cooperation with the biosphere reserve authority and the management plan for the reserve. It may be divided into two parts: strategic directions, which describe broadly what needs to be done; and specific actions to be taken over the next two years or so. The plan should contain a budget for specific actions, for it can also serve as means for generating support from various sources. The action plan should also include a procedure for monitoring and evaluating implementation and its results. It should specify the indicators which would be used in measuring environmental end points such as biodiversity, and this monitoring activity should be a priority focus of the biosphere reserve.

### **Experimental and Demonstration Projects**

19. Though there is considerable existing knowledge that can be applied in the preparation of sustainable development models, there is still a great deal to be learned to achieve this complex objective. The biosphere reserves provide ideal places to test different approaches to conserve biodiversity and achieve sustainable development in specific situations, which can then be shared through the network of reserves and other means. Both experimental and proven model sustainable development projects can demonstrate the meaning and practicality of sustainability under specific conditions. Such projects could simultaneously help define more precisely the strategies objectives, build public support for their achievement, test the feasibility and effectiveness of proposed actions, and explore practical ways of reducing conflicts and enhancing compatibilities among resource uses.

20. Demonstration projects are also a means of implementing parts of the strategy on which there is early consensus, and which can be organized and funded before preparation of the rest of the strategy is completed. Early implementation is essential to avoid the impression that the strategy is all talk and no action. Some of the early demonstration projects could be implemented inside the biosphere reserves as well as in the communities in the support zones.

### **Planning and Organization of the Biosphere Reserve Support Zone Strategies**

21. Under the auspices of the Czech Ministry for the Environment and the Slovak Commission for the Environment, and the National MaB committees, IUCN, in cooperation with WWF, should lead preparation of a general plan to develop local strategies in each biosphere reserve. This could be done in workshops in which representatives of the biosphere reserves, including those from key agencies and border countries, would participate. The purpose would be to outline the procedures and the steps necessary for the preparation of local strategies, involve all of the key participants, and begin to initiate the process. Elements of developing these coordinated strategies should include:

- a. Joint teams from the protected area and neighboring agency staffs including the state forests; and
- b. Scientific advisory groups to share current advances in conservation biology, restoration ecology, forest genetics, and wildlife biology.

22. As indicated above, more detailed guidance can be made available by IUCN as this component of the GEF project is developed.

**CZECH REPUBLIC**  
**BIODIVERSITY PROTECTION PROJECT**  
**DETAILED COST ESTIMATES**

TOTAL PROJECT COSTS <sup>a</sup>

Programs & Sub-components	Local	Foreign	Total	% Foreign Exch.	% Baseline Costs
	------(US\$000)--				
<b>A. Biodiversity Protection Program</b>					
1. Management of Key Ecosystems	492.0	78.2	570.2	13.7	27.4
2. Development of Community Support	246.0	0.0	246.0	0.0	11.8
3. Wildlife Research and Management	68.0	0.0	68.0	0.0	3.3
Sub-Total	806.0	78.2	884.2	8.8	42.5
<b>B. Conservation Program</b>					
1. Sustainable Development Strategies	72.0	8.0	80.0	10.0	3.8
2. Carrying Capacity & Rev. Mechs.	46.0	24.0	70.0	34.3	3.4
3. Demonstration Projects	110.0	0.0	110.0	0.0	5.3
Sub-Total	228.0	32.0	260.0	12.0	13.5
<b>C. Institutional Infrastructure Improvement</b>					
1. NGO Small Grants Program	100.0	0.0	100.0	0.0	4.8
2. Computer & Data Management	15.3	289.7	305.0	95.0	14.7
3. Infrastructure Improvement	330.0	0.0	330.0	0.0	15.9
4. Project Management	75.0	15.0	90.0	16.7	4.3
5. Training	19.5	90.5	110.0	82.3	5.3
Sub-Total	539.8	395.2	935.0	54.0	45.0
<b>Total BASELINE COSTS</b>	<b>1573.8</b>	<b>505.4</b>	<b>2079.2</b>	<b>24.0</b>	<b>100.0</b>
Physical Contingencies	92.2	9.0	101.2	22.4	4.9
Price Contingencies	63.0	6.7	69.7	17.8	4.5
<b>Total PROJECT COSTS</b>	<b>1729.0</b>	<b>521.1</b>	<b>2250.1 <sup>a</sup></b>	<b>23.1</b>	

<sup>a</sup> Does not include Austrian EcoFund activities.

