

11738-SK

**Slovak Republic**  
**Biodiversity Protection Project**

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Project Document  
June 1994



THE WORLD BANK

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**THE WORLD BANK**  
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Report No. 11738-SK

**GLOBAL ENVIRONMENT FACILITY**

**MEMORANDUM AND RECOMMENDATION**  
**OF THE DIRECTOR**  
**OF COUNTRY DEPARTMENT II**  
**OF THE EUROPE AND CENTRAL ASIA REGION**  
**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 1.7 MILLION (USD 2.3 MILLION)**  
**TO THE**  
**SLOVAK REPUBLIC**  
**FOR A**  
**BIODIVERSITY PROTECTION PROJECT**

June 15, 1994

## WEIGHTS AND MEASURES

The metric system is used throughout this report.

## EXCHANGE RATE

Slovak Koruna 32.70 = US\$1 (November 1993)

## FISCAL YEAR

January 1 to December 31

## GLOSSARY OF ABBREVIATIONS

<b>BSP</b>	-	Biodiversity Support Program (of USAID)
<b>DNLC</b>	-	Department of Nature and Landscape Conservation
<b>ECU</b>	-	European Currency Unit
<b>EU</b>	-	European Union
<b>EuroMaB</b>	-	European Secretariat of Man and the Biosphere Program
<b>FECBC</b>	-	Foundation for Eastern Carpathian Biodiversity Conservation
<b>GDP</b>	-	Gross Domestic Product
<b>GEF</b>	-	Global Environment Facility
<b>GET</b>	-	Global Environment Trust Fund
<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>MLM</b>	-	Ministry of Land Management
<b>NGO</b>	-	Non-Government Organization
<b>PMCU</b>	-	Project Management Coordinating Unit
<b>RAMSAR</b>	-	Convention of Wetlands of International Importance
<b>SME</b>	-	Slovak Republic Ministry of Environment
<b>SOE</b>	-	Statement of Expenditure
<b>SZOPK</b>	-	Slovak Union of Nature and Landscape Protectors
<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>WWF</b>	-	World Wildlife Fund/World Wide Fund for Nature

**SLOVAK REPUBLIC**  
**BIODIVERSITY PROTECTION PROJECT FOR**

**GRANT AND PROJECT SUMMARY**

**Grantee:** Global Environment Trust Fund

**Beneficiary:** Slovak Republic

**Total Project Cost:** US\$3.170 million

**GRANT:** GEF US\$2.300 million

**OTHER:** MacArthur Foundation US\$0.310 million

Slovak Government US\$0.060 million

Austrian Ecofund (Morava) US\$0.500 million

**Terms:** Grant from Global Environment Trust

**Onlending:** Not applicable

**Financing Plan:**

Source	Local	Foreign	Total
	(US\$ Million)		
GEF Grant	0.000	2.300	2.300
MacArthur Foundation	0.000	0.310	0.310
Austrian Ecofund	0.000	0.500	0.500
Slovak Government	0.060	0.000	0.060
<b>TOTAL</b>	<b>0.060</b>	<b>2.110</b>	<b>3.170</b>

**Economic Rate of**

**Return:** Not calculated, though substantial environmental benefits are expected.

**Staff Technical**

**Report:** Report No. 11738-SK

<b>MAPS:</b>	1. Global Environment Facility: Biodiversity Project Areas	<b>IBRD 24594R</b>
	2. GEF Biodiversity Projects: East Carpathian Biosphere Reserves	<b>IBRD 23938R1</b>
	3. GEF Biodiversity Project: Tatras Biosphere Reserve	<b>IBRD 24050R</b>
	4. GEF Biodiversity Projects: Palava/Morava	<b>IBRD 23939 R</b>



**SLOVAK REPUBLIC  
BIODIVERSITY PROTECTION PROJECT**

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*Background*

1. Three priority zones (Eastern Carpathians, Tatras and Morava) of threatened biodiversity have been identified in the Republic, each along borders with neighboring countries. Collectively the areas contain a diversity of plant and animal species within a variety of ecosystems that are important examples of evolutionary processes for Eastern Europe.
2. The areas are theoretically protected at this time as national parks, nature reserves or landscape protected areas, but they are being degraded through pollution, overuse by visitors and complex impacts from adjacent land uses. Although the threat from air pollution is expected to diminish with economic reconstruction, visitor pressures are likely 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.
3. The Slovak Eastern Carpathians National Park will be established with the passage of new legislation on nature protection. More importantly it is one of three areas of an International Biosphere reserve where management is to be coordinated between three countries. As well the first ever tri-national Trust will be established to maintain the trans-boundary co-ordination as part of this project.
4. The Slovak Tatra National Park, contiguous with the national park in Poland, is a forested mountain system with high visitation, alpine and sub-alpine vegetation and sites of specific biodiversity in the alpine meadows. These meadows are species rich, sites for endemic plants and are particularly important as an ecotone<sup>1</sup> where they adjoin the forest.
5. The Morava floodplains (part of which are in a landscape protected area) in the Slovak Republic contain wetlands of international importance remaining as a result of military border controls up until 1990. Recent ad hoc development and agricultural intrusions mean these areas are at threat and immediate action is required to protect the wetlands and isolated remnant floodplain forests.

*Rationale for GEF Involvement*

6. The proposed Slovak biodiversity protection is innovative, addresses the protection of three threatened areas internationally significant biodiversity and foster demonstration programs and models for biodiversity protection for use throughout the region.
7. 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. The project would provide the government with urgently needed support to protect the biodiversity of the Tatras, Morava and Eastern Carpathian areas.
8. The project also provides a continuation of the necessary interventions required in the region from already approved GEF projects, as well as addressing specific problems such as privatization in the project

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1/ A transition zone between distinct ecosystems.

planning components. These will have utility and applicability to other countries facing similar issues. The establishment of the first tri-national Trust as an on-going mechanism for support is a particular innovation as well as a small grants program to environmental NGOs which will be contrasted to a different approach in the related Czech Republic GEF project.

9. Another common problem in the region addressed by the project will be the identification of the carrying capacity of particular ecosystems and the mechanisms, economic and otherwise, to maintain visitation at or below this determined carrying capacity. The solutions and approaches developed here will be of considerable benefit for protected area managers and dependant communities. The transmission of the results of this project will be aided by the fact that the selected areas adjoin protected areas in neighboring countries. This will enable extension of any of the successful approaches undertaken in the project to be adopted throughout the ecosystem and easily adopted by the neighboring country.

#### *Project Objective*

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

- a. Foster systems of financially sustainable biodiversity protection in the Slovak Republic through the introduction of user fees, related charges for visitors and concessions to manage the areas within their determined "carrying capacities;" and to evaluate the role that economic mechanisms might play in keeping visitation to levels below identified carrying capacities;
- b. Establish a three country mechanism (Ukraine, Poland and the Slovak Republics) through the development of an International Trust for the Biodiversity Protection of the Eastern Carpathians whose income would be used to protect the biodiversity in this transboundary area;
- c. Protect three zones of representative threatened ecosystems: alpine meadows (Tatras), wetlands (Morava Floodplain), and mountain forests (Eastern Carpathians);
- d. Support the activities of three *transnational* biodiversity protection networks: Eastern Carpathians Biosphere Reserve (Poland, the Slovak Republic and Ukraine); the Tatra Biospher Reserves (Poland and the Slovak Republic); and the Morava Floodplain Forests and Wetlands (Slovak and Czech Republics and Austria); and
- e. Develop a conservation program to address priority issues such as privatization.

#### *Project Description*

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

- a. A **Biodiversity Protection Program** to initiate a range of activities including the development of management techniques for key biotypes (forest, wetlands and alpine meadows), the development of community support for the reserve system and particularly for the sustainable management of contiguous forest systems adjacent to the protected areas,



specific *ex-situ* conservation measures where ecosystem protection and restoration are unlikely to be successful and biodiversity research and management;

- b. **A Conservation Program** to develop revenue generation mechanisms for the protected area system, will examine the feasibility of using economic mechanisms to manage the level of visitation, will foster interactions with local communities and land management and uses in the adjacent forest systems; and will 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** to provide support for project management coordination at the national level and at the three selected zones, for professional development and training, for a small grants program for environmental the Slovak Republic NGOs and particularly support for the new Foundation for Eastern Carpathian Biodiversity Conservation (FECBC) in the Slovak Republic, Poland and Ukraine.