**CZECH REPUBLIC**  
**BIODIVERSITY PROTECTION PROJECT**  
**DETAILED PROJECT COSTS**

BIODIVERSITY PROTECTION PROGRAM

Investment Costs	Base Costs in US\$ '000				Totals Including Contingencies US\$ '000			
	1993	1994	1995	Total	1993	1994	1995	Total
<b>1. Management of Key Biotypes</b>								
<b>A. Forest restoration</b>								
Purchase of Iso-enzyme Equipment	15.0	5.0	5.0	25.0	17.5	5.5	6.2	29.7
Training	10.0	15.0	10.0	35.0	13.2	16.5	11.8	41.5
Pilot Programs	5.0	10.0	5.0	20.0	5.4	11.2	6.2	22.8
Ex-situ Genetic Conservation	10.0	15.0	10.0	35.0	12.2	17.1	11.9	41.2
Maintenance of Existing Programs	5.0	25.0	5.0	35.0	5.5	28.8	6.2	40.5
Workshop	0.0	20.0	0.0	20.0	0.0	23.3	0.0	23.3
Sub-Total	45.0	90.0	35.0	170.0	53.8	102.4	42.3	198.5
<b>B. Management of Alpine Ecosystems</b>								
Traditional Practice	5.0	5.0	5.0	15.0	5.4	5.4	5.4	16.2
Mowing	5.0	10.0	6.0	21.0	5.4	10.8	6.7	22.9
Sub-Total	10.0	15.0	11.0	36.0	10.8	16.2	12.1	39.1
<b>C. Restoration of Pálava Wetlands</b>								
Engineering	8.0	25.0	6.2	39.2	8.6	28.3	7.4	44.3
Labor	100.0	100.0	100.0	300.0	105.0	105.0	105.0	315.0
Equipment	10.0	6.0	9.0	25.0	10.7	6.6	0.0	17.3
Sub-Total	118.0	131.0	115.2	364.2	124.3	139.9	112.4	376.6
<b>Sub-Total</b>	173.0	236.0	161.2	570.2	188.9	258.5	166.8	614.2
<b>2 Development of Community Support</b>								
Research & Education Center - Pálava	30.0	50.0	20.0	100.0	31.6	54.5	22.1	108.2
Interpretation Facilities - Šumava	20.0	40.0	6.0	66.0	21.1	43.5	6.6	71.2
Enhance Public Education - Krkonoše	20.0	40.0	20.0	80.0	21.1	43.3	22.4	86.8
Sub-Total	70.0	130.0	46.0	246.0	73.8	141.8	51.1	266.2
<b>3 Wildlife Research and Management</b>								
Management Program - Šumava	5.0	5.0	5.0	15.0	5.3	5.2	5.2	15.7
Research - Krkonoše	7.0	7.0	9.0	23.0	8.0	8.0	10.0	26.0
Capercaillie Breeding Program	0.0	5.0	0.0	5.0	0.0	5.5	0.0	5.5
Ex-situ Genetic Conservation	15.0	5.0	5.0	25.0	15.7	5.3	5.4	26.4
Sub-Total	27.0	22.0	19.0	68.0	29.0	24.0	20.6	73.6
<b>Total Program Costs</b>	270.0	388.0	226.2	884.2	291.7	424.3	238.5	954

**CZECH REPUBLIC**  
**BIODIVERSITY PROTECTION PROJECT**  
**DETAILED PROJECT COSTS**

**CONSERVATION PROGRAM**

Investment Costs	Base Costs in US\$ '000				Totals Including Contingencies US\$ '000			
	1993	1994	1995	Total	1993	1994	1995	Total
<b>1. Eco Strategy for Buffer Zones</b>								
Planning	20.0	10.0	0.0	30.0	21.3	10.9	0.0	32.2
Workshops	20.0	30.0	0.0	50.0	21.3	33.0	0.0	54.3
<b>Sub-Total</b>	<b>40.0</b>	<b>40.0</b>	<b>0.0</b>	<b>80.0</b>	<b>42.6</b>	<b>43.9</b>	<b>0.0</b>	<b>86.5</b>
<b>2. Carrying Capacity &amp; Revenues</b>								
Feasibility Study	25.0	5.0	0.0	30.0	26.3	5.4	0.0	31.7
Implementation	0.0	20.0	20.0	40.0	0.0	21.7	22.4	44.1
<b>Sub-Total</b>	<b>25.0</b>	<b>25.0</b>	<b>20.0</b>	<b>70.0</b>	<b>26.3</b>	<b>27.1</b>	<b>22.4</b>	<b>75.8</b>
<b>3. Demonstration Projects</b>								
Sustainable Viticulture - Pálava	10.0	40.0	10.0	60.0	10.5	43.1	10.5	64.1
Model Agricultural Programs	0.0	20.0	30.0	50.0	0.0	22.0	33.0	55.0
<b>Sub-Total</b>	<b>10.0</b>	<b>60.0</b>	<b>40.0</b>	<b>110.0</b>	<b>10.5</b>	<b>65.1</b>	<b>43.5</b>	<b>119.1</b>
<b>Total Program Costs</b>	<b>75.0</b>	<b>125.0</b>	<b>60.0</b>	<b>260.0</b>	<b>79.4</b>	<b>136.1</b>	<b>65.9</b>	<b>281.4</b>