#### *Actions to be Agreed*

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

- a. **International Joint Scientific Committees** The Ministry of Environment shall establish International Joint Scientific Committees no later than October 31, 1993. This would include the completion of administrative scientific linkages for the joint Palava/Morava area with the Czech Republic and Austria, as well as for the activities in the Carpathians with Ukraine and Poland and the activities between Poland and the Slovak Republic in the Tatras.
- b. **Grant Effectiveness** The Grant would be declared effective upon submission of documentation satisfactory to the Bank that the Project Manager has been appointed and the Project Management Coordinating Unit established in the Ministry for Environment.
- c. **Accounts.** A special account would be established in a commercial bank for the project prior to disbursement of the grant. This account would be audited annually by an auditing firm acceptable to the Bank.
- d. **Tatras Administration** Project activities at the Tatras National Park will be under the direct administration of the Ministry of Land Management (MLM), Forestry Section. Financial and administrative arrangements between the SME and the MLM for these activities would be effected. No disbursements will be authorized for this component of the Project until these arrangements have been approved by the Bank.

#### *Benefits*

13. The principal benefits are to protect ecological zones of substantial international importance. The Eastern Carpathians forest in Poland, Ukraine and in the adjoining Slovak are unique in Europe and a source of endemic biodiversity. The Morava floodplains and the forests and alpine meadows of the Tatras have many endemic and representative species and habitats of the regions ecosystems. All three areas are at threat and the project will initiate programs to protect and restore these systems.

14. Innovation is fostered by the integration of the various levels of biological diversity to address issues in conservation planning, by the unique (for the Slovak Republic) collaboration of groups from a variety of interests in addition to foresters in issues of forest planning and management, for the balancing of *ex-situ* with *in-situ*<sup>2</sup> 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.

15. The Project is designed to foster biodiversity, institutional and financial sustainability. The long-term viability is achieved through the strengthening of environmental institutions within the Slovak Republic, including those responsible for the management of the national parks and 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 user fees, concessions and leasing arrangements and the establishment of the new FECBC would also support the long term sustainability of these investment efforts. They include compatible 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.

16. The project will also be a catalyst for the establishment of a Trust for recurrent funding needs of the Carpathians 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.

17. There is a demonstration value and replicability through the use of integrated planning and new technologies and the establishment of bilateral and trilateral organizational structures which foster international resource management approaches. As a test of this approach to regional issues in biodiversity, the Project can have significant demonstration value.

#### *Risks*

18. Although there are no major risks, implementation could be affected by some institutional weaknesses at the level of the Department of Nature Protection and Landscape of the SME and instability in sustainable forest practices whereby *ad hoc* localized forest utilization decision are taken without consideration of the long-term maintenance of forest ecosystems and their relationship to adjacent protected areas.

19. There are also some institutional risks in that legislation and administrative arrangements are not complete after the recent establishment of the Slovak 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.

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2/ *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).

*Environmental Assessment*

20. The proposed activity will have a positive environmental impact by directly improving the management and protection of the three selected areas. 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. As this project has no significant negative environmental impact it has been reviewed by the Regional Environment Division and has been placed in the environment screening category "C".

21. Monitoring and evaluation are built into the terms of reference for the Project Management who will be reporting on a quarterly basis. There are built-in quality control and monitoring elements because of the research which will be published in peer-reviewed journals of international quality. The international Joint Scientific Review Committees will review the Project and its progress on a semi-annual basis.

September 16, 1993  
Washington, D.C.

Attachments

**SLOVAK REPUBLIC**  
**BIODIVERSITY PROTECTION PROJECT**

**PROJECT COSTS ESTIMATES**  
(US\$ Thousands)

Investment Costs	Local	Foreign	Total <sup>a</sup>	%Foreign	%Total
	------(US\$ '000)-----				
<b>A. Biodiversity Protection Program</b>					
1. Biodiversity Management	479.2	42.5	521.7	8.1	20.9
2. Planning	54.0	6.0	60.0	10.0	2.4
3. Applied Research	13.3	67.3	80.6	83.5	3.2
4. Training and Prof. Dev.	17.5	50.0	67.5	74.1	2.7
Sub-Total	564.0	165.8	729.8	44.0	29.1
<b>B. Conservation Program</b>					
1. Buffer Zone Strategies	76.5	13.5	90.0	15.0	3.6
2. C. Capacity & Rev. Mechs. & Demonstration	163.0	7.0	170.0	0.0	2.8
4. Tri-National Foundation	0.0	610.0	610.0 <sup>b</sup>	100.0	25.0
Sub-Total	239.5	630.5	870.0	72.9	35.4
<b>C. Institution and Infrastructure</b>					
1. Protected Area Facilities	202.3	22.5	224.8	10.0	9.0
2. Comp. & Data Management	87.0	348.0	435.0	80.0	17.4
3. Joint Scientific Advisory Committ	0.0	45.0	45.0	100.0	1.8
4. Project Management	60.0	30.0	90.0	33.3	3.6
5. NGO Small Grants Program	91.0	0.0	91.0	0.0	3.6
Sub-Total	440.3	445.8	885.8	50.3	35.4
<b>Total BASELINE COSTS</b>	1243.8	1256.8	2485.6	50.3	100.0
Physical Contingencies	62.2	31.6	93.8	33.6	3.7
Price Contingencies	64.8	24.8	89.6	27.7	3.5
<b>Total PROJECT COSTS</b>	1370.8	1313.2	2670.0 <sup>a</sup>	48.9	107.0

<sup>a</sup> Total amount does not include complementary Austrian EcoFund activities (US\$0.5 million).

<sup>b</sup> Includes US\$10,000 from the MacArthur Foundation for preparation of Trust Agreement.

**SCHEDULE B**

**ESTIMATED SCHEDULE OF DISBURSEMENTS OF GEF GRANT**

**PROCUREMENT ARRANGEMENTS**  
(US\$ Thousands)

Items	Procurement Method		
	ICB	Other	Total
(1) Civil Works	—	200 <sup>a</sup>	200
	—	(200)	(200)
(2) Goods and Equipment	—	850.0 <sup>b</sup>	850.0
	—	(600.0)	(600.0)
(3) Technical Assistance	—	870.0 <sup>c</sup>	870.0
	—	(800.0)	(800.0)
(4) Salaries, Operations and Maintenance	—	1,250.0	1,250.0
	—	(700.0) <sup>d</sup>	(700.0)
<b>TOTAL</b>	<b>-</b>	<b>3,170</b> <b>(2,300)</b>	<b>3,170</b> <b>(2,300)</b>

NOTE: Figures in parenthesis are GEF Grant

a/ Civil works will be procured through local shopping.

b/ Includes International Shopping (US\$200,000), Local Shopping (US\$200,000) and Direct Purchase (\$US200,000).

c/ Includes professional development training, planning and the conservation program (US\$800,000) to be procured under Bank's consultant guidelines.

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

**DISBURSEMENT GEF GRANT**

Items	Disbursement	
	Amount (US\$ million)	% Financing
(1) Civil Works	0.2	100 %
(2) Goods and Equipment	0.5	100 %
(3) Technical Assistance	0.7	100 %
(5) Salaries, Operations & Maintenance	0.6	100 %
(6) Unallocated	0.3	
<b>TOTAL</b>	<b>2.3</b>	

**SCHEDULE B**

(continued)

**ESTIMATED IBRD DISBURSEMENTS (GEF GRANT)**

	<b>IBRD FISCAL YEAR</b>		
	<b>1994</b>	<b>1995</b>	<b>1996</b>
<b>Annual</b>	0.5	1.0	0.8
<b>Cumulative</b>	0.5	1.5	2.3

**Closing Date: December 31, 1996**

**SCHEDULE C**

**TIMETABLE OF KEY PROJECT PROCESSING EVENTS**

- (a) Time Taken to Prepare . . . . . 16 months
- (b) Prepared by Ministry of the Environment with Bank Assistance
- (c) First Bank Mission . . . . . April, 1992
- (d) Appraisal Mission Departure . . . . . To be determined
- (e) Negotiations . . . . . September, 1993
- (f) Planned Date of Effectiveness . . . . . October, 1993
- (g) List of Relevant PCRs and PPARS . . . . . None

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**Report No. 11738-SK**

**GLOBAL ENVIRONMENT FACILITY**

**SLOVAK REPUBLIC**  
**BIODIVERSITY PROTECTION PROJECT**

**TECHNICAL REPORT**

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

**June 15, 1994**

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

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# SLOVAK REPUBLIC

## BIODIVERSITY PROTECTION PROJECT FOR

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	4. GEF Biodiversity Projects: Palava/Morava	<b>IBRD 23939</b>



# SLOVAK REPUBLIC

## BIODIVERSITY PROTECTION PROJECT

### TECHNICAL REPORT

## I. BIODIVERSITY AND THE ENVIRONMENT

### A. COUNTRY OVERVIEW

1.1 The project is to assist the Slovak Republic's effort to conserve its significant variety of ecosystems and the plant and animal species they contain. The need to establish and develop a network of reserves and protected areas nationally and internationally encompassing representative natural areas for biodiversity conservation has long been recognized. This project contributes to the on-going international effort to conserve biodiversity *in-situ* (on site) through strengthening a network of specific border reserves which share representative ecosystems with the neighboring countries of Poland, Ukraine, Austria and the Czech Republic. This *in-situ*<sup>1</sup> conservation is the most practical way to conserve a variety of ecosystems, species and genes. For most of the areas participating in this GEF project, however, *ex-situ* (off site) conservation has been planned to compliment *in-situ* methods for maximum security, particularly where species populations are low and are unlikely to be viable in-situ at the current level of threat. This biodiversity (see Box 1) project also deals with variable and complex land use problems which impact on the protected areas, and it will initiate innovative approaches suited to the different ecological and socio-economic situations in each region of the country. The focus will be on conducting integrated conservation and sustainable development (see Box 2) activities in three transborder areas (Morava, Tatras and East Carpathians - see Map 1).

1.3 Two of these areas are a part of an international network of biosphere reserves. Biosphere reserves are designated under an international scientific program conducted by UNESCO for a range of objectives which include research, monitoring, training and demonstration, as well as conservation. Zoning is used to define the biosphere reserve (see Figure 1) 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. Biosphere reserves are nominated by the national MaB committee of the country concerned,

#### 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 Slovak Republic and in most of Central and Eastern Europe.

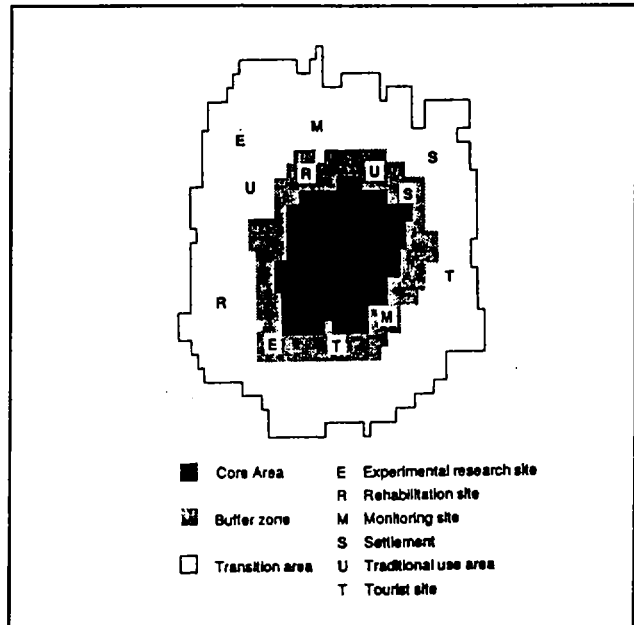
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<sup>1/</sup> *In-situ* conservation keeps components of biodiversity within their original habitat or natural environment as a part of their evolutionary dynamic ecosystem, whereas *ex-situ* conservation keeps them alive outside their original habitat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

and are only designated following review and acceptance by the UNESCO MaB Bureau. Criteria for the designation include the history of scientific studies (giving base line information), an active scientific research/monitoring program and infrastructure, as well as an active educational outreach program to involve the surrounding community in understanding the biosphere.

1.4 The project will provide institutional support to the Slovak Ministry of Environment (SME) and it will link with two other GEF biodiversity protection projects in neighboring countries: the Transcarpathian Biodiversity Protection Project for Ukraine in the Eastern Carpathians and a Biodiversity Protection Project for the Czech Republic.

Figure 1. A Model Biosphere Reserve



1.5 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. This 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. These solutions cannot be achieved without such interactive involvement.

1.6 Among the innovative components of the project will be the development of mechanisms to increase the economic benefits to local populations in the transition and buffer zones from the protected ecosystems. These include planning and development of appropriate tourism in different types of ecosystems and socio-economic situations, and the generation of revenues through various means, such as visitor fees, 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, as these practices can and are having major impacts on the neighboring protected areas. This would be

### 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.

as these practices can and are having major impacts on the neighboring protected areas. This would be

carried out with the assistance of organizations such as WWF and IUCN, and managers from the private forest sector which have developed similar innovative approaches in Eastern Europe.

## B. NATURAL RESOURCE MANAGEMENT AND PROTECTION

### **Biological Diversity**

1.7 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 the East Carpathians and the Tatras 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.

1.8 Approximately 3,500 vascular plant species are found in the former Czechoslovakia<sup>2</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.

1.9 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 meadows (poloniny) of the East Carpathians have developed endemic 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.

1.10 This biological diversity, however, is seriously threatened. Many species have disappeared due to habitat degradation and destruction. Degradation has occurred because of improper agricultural and forestry practices, major engineering works, industry (and attendant problems such as air, water, and soil pollution), channelization of streams, drainage of wetlands, and soil erosion. The result has been serious damage or destruction of many ecosystems and habitats.

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<sup>2/</sup> Figures are not presently available for the Slovak Republic alone as they are still quoted for the former Czechoslovakia, but are believed to be of the same order of magnitude.

1.11 Tables 1 and 2 detail the endangered and threatened flora and fauna of the Slovak 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 1a. Threatened Vascular Plants in the Slovak Republic**

Extinct	Missing	Critically Threatened	Strongly Threatened	Threatened	Not common, further study required	TOTAL
9 0.4%	29 1.2%	327 13%	261 10%	305 12%	378 15%	1,309 52%

Source: Maglocky 1983.

**Table 1b. Threatened Vertebrates in Slovak Republic**

Cyclostomata	Fish	Amphibian	Reptiles	Birds	Mammal	TOTAL
2	28	18	10	113	51	246

Source: Trpak in Cerovsky, Petricek, Trpak, Damohorsky 1988.

1.12 The forests of the Slovak Republic are important from an environmental conservation perspective. Approximately 25 percent of the woodland in the Slovak 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 impact 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.

1.13 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. Therefore the maintenance of environmental balance and ecological stability have now 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 Slovak Republic has been declared as "forests of special determination" with an emphasis on their environmental and social benefits.

1.14 The Slovak Republic and its 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 Slovak Republic with the urgently needed additional funds to initiate the development of conservation and sustainable development models in the target transboundary areas. These areas are particularly important as they have been conserved by the previous border and military restrictions which very effectively protected these areas. These constraints have now been released and such internationally important natural ecosystems are no longer well represented in western Europe.

1.15 *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 and ex-situ cultivation. 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-operative 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 evaluate these measures 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. Transmission of the evaluation of the project will be a complimentary activity. It will not only include the publication of research results but will also be conducted within the existing EuroMaB organization and international associations such as the Carpathians National Park Association.

### **Institutional Setting and Legislative Framework**

1.16 Prior to the development of the Slovak Republic, individual State Nature Conservancy Acts of the 1950s 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 and these laws are still in place. A specific law for nature protection applicable throughout the new state of the Slovak Republic has been drafted and is awaiting approval in the near future. As yet unresolved is the question of the return of land to former private owners (under the Restitution Law) which might result in the introduction of incompatible land uses in the present parks and reserves. 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. Owners that are successful with a claim for ownership are to be compensated where their land is included in a protected area, but as yet the method and amount of this compensation has not been determined. Additionally if the landholder allows public access they are entitled to be exempt from land taxes. The impact of such measures is not clear at this time and will only be of significance in forested areas where timber values might be high, if harvesting was ever allowed.