**CZECH REPUBLIC**  
**BIODIVERSITY PROTECTION PROJECT**  
**DETAILED COST ESTIMATES**

INSTITUTIONAL INFRASTRUCTURE IMPROVEMENT PROGRAM

Investment Costs	Base Costs in US\$ '000				Totals Including Contingencies US\$ '000			
	1993	1994	1995	Total	1993	1994	1995	Total
<b>5. Training</b>								
Min. of Env. Staff Training	20.0	20.0	5.0	45.0	22.0	22.0	6.0	50.0
Min. of Agr. Staff Training	0.0	10.0	5.0	15.0	0.0	11.0	6.0	17.0
GIS & Workshops	5.0	15.0	0.0	20.0	5.8	17.0	0.0	22.8
Study Tours	15.0	15.0	0.0	30.0	17.0	16.5	0.0	33.5
Sub-Total	40.0	60.0	10.0	110.0	44.8	66.5	12.0	123.3
<b>2. Computerization &amp; Data Mgmt</b>								
Czech Republic	100.0	60.0	20.0	180.0	107.0	66.1	22.7	195.9
Šumava	30.0	5.0	0.0	35.0	32.1	5.5	0.0	37.6
Krkonoše	30.0	10.0	5.0	45.0	32.1	11.0	5.7	48.8
Pálava	30.0	10.0	5.0	45.0	32.1	11.0	5.7	48.8
Sub-Total	190.0	85.0	30.0	305.0	203.4	93.6	34.1	331.1
<b>3. Infrastructure Improvement</b>								
Pre-feasibility Studies - Šumava	20.0	0.0	0.0	20.0	21.4	0.0	0.0	21.4
Management Facilities - Šumava	100.0	60.0	0.0	160.0	107.1	66.2	0.0	173.3
Visitor Facilities - Pálava	80.0	20.0	0.0	100.0	85.6	22.1	0.0	107.7
Add Monitoring Eqpmnt - Krkonoše	40.0	10.0	0.0	50.0	42.8	11.0	0.0	53.9
Sub-Total	240.0	90.0	0.0	330.0	256.9	99.3	0.0	356.2
<b>1. NGO Small Grants Program</b>	<b>30.0</b>	<b>40.0</b>	<b>30.0</b>	<b>100.0</b>	<b>31.5</b>	<b>42.0</b>	<b>31.5</b>	<b>105.0</b>
<b>4. Project Management</b>								
PMCU	20.0	20.0	20.0	60.0	21.4	22.0	22.7	66.1
Joint Ctte - Šumava	10.0	10.0	10.0	30.0	10.7	11.0	11.3	33.0
Sub-Total	30.0	30.0	30.0	90.0	32.1	33.0	34.0	99.1
<b>Total Program Costs</b>	<b>545.0</b>	<b>310.0</b>	<b>100.0</b>	<b>935.0</b>	<b>568.7</b>	<b>334.4</b>	<b>111.6</b>	<b>1014.7</b>

CZECH REPUBLIC ◆ = Ongoing

I. BIODIVERSITY MANAGEMENT PROGRAM	3	6	9	12	15	18	21	24	27	30	33	36
<b>A. Management of Key Biotypes</b>												
<u>Restoration of forest ecosystems</u>												
- establishment of joint landscape teams												
- establishment of scientific advisory group												
- development of a joint strategy				◆								
- application of modern genetic methods			◆									
- support and implementation of pilot programs												
- equipment purchase and training					◆							
<u>Management of Alpine meadows - Krkonoše</u>												
- traditional method trials			◆									
- mowing trials			◆									
- evaluation & development of mgt. guide												
<u>Management of Wetlands - Pálava</u>												
- detailed design												
- equipment purchase												
- construction												
- monitoring and evaluation												
					◆		◆	◆	◆	◆	◆	◆





CZECH REPUBLIC												(Cont'd)
-	tortricide management											
-	purchase of materials											
-	training/seminars for farmers											
-	evaluation and publication											
	<u>Model Agriculture Programs</u>											
-	design											
-	implementation/workshops											
-	evaluation and publication											
	<b>III. INFRASTRUCTURE, INSTITUTIONAL IMPROVEMENT PROGRAM</b>											
	<b>A. Training</b>											
-	isozyme analysis											
-	GIS & Workshops											
-	study tours											