Nonetheless, this confusion, possible lack of control and potential financial burden is of great concern to the Department of Nature and Landscape Conservation.

1.17 Protected areas are declared according to the State Nature Conservation Act by the Slovak Ministry of Environment (SME), with the exception of national parks which have to be specially enacted by the government of the republic. Protected nature monuments and protected natural features are declared by district councils. (Annex 1 provides a listing of the selected protected areas in the Slovak Republic.)

1.18 *International Activities.* The Convention on Wetlands of International Importance especially as Waterfowl Habitat (see Box 3) was acceded to on 2 July 1990 by the then government of Czechoslovakia and included seven sites in the Slovak Republic, one of which is included in the project areas. The Slovak Republic has since acceded to the convention in it's own right. Four Slovak Republic sites have been accepted as biosphere reserves by UNESCO under Man and the Biosphere Program (MaB). The two most recently established sites (Tatras and Eastern Carpathians) are supported under this project because of their linkage to protected areas in adjacent countries.

### **Box 3 Ramsar Convention**

This Convention provides a framework for international cooperation for the conservation of wetland habitats. It places general obligations on contracting party states relating to the conservation of wetlands throughout their territories, with special obligations pertaining to those wetlands which have been designated to the List of Wetlands of International Importance. Each State Party is obliged to list at least one site. Wetlands are defined by the convention as: areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine waters, the depth of which at low tide does not exceed six meters.

### **Sectoral Issues**

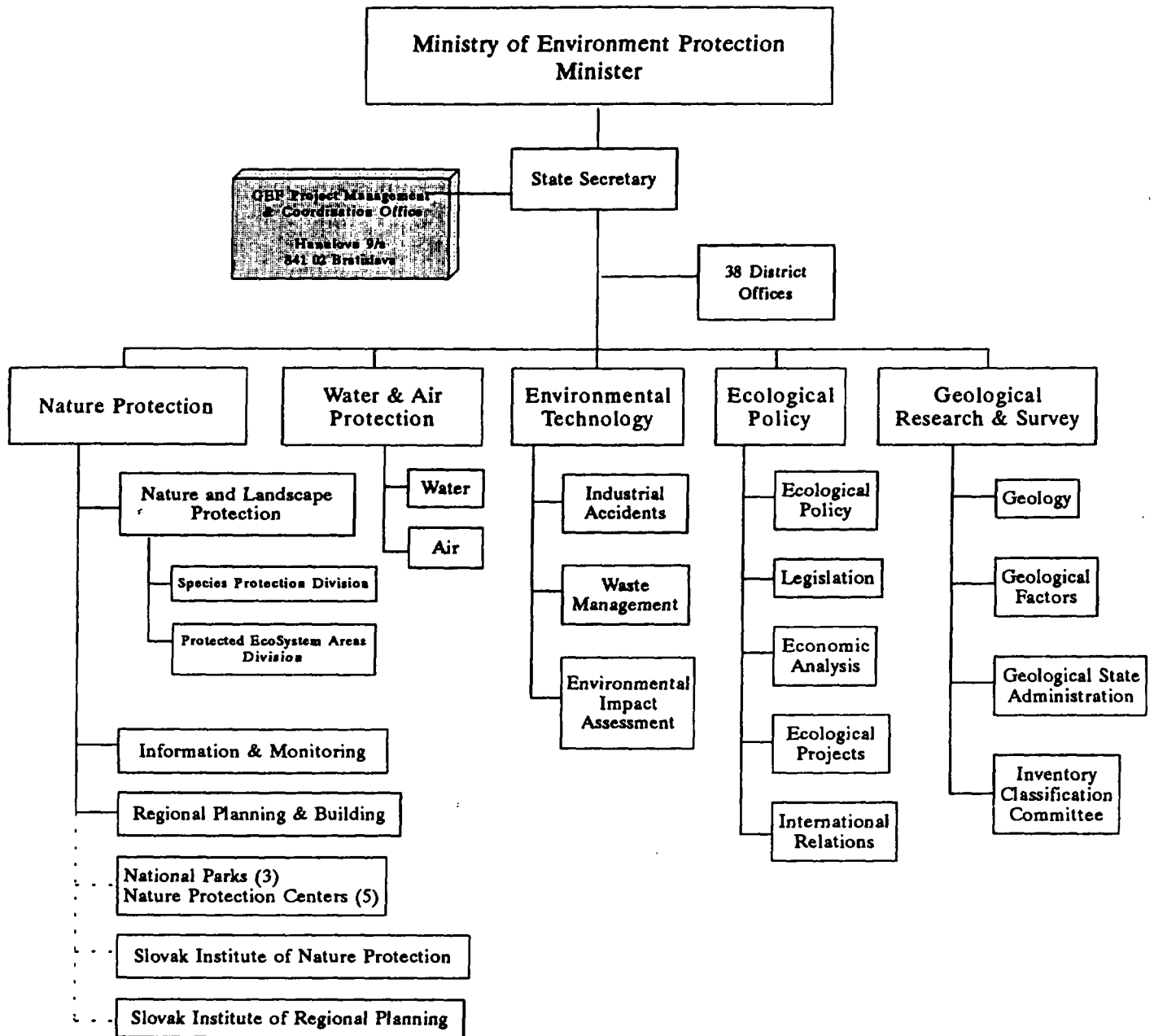
1.19 *Administration and Management* The Ministry of Environment is the central authority for management of the environment, as well as for coordination and control of the environmental functions of other ministries. It is responsible for water, air and nature protection as well as land protection aspects of agriculture and forestry and mineral resource protection.

1.20 From 1993 a Slovak Agency for Environment (*Slovenská agentúra životného prostredia*) was established. It is now been placed in the organizational structure of the Ministry of Environment managed by the Department of Nature and Landscape Protection (see Figure 2). The main aim of the Agency in the field of nature conservation is to advise on the selection, management and use of protected natural areas. It assists with wide-ranging research on threats to protected areas, monitoring, basic inventory work for each protected area and prepares management plans and "methodologies" on monitoring and management issues. It prepares detailed zoning, ecological information and recommendations for each protected area suitable for use in management planning.

1.21 An education center at Gbelany has been established as an in-service training center. The total number employed in protected areas management and administration are some 1,400 (including foresters from the Tatransky National Park) in the Slovak Republic.



Figure 2. Organizational structure of the Slovak Ministry of Environment



1.22 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 Slovak Ministry of the Environment. The exceptions are the Tatras and Pieniny National Parks which are subordinate to the Ministry of Land Management, Forestry Section.

1.23 Protected landscape areas (CHKOs) are administered by Slovak Agency for Environment (Figure 2). Each protected landscape area has 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 Slovak Academy of Science or by the Slovak Agency for Environment.

1.24 In 1991 in the Slovak Republic, national parks received SK 67 million and protected landscape areas received SK 6 million.

1.25 In 1958, the National Museum Society, the first non-governmental nature conservation organization was founded but later disbanded and subsequently replaced in 1969 by the Slovak Union of Nature and Landscape Protectors (*Slovenský zväz ochrancov prírody a krajiny*) (SZOPK). Membership is open to individuals, local groups, youth organizations and collective members. These groups often take responsibility for the management of nature reserves and monuments.

1.26 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. These frameworks, as they relate to the Slovak Republic, are being adapted to the new political situation and a national conservation strategy is also being prepared.

1.27 *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 Slovak republic, one university offers courses on "Protection of the Natural Environment." There is a conservation training center established at Gbelany near Zilina. 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

1.28 This will be the first World Bank environmental operation in the Slovak Republic and as such there are no direct lessons from previous efforts. Nonetheless, a number of the GEF biodiversity projects elsewhere in the region have been initiated, are at advanced stages of preparation or approved. These GEF projects were purposely designed to 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. Relationships with surrounding communities need to be fostered through participation in planning and management and the development of sustainable land uses for biodiversity adjacent to the national parks and protected areas;
- b. Co-ordination with other countries is needed since wildlife and pollutants do not respect political boundaries, and management systems need to be applied over complete ecosystems; and

- c. Managers, administrators and local communities need professional development to enable them to effectively develop 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 The Slovak 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.

2.2 In 1989, important cooperative efforts were greatly stimulated by the Initiative, "Ecological Bricks for Our Common House of Europe," which was coordinated by the WWF-Austria and supported by a large group of European NGOs. The Initiative identified 24 internationally significant areas in Europe in need of protection following the removal of border restrictions and requiring international coordination for successful biodiversity protection. The sites chosen for this GEF project are among those areas.

2.3 The proposed Slovak biodiversity protection project has several innovations to protect the endangered ecosystems in the selected zones:

- a. Each of the proposed ecosystem reserve zones in the Slovak project are in transboundary areas. Transboundary integrated conservation approaches would be established over strictly protected cross border areas. Development of a coordinated protection strategy involving five impacted countries, the Slovak Republic, Poland, Ukraine, the Czech Republic 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 three-country biodiversity protection trust to be organized under a GEF supported project (the Foundation for Eastern Carpathian Biodiversity Conservation, FECBC);
- c. The project proposes to examine the opportunities for direct economic measures to maintain visitation levels below the carrying capacity of the resource.
- d. 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 FECBC (the MacArthur Foundation of Chicago has indicated their interest in matching the GEF allocation); and

2.4 The project will complement other activities such as a Bank-financed forestry development loan (3641-POL) and GEF-supported protection activities (Poland in the Tatras and Bieszczady National Parks, in Ukraine Carpathians Biosphere Reserve and with the Czech and Austrian Republics in the

Morava floodplain) all of which about the Slovak Republic reserves proposed for support under this GEF project.

2.5 This project shows many features with one supported by the GEF in the Czech Republic as both projects were designed for the former Czechoslovakia and many of the issues and approaches were by necessity quite similar. Given this background, opportunities will be taken to maximize the sharing of information and experience between project managers in each of the Republics.

## B. PROJECT AREAS

2.6 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 management agencies. The MaB framework among others will be used as a mechanism for this communication. 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.

2.7 A detailed description of each of the three areas (Morava, East Carpathians and the Tatras) can be found in the Annexes. They are discussed in summary below.

### **Tatras**

2.8 *Location.* The Tatras which is part of the Western Carpathians Mountain system, is located in the north of the Slovak Republic along the border with Poland (see Map 2).

2.9 *Key Characteristics.* The Tatras are the highest mountain range in the Slovak Republic, with 20 peaks rising to more than 2,500 meters above sea level, and more than 100 lakes of glacial origin. The Tatra National Park is administered by the MLM Forestry Section, which also administers the nearby Pieniny National Park. Pieniny National Park is located to the east of the Tatras, along the Dunajec River which forms the Slovak Polish border. This spectacular, biologically diverse mountain and canyon area, was the first bilateral protected area in Europe.

2.10 The flora of the Tatras National Park contains more than 1300 species of vascular plants and Pieniny National Park has about 1,100 vascular plant-species. Both areas contain many rare and endemic plants. Wildcat and lynx, brown bear and wolf are still found in the natural mixed fir-beech forests. Chamois and marmots are also present in the Tatras.

2.11 While the Tatra National Park has high biodiversity, its history of research and management can make a significant contribution to the network of protected areas, especially in the Carpathian Mountains. The Association of Carpathian National Parks (which is a network of parks in the Carpathian region of Slovakia, Poland, Ukraine and Hungary) is located here. The information and examples that the Tatras can provide to the development of model conservation programs in these areas is considerable. An important objective of the GEF project would be to strengthen the research and monitoring program, and the analysis and presentation of data, so that the area can further develop its role as an international center.

2.12 As one of the principal developing destinations for tourism in Eastern Europe, the Tatras offer unique opportunities to evaluate critical issues like carrying capacity and restoration.

2.13 *Principal Issues.* The most significant negative impacts on biodiversity in the Tatras are the result of air pollution, and inadequately planned and controlled development, especially for tourism and recreation such as skiing. There are also negative effects from agricultural and forestry activities.

### **East Carpathians**

2.14 *Location.* The Eastern Carpathians is located in northeastern Slovakian bordering Poland and Ukraine (see Map 3).

2.15 *Key Characteristics.* The Eastern Carpathian is especially significant because it is one of the least disturbed areas in Slovak Republic. Large forests cover two thirds of the area and there are stands of primeval beech and associations of mixed beech and fir. There are also extensive mountain grassy meadows. These different vegetation types provide habitats for a large diversity of species as well as for several rare and endemic species. The area also has one of the largest populations of wolves *Canis lupus* still sighted in Europe. Lynx and brown bear *Ursus arctos* populations are also significant, and occasionally European bison *Bison bonasus* migrate into the area from Poland. These species have a great appeal to the general public. This popularity, and the ease with which any measures for their conservation can be publicized, provide a ready means to convey broader conservation issues.

2.16 Significant progress has been made toward international cooperation to conserve the Eastern Carpathians through an international declaration signed in September 1991 by the environment ministers of the Slovak Republic, Ukraine and Poland. This declaration provides for cooperative and coordinated activities by the three nations to manage and protect more than 163,000 ha of the Eastern Carpathians as an international biosphere reserve and establishes a tri-national biosphere reserve Coordinating Committee. The Protocol agreement also establishes the basis for this co-ordination as it calls for:

- a. Zoning of the area according to UNESCO MaB biosphere reserve principles and promotion of activities in the transition and buffer zones which do not create;
- b. Promoting and ensuring cooperative scientific research and management for the protection and restoration of the Eastern Carpathian ecosystems; and
- c. Organizing uniform bio-monitoring and protection of migratory animal species.

2.17 To assist in promoting and ensuring cooperative efforts to manage and conserve the biodiversity of the Eastern Carpathian ecosystems called for in the declaration, a GEF biodiversity project has been designed to provide assistance to the Ukraine to carry out its part of the cooperative activities. Components of this program are described in Annex 5.

2.18 *Principal Issues.* This area has outstanding potential for biodiversity conservation if it is properly planned and developed. There is a need for restoration of shrub and tree vegetation along streams in farmland, restoration of bio-corridors, erosion control, and conversion to better and more ecologically sound farm practices. Participation in planning is essential. Ecotourism and forest silviculture, for example, can be of great benefit to the region if it is sustainable and carefully developed on ecologically sound principles and themes.

## **Morava**

2.19 *Location.* The project activities, which will be carried out in close cooperation with the Czech Republic and Austrian authorities including the WWF owned nature reserve in Austria, will be focused along the Morava River from Tvrdonice south to Bratislava, including the tributary Rudava River. It adjoins the Czech Palava project in the confluence of the Dyje and Morava Rivers (See map 4). All of these rivers are tributaries of the Danube.

2.20 *Key Characteristics.* In the agricultural landscapes of the Central European lowlands, there are remnants of natural ecosystems with a high diversity of plant and animal life. Some of the best of these habitats are found in the flood plains of the Dyje and Morava Rivers. A large part of these wetlands are covered with flood plain forests -- one of the largest and finest being located along the confluence of the Dyje and Morava Rivers.

2.21 Over the last millennium there have been changes in the Dyje and Morava floodplain, but radical changes have taken place since the 1960's. The floodplain forests have been reduced. The water table has dropped and spring floods have been interrupted. Large areas of meadow were ploughed up and converted into arable fields. The once continuous flood plain area has been transformed into a mosaic of remnant natural areas and areas of intensive management. Some stretches of natural river beds and fluvial processes remain, however, especially in the Morava River and its tributary, the Rudava.

2.22 The Rudava River is a small tributary of the Morava River in Western Slovak with a total length of about 45 km. This river and its valley contain a rich variety of natural habitats, especially in the middle section, where the stream has never been regulated. Here there are sand dunes adjoining floodplain forests, peat bogs, meadows, marshes, and other wetland types. According to recent surveys, 505 species of vascular plants (101 of which are on the Red Data List of the Czech and Slovak Flora), more than 30 fish species (5 on the Red Data List), 12 species of amphibians (4 on the Red Data List), and 200 bird species (13 on the Red Data List).

2.23 Several scientific institutions and a highly professional group of scientists from both the Slovak and Czech Republics are engaged in efforts to develop strategies for environmentally suitable stream, forest, agricultural and tourist management practices. The Czech GEF Palava project and this Slovak Morava project will assist in bringing these various efforts together, and will also provide support for developing environmental education programs with the communities in the region.