◆ = Ongoing





**THE CZECH REPUBLIC**

**BIODIVERSITY PROTECTION PROJECT**

**BIODIVERSITY SMALL GRANTS PROGRAM**

1. A modest pilot program to support small grants to Czech environmental non-government organizations (NGOs) is provided under this project. A total of \$122,500 is included for grants up to US\$7,500 to an estimated 20 to 25 Czech NGOs. The objective of this component is to foster innovative initiatives by the NGO environmental community in fostering projects throughout the Czech Republic to protect endangered biodiversity through a variety of means.
2. The grant program would be administered by the Project Management Coordination Unit. (PMCU) located in the Ministry of the Environment. An amendment of the GEF grant between the Ministry of Environment (Department of Nature Protection) and World Bank would be now required. following approval of grant criteria, approval review and administration arrangements. These proposals are detailed below for World Bank and Ministry consideration.
3. **Biodiversity Grant Review Committee.** A voluntary review committee of the Ministry be established with five persons selected. This committee would comprise a Chairman (an external Biodiversity Specialist), the Director of the Nature Protection Department of the Ministry of Environment, a biodiversity specialist from a Czech university, a biodiversity specialist from the NGO community in the Republic and an independent internationally recognized biodiversity specialist resident in the Republic.
4. This Biodiversity Small-Grants Review Committee would make its decisions and recommendations to the PMCU, would be multi-disciplinary, and would have the authority to recommend to the PMCU the final grant selections.
5. **Executive Secretary to the Biodiversity Review Committee.** The Coordinator of the PMCU of the GEF Project shall also be the Executive Secretary to the Biodiversity Grant Review Committee. The Executive Secretary shall undertake the following duties, inter alia in implementing this component:
  - a) publicize the program and solicit grant applications. Host a minimum of two training workshops around the country to brief interested NGO groups in developing an application.
  - b) respond to questions and inquiries from NGO's, local officials and the media.
  - c) as appropriate, make pre-selection site visits to interested NGO groups
  - d) process applications in a timely fashion for submission to the Review Committee for a decision.
  - e) disburse the grant funds in the two tranches specified in para.

6. **Eligibility.** Applications would only be eligible from non-government organizations registered in the Czech Republic. The applying NGO is not required to have paid staff, but must demonstrate organizational capacity to complete the proposed project. Individuals and scientific institutions would be eligible to participate in projects sponsored by an applying NGO.

7. **Grant Decision Period.** Grants would be made at least twice annually and more frequently if resources permit. Requests for grant applications would be made by circulating each NGO known to be active in the Republic as well as notices in major newspapers and by the existing electronic networks.. Applications would be due no later than 45 days from publication of notification in the local press. This procedure would occur at least semi-annually. The decision on grant awards would be made no later than 30 days from final receipt of grant requests.

8. **Approval Criteria.** In approving these biodiversity protection grants for NGO implementation, consideration would be given to the following criteria:

- a) diversity of funding sources
- b) technical expertise required for project
- c) organizational capacity to execute proposed project
- d) previous environmental and biodiversity history of NGO organization
- e) extent of public participation planned in carrying out the grant.

Sustainable development projects must be practical and relate clearly to the biodiversity objectives of conservation. Any proposed scientific research must be applied.

9. Successful applications would:

- a) address near-term threats or needs
- b) be innovative in approach or design
- c) address problems of local, regional, national or transboundary importance
- d) contribute significantly to the conservation of biodiversity

10. **Priority** would be given to projects which are practical in approach (direct conservation actions in a locale); restore or link endangered habitats; demonstrate a high degree of public participation and work to build public awareness; and finally, involve local citizens and villages.

11. **Application.** The formal proposal (not to exceed 10 pages of main text and no greater than 15 pages of supporting documentation), in English, should include the following:

- Project title, amount of request, start and end dates (half page)

- Summary of proposed project (one page or less)
- Statement of Biodiversity Issue or Problem being addressed (two pages)
- Proposed Project Objectives, Detailed Features and timing of project (Four pages)
- Detailed Budget (2 pages)
- Supporting Documents (not to exceed 15 pages)

**12. Grant Disbursements**

Each successful grant shall be disbursed in two tranches, 50% at grant acceptance and 50% at the mid-point of the grant progress

**13. Grant Period**

Grants will be made for a period of 12 months or less.

**14. Monitoring and Reporting**

At the completion of the project, the receiving NGO shall provide a report to the Executive Secretary, who will then provide it to the Review Committee on the results of the project, its successes and failures and a full accounting of how the funding was utilized. The Executive Secretary to the Review Committee shall visit each grant receiving NGO at two points, first prior to disbursing the second tranche grant at grant implementation mid-point and at the completion of the grant, to review the completion report by the NGO and to develop a summary report on each biodiversity grant recipient to collate and forward to the Ministry of Environment and the GEF.