2.24 The southern section of the Slovak component is an exception. This area close to Bratislava was effectively locked up from research and the general public by an extensive system of notorious border fences and military patrols. It has only been since 1990 that the area has been open and researchers have found major populations of hitherto rare species associated with the wetlands and the remnant mature floodplain forests. Unfortunately, with the removal of restrictions, impacts from agriculture and indiscriminate recreation have been severe even in such a short time and actions supported by this GEF project will provide the only opportunity for protection of the area before it is degraded.

2.25 *Principal Issues.* The major issues for the region include: floodplain forest conservation and restoration, water regime management, agricultural practices, and over commercialization of the area form undirected and uncontrolled tourism. The principle objective will be to develop scientifically based and ecologically sound forest, stream, agricultural, tourist management and sustainable development practices for the region, with development of the then Palava, Dyje and Morava areas as a model for the region.

## C. PROJECT OBJECTIVES AND DESIGN

2.26 The project has been designed following a series of workshops in the Slovak Republic with management and research personnel and the Slovak Ministry of Environment Department of Nature and Landscape Conservation. It is designed to provide key interventions and develop institutional capacities and the focus of activity will be on three areas.

2.27 The project design reflects the need to address the innovations implicit in developing sustainable activities to maintain broad ecosystems and not just protected areas per se. The objective of this project is to provide demonstrations to protect and strengthen forest, meadow and wetlands habitats and related ecosystem biodiversity in the Slovak Republic. The project will:

- a. Foster systems of financially sustainable biodiversity protection in the Slovak Republic through the introduction of user fees; related charges for visitors and concessions to manage the areas within their determined "carrying capacities;" and to evaluate the role that economic mechanism might play in keeping visitation to levels below identified carrying capacities;
- b. Protect three zones of representative threatened ecosystems; meadows (Tatras), wetlands (Morava Floodplain), and mountain forests (Eastern Carpathians);
- c. Support the activities of three *transnational* biodiversity protection networks: Eastern Carpathians Biosphere Reserve (Poland, the Slovak Republic and Ukraine); the Tatra Biosphere Reserve (Poland and the Slovak Republic); and the Morava Floodplain Forests and Wetlands (the Slovak and Czech Republics and Austria); and
- d. Develop an integrated development and conservation program to address priority issues such as privatization.

### **Management Plans**

2.28 In each of the selected areas management plans are at various stages of preparation or acceptance (See Table 2). 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 also directed to integrating planning outside the strictly protected areas in consultation with affected communities and interests.

**Table 2. Status of Management Plans in Project Areas**

AREA	PLAN STATUS	COMMENT
Tatras	There are three existing plans (Territory plan, Nature Conservation Plan [1978], and Nature and Conservation Care Program [1991]) as well as a Forest Management Plan for 1987-1996. Land planning regulations introduced in 1986 have resulted in the gradual implementation of visitor restrictions and reduction of access. The current forest management in the biosphere reserve is based on common forestry methods that aim to promote and restore the natural forest condition	These plans are in need of review and the government has accepted the commitment for developing a plan for the biosphere reserve. The project will assist this planning process, particularly for the buffer areas in the development of strategies and the resulting action plans. Current uses in the National Park and surrounding areas (principally the Biosphere Reserve) will be reviewed in this process. As well, modern concepts of restoration ecology will be introduced with the forest restoration component of the project.
East Carpathians	A plan has been drafted for the Landscape Protected Area. (1993)	The GEF project directly supports the development of an up to date management plan as the establishment of the national park is subject to legislative approval (to be considered and passed early in the project).
Morava	WWF (Austria) has developed a basis for planning documentation adequate for this stage of the Landscape Protected Area.	The GEF project is designed to further this planning. It should be noted that this area is close to a large population center and that encroachment and use pressures will be very significant. The project supports planning measures relying on land use regulation and control mechanisms to be established and supported by the project.



#### D. DETAILS OF PROJECT COMPONENTS

##### **Biodiversity Protection Program**

**(\$729,800)**

##### *(1) Planning - East Carpathians (\$60,000)*

2.29 This component will include development of an overall management strategy for the tri-national biosphere reserve, and the development of a management plan for the Eastern Carpathians Biosphere Reserve<sup>3</sup>.

2.30 The first step is to develop an overall management strategy for the tri-national biosphere reserve with biodiversity conservation as a primary goal. This would be in accordance with the IUCN guidelines for promoting effective management of trans-frontier reserves, and the agreement of the Biosphere Reserve Coordination Committee to draw up programs for management, protection and utilization of the proposed biosphere reserve. This strategy would provide the guidance needed for all activities which should be cooperative, including information gathering, data collection and management, and appropriate GIS (Geographic Information Systems). In this way management plans for the Eastern Carpathians Protected Landscape Area in the Slovak Republic, the Bieszczady National Park in Poland and the protected area in Ukraine, will be developed in a coordinated manner.

2.31 To help ensure this coordination the preparation of the overall strategy for the biosphere reserve and the management plans for each of the areas will be undertaken under the general guidance of the committee to be established for the administration of the tri-national Trust to be established by this project and with the help of the respective MAB National Committees. This approach would also be an appropriate means to plan the role of this tri-national reserve and its national components in the regional Association of Carpathian National Parks. This overall strategy for the Proposed Tri-National Biosphere Reserve will establish guidelines for inventory, information management, research, monitoring activities, and the development of plans for regional tourism. This tri-national strategy would establish the guidelines and general principles for developing management plans for the protected areas in the respective countries.

2.32 The second step is the preparation of a detailed management plan for the anticipated Eastern Carpathians National Park. This would involve the establishment of an interdisciplinary team of experts (national and international), establishment of Terms of Reference and include public and local community participation. It also include costs associated with base mapping of the area.

2.33 The Project will finance consultant services for the development of a management strategy, workshops, production of planning materials, base mapping and the costs associated with organizing meetings with local communities and NGO's.

##### *(2) Biodiversity Management (\$521,700)*

2.34 *Forest Restoration - East Carpathians (\$111,000)* This component would support ongoing forest restoration activities and include an assessment of the silvicultural system which will be required to develop a sustainable forest ecosystem and restoration of priority sites.

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<sup>3/</sup> New legislation which includes the establishment of the East Carpathians National Park and is being considered.

2.35 The GEF will support the design and research to finalize the silvicultural systems for developing sustainable forest ecosystems. It will attempt to "reconstruct" or restore the original fir beech stands. It will necessarily investigate the remaining seed sources and their appropriateness to specific sites. Seed collection in the Slovak Republic, Poland and Ukraine will be required, as well as the establishment of forest nurseries. Costs of this component will also include the protection of the growing stock after planting.

2.36 This component will be coordinated by the administration of the Eastern Carpathian Biosphere Reserve and will involve the Forest Research Institute at Zvolen and the Slovak Ministry of Land Management, Forestry Section.

2.37 *Mountain Meadow Ecosystems - Eastern Carpathians* (\$34,600) The alpine meadows have developed after many centuries of agricultural use and have a unique flora composed of many endemic species particularly in the ecotone or the zone where the meadows grade into forest. 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: (i) encouragement of farmers to maintain traditional agriculture in these remote areas; and (ii) mowing the mountain 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. This is comparable to a component in the Czech Republic GEF project and linkages will be established between the two projects to share results and develop the most appropriate techniques. The project will fund mowing equipment and the operation and maintenance of this equipment during the project period. In addition, the project will provide incentives to local farmers to maintain traditional alpine meadows.

2.38 *Catchment and Water Management - Restoration - East Carpathians* (\$ 55,000) The biosphere reserve territory is situated within a flysch<sup>4</sup> area. Soil disturbance and spring and summer high intensity rainfall events are responsible for the development of major erosion problems. The siltation of streams and land degradation are long term threats to biodiversity. The planning component of the project will address the causes (forestry) as well as develop guidelines for the sustainable management of the buffer and transition zones.

2.39 There is a need, however, to restore selected riparian forests. A precursor to this restoration is the need to trial and identify the best techniques. This component provides support for an already established government program and will include an evaluation of the methodologies employed. The project will fund labor costs, equipment and materials for restoration activities.

2.40 *Forest Restoration Tatras* (\$48,000) The Tatras National Park has been monitoring and assessing the changes in the forest from introduced species and at the higher altitudes from air pollution for a considerable period of time. Although pollution is not as dramatic an impact at this time as other areas in Eastern Europe, a program for increasing the stability of the forests is required.

2.41 Interspersed with the relatively natural forests are areas of artificial spruce monoculture forest which because of their low potential for ecological stability (particularly from pollution) are at risk. The tasks of reconstructing the forests at the Tatras needs genetic resources of good quality. The present administration has resources for collection and selection of genetic material but is seriously hampered in its forest restoration activities by a lack of appropriate storage and extraction equipment. Therefore this

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4/ Flysch: a thick and extensive deposit largely of sandstone that is formed adjacent to a rising mountain belt.

component will fund essential extraction and storage equipment as well as improvements to a greenhouse. The latter will include the investigation of the benefits or otherwise of potted material for reforestation. The project will fund equipment, such as a cone dryer, seed storage and extraction and improvements to a greenhouse.

2.42 *Restoration - Morava (\$256,000)* Since the beginning of this century the Morava river and its tributaries have been regulated and their original water regime has been changed. These changes have had significant effects on the stability of the ecosystems (e.g. river bed erosion, water quality and reduction of the water table).

2.43 Water management authorities in Austria have started restoration of original flow conditions to prevent further deterioration and to restore the biological communities of the flood plain.

2.44 This component will establish a series of model projects to help the Slovak authorities to determine the techniques, potentials and benefits of restoration of the Morava River ecosystems. The project will fund equipment (\$36,000), incremental labor costs (\$30,000), consultant services (\$20,000), materials, site preparation and planting stock (\$20,000) and limited civil works (\$150,000). It will include six activities:

- a. restoration of the water regime (3 sites),
- b. restoration of wetlands habitats,
- c. restoration of river vegetation corridors for the migration of terrestrial and aquatic species,
- d. management of selected meadows to include non-arable activities to restore and maintain biodiversity and at the same time enable sustainable economic use,
- e. rehabilitation and restoration of forest with natural forest compositions, and
- f. *ex-situ* conservation of locally endangered species.

2.45 *Planning - Morava (\$17,000)* In order to ensure that the activities of restoration will have a long term viability, the areas surrounding protected reserves require planning and land use zoning. This component will fund this planning activity including the assessment of the biotypes and their appropriate land use. The project would finance a biotype mapping program (\$12,000) and a planning workshop \$5,000.

### *(3) Professional Development and Training (\$67,500)*

2.46 A number of key training programs have been identified for protected area managers, specialists and administrators. These include a study tour to investigate mechanisms for the determination of carrying capacity, a workshop with other GEF project areas on the management and implementation of GIS and specialist training for GIS managers in conjunction with the already established training center only recently established by the US Environmental Protection Agency. A number of specialist overseas opportunities will be provided for development of skills in park management and interpretation as well as sustainable agriculture. The project would finance some equipment, travel, subsistence and consultant services. A detailed program with the above elements will be developed by the Project Management Unit (PMU) at the very beginning of this project.

*(4) Systematic Environmental Investigation, Applied Research and Monitoring at Tatras (\$80,600)*

2.47 About twenty scientific institutions are affiliated with the Tatra National Park Research Center and have contributed to developing its program. The National Park Administration, which has about twenty employees on its scientific research staff, is a leader in progressive methods of scientific research and management, not only in the Slovak Republic, but also in the entire Carpathian Mountain area. The results of work here and the experience that can contribute to biodiversity conservation will be shared through the networks established by the Carpathian Association of National Parks, the Association of National Parks and Protected Areas of Slovak, and the MAB Program. An important objective of this GEF component will be to help establish the Tatra National Park and its Research Center as an international center to assist and compliment these other organizations in developing scientifically sound biodiversity conservation programs. These activities will be integral parts of the Park's management planning and research objectives. The project would finance equipment for scientific analysis as detailed in Annex 4. This activity would include:

- a. **Analyzing bioindicator species including bird feathers and bones, especially for heavy metals** -- the objective of this component will be to analyze various biological samples to permit comparisons of contemporary and historic levels of environmental contaminants, especially heavy metals. As such, it is an integral part of environmental monitoring necessary to indicate the need for management strategies and the extent to which biological conservation is being achieved in the long-term;
- b. **Mapping and analysis of mesozoic carbonate rocks and their influence on natural communities of the karst ecosystems** -- Subject of this component will provide an essential inventory component to indicate the extent, occurrence and importance of the Karst and related communities;
- c. **Establishing the Tatra National Park (TNP) Research Center as an international distribution center for information on current activities in conservation-environmental science** -- the TNP Research Center to determine the species ranges of selected species. The equipment to be purchased under this component will enable an efficient monitoring program to be undertaken and determination of the ranges of individual species. The center will also be provided with limited funding to assist the role of the center as an international research center. This provide the center with the means to disseminate latest research results, purchase databases only available by subscription with hard currency and to distribute the results of the Slovak GEF project to other countries faced with similar issues in the Region; and
- d. **Telemetric monitoring of critically endangered species - chamois, marmot, wolf and bear** -- this component will determine species ranges, migrations, population dynamics, and ecological relationships. The objective is to provide key information as base line data as a means to monitor change.

2.48 Scientists have collected samples of bioindicators consisting of vascular plant species, lichens and mosses, and bird skins which are contained in the TNP laboratory. Park scientists will continue sampling and analysis, especially for heavy metal content. The analysis of bird skin collections will permit comparisons of contemporary and historical levels of metals that are incorporated in the growing feathers and bones. Approximately 400 skin samples are suitable for chemical analysis, which will be undertaken in cooperation with the U.S. Fish and Wildlife Service at their Patuxent Center.

2.49 Research and monitoring activities, such as telemetric investigation of endangered animal species, will be carried out or supervised by the Park staff and by scientists from collaborating research institutions. International exchange will be arranged in some specialized areas. The TNP would also subscribe to a number of key data bases and publications presently unobtainable in the country (for example "Current Contents on Diskette/Agriculture, Biology and Environmental Sciences", from the Institute for Scientific Information, Philadelphia, Pennsylvania). This information would be shared with the Carpathian and Slovakian Associations mentioned above.

**Conservation Program**

**(\$870,000)**

*(1) Buffer Zone Strategies - Management and Use (\$ 90,000)*

2.50 This GEF project will focus on developing models for buffer zone management in the biosphere reserve target areas, especially in their support zones. The IUCN guidelines for developing strategies for sustainability, described in Annex 3, will be used in this initiative.

2.51 These activities will be carried out both in the reserves and in their support zones where human settlements are located, and where certain industrial, farming, forestry and fisheries activities will continue. In some areas there are centuries old traditions and resource-use systems that can provide valuable lessons to the development of environmentally sound land-use practices today. The support zones will serve as experimental areas where human activities can be studied and monitored over time to determine which human activities are compatible with sustaining natural resources and biodiversity, and which must be changed. Some known extractive technologies, based upon minor forest products (mushrooms, berries, etc.) and conservation compatible silviculture will be fostered with assistance in relevant land-use planning and management. In some areas, restoration of habitats will also be carried out as experimental and demonstration activities.

2.52 The buffer zone strategies for management and use would be designed and implemented under the auspices of the Ministry of the Environment and the Slovak MaB Committee. IUCN, WWF and an applied sciences working group constituted through the World Bank will sponsor a conference to develop a plan for designing and implementing and developing the strategies in each of the three target areas. The participants would include key officials from each area, NGOs, small-scale land-users and local government representatives. The purpose of the conference would be to organize the preparation of the strategies according to the guidelines outlined in Annex 5. These include:

- a. Identification of key issues affecting sustainability,
- b. Consultation and consensus building,
- c. Information assembly and analysis,
- d. Policy formulation, and
- e. Action planning and implementation.

2.53 The project would finance consultant services and expenses for a planning conference and preparation of planning materials; planning workshops and community forums in each of three areas-conducted over a two year period; and equipment, vehicles and incremental labor and management costs for the start of pilot demonstration projects focused on sustainable development practices in each area.

2.54 An evaluation of the existing inventory of endangered species throughout the Slovak Republic will also be implemented so that information could be made available for land use planning.

This would serve to inform land use planners and help to determine which species might be in the support zones of the reserves.

2.55 In the development of the buffer zone strategies attention will be directed to the effects of land redistribution which could increase settlements and the establishment of enclaves within the core protected areas, such as the national parks. A 1992 report prepared by IUCN for the European Programme<sup>5</sup> indicated that the effects of land redistribution on the maintenance of the integrity of the protected area system is possibly a substantial biodiversity issue in the Slovak Republic. It should be noted that a similar situation exists in other countries in Central and Eastern Europe, but the IUCN report noted that the situation in Slovakia has the potential to be of greater significance, as the method of land redistribution has not adequately provided for the necessary checks and balances that would seem to be required or implemented elsewhere, such as in the Czech Republic. As of September 1992, it was anticipated that 14 million SK compensation per annum (or an amount equivalent to 20 percent of the government support for national parks and landscape protected areas in 1991) would be needed to pay for land subject to reprivatization which falls within protected areas. The compensation was likely to be paid as tax credits rather than cash payments, but the mechanism is still to be worked out.

2.56 The country-wide issue of land redistribution is beyond the scope of this GEF project although the various planning measures for the selected areas will have to address the effects of changing land ownership, and possibly use. Nonetheless, of the three project zones, the Tatras National Park can be identified as an area which provides a striking example of the difficulties that the current situation places on park management authorities. Forty-five percent of the National Park is eligible for reprivatization, a significant proportion of which has been identified as subject to claim by the church; if a decision is made that the church is, in fact, eligible to claim. This obviously poses a significant threat to the management policy. The restitution of so much land undermines the essential fabric of the park, for whereas private lands were bound by restrictive conditions, now they are owned and the use is negotiable. Although nominally the owners are still held to the Park's management plan, should they find its provisions unacceptable they can offer it to the Park which can either buy it, lease it or offer substitute land. This is the paradox, as the legislation designed to protect the Park places it in the predicament of having to finance massive expenditure to safeguard the boundaries.

2.57 Therefore, this project component will also have a significant activity which addresses the impact of land redistribution for the Tatras National Park (TNP), its buffer and protected zones as well as the Eastern Carpathian and Morava project zones. This will entail support for accurate monitoring of changes in land use and the impact on the protection of biodiversity. It will also evaluate the effectiveness of any mitigation measures taken at the local level, and as importantly recommend improvements or further measures.

2.58 The utility and importance of these activities are obvious and would be expected to provide locally based insight into wider land use issues caused by land redistribution which would not only be significant for nature protection but also in such sectors as forestry. The approach would create an awareness of the on-ground problems within the government and the wider international community by providing real data as the issue develops. Thus, during negotiations, assurances would be sought from the government, that if claims have been made, or could be made for restitution to previous owners of parcels or portions of parcels within the three project areas (Tatra, Eastern Carpathians and Morava), that arrangements would be made to address and, where necessary under Slovak law, to provide restitution

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5/ Land Redistribution and Nature Conservation, IUCN, European Programme Discussion Papers 1, September 1992.

to such claimants, that this restitution be done in a manner to ensure the biodiversity protection program being supported under the Project.

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

2.59 Generally, an area's **carrying capacity** can be qualitatively described as the level of visitation tourism 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 is 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.
- c. Host social carrying capacity is the level beyond which unacceptable damage will be caused to local cultural stability and attitudes towards tourists.

2.60 Many of the selected areas are already experiencing visitation and use beyond the ecological carrying capacities of the resource (for example, recreation in national 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 the former CSFR at the border areas have been removed, and because of the Slovak Republic's unique central position with 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 complimentary regional tourism. Such decentralization also would encourage responsible use of the attraction by the tourism industry.

2.61 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 Slovak 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.

2.62 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.

2.63 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.

2.64 In the Slovak 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.

2.65 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.

2.66 The project will finance equipment, incremental labor and management costs and consultant services 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) to implement these measures in selected locations as demonstrations.

2.67 Expertise for this component will be required from a number of sources: scientists, economists, local communities and land-users, NGOs and managers. The principle organization responsible for this component will be the Slovak Institute for Nature Protection. This institute, after drastic reducing of its staff has become a part of the Slovak Agency for Environment. The Project Management and Coordinating Unit (PMCU) would contract with them for this component. As a similar component has been designed for the Czech Republic coordination between the two GEF projects will be critical.

2.68 This component will comprise a workshop to determine the methodology for the mechanisms above; a feasibility study to explore the appropriateness of these mechanisms; and pilot projects in target areas in each Republic.

*(3) Foundation for Eastern Carpathian Biodiversity Conservation (\$610,000)*

2.69 As a result of the 1991 Agreement of Environmental Ministers representing the three responsible government ministries in Poland, Slovakia and Ukraine, a working committee of scientists from each country was established in 1992. Three meetings were held, in Uzghorod, Ukraine (October 1992), Dukla, Poland (December 1992) and Snina, Slovakia (February 1993). Agreement on the basic organization and purpose of a tri-lateral biodiversity protection program was reached and detailed proposals to implement this work developed.

2.70 To initiate work on this tri-lateral program a proposal was made to foster a permanent financial mechanism to sustain biodiversity protection investments in this biosphere reserve. Annual resources generated from the endowment of the Foundation for Eastern Carpathian Biodiversity Conservation would be used to foster agreed protection efforts in this transboundary zone. The initial deposits in this Foundation would be made by the MacArthur Foundation (Chicago, Illinois) of \$300,000 with matching funds from the GEF (\$300,000). A working draft of the charter of the Foundation has



been developed and is now being finalized. A condition of disbursement of the GEF portion of this Foundation is submission and approval by the Bank of a satisfactory charter of the Foundation and the establishment of an account in a financial institution located outside of the territory of the three beneficiaries under terms of an agreement acceptable to the Bank.

2.71 The initial work program (first year, 1993/1994) of the Foundation agreed in February, 1993 at Snina, Slovakia would involve:

- a. Detailed mapping of the transboundary area to 1:50,000 scale from maps provided from each of the three countries;
- b. Working Group meeting to review a listing of all completed and underway applied research undertaken by each of the three countries and exchange of these papers. Development of a joint methodology for prioritizing future applied research;
- c. Preparation of a draft Management Plan for future biodiversity protection efforts for this area; and
- d. Development of joint agreed Geographic Information Standards for the tri-lateral area and adoption of such standards in national GIS work.

**Institutional Infrastructure Improvement Program**

**\$885,800**

*(1) Protected Area Facilities (\$224,800)*

2.72 *Park Radio Communications Systems at Eastern Carpathians and Tatras (\$59,800)* A basic need for effective conservation is to strengthen the Park's radio communication system. The objective of this component is to assist with the establishment of a radio system to enable the management organization to effectively manage the area. The project will fund equipment and related consultant design services. The equipment is detailed at Annex 4.

2.73 *Nature Center at Tatras (\$35,000)* The Nature Center at Tatranska Lomnica is to be completed by local workers under the supervision of professional Park staff. The extension program in environmental education and training will be assisted by the NGO networks which have their headquarters in the Park. The project will fund audiovisual equipment, materials and incremental labor costs to complete the nature center.

2.74 *Education and Research Facility at Eastern Carpathians (\$130,000)* A facility in the Nova Sedlica village will be built and equipped for as a field research facility and as a lodging site for visiting scientists, park officials and seasonal workers engaged in conservation management. As there is no accommodation in close proximity, this component will assist with the support for the management planning component. A small visitor information center will also be established and equipped. The project will cover designs, construction costs, fitting out and two years of operation and maintenance.

2.75 *Legal Status and Land Ownership in Project Areas (Morava, Eastern Carpathians and Tatras).* The legal status of the Tatras is covered by the Tatra National Park Act issued by the Slovak National Council in 1948. Lands within this Park are owned by state and non-state organizations, as well. The status of the lands in the Eastern Carpathians is that of "protected landscape area" in

accordance with the current Nature Conservation Act. This area has been proposed for a National Park, but the legislation has yet to be passed. However, until this Legislation is passed, there is the possibility, while remote, that previous owners of parcels within the boundaries of this Park, may press claims for restitution of these parcels or for monetary compensation in lieu thereof. Similarly, for the Morava Floodplains, which also has a status of the protected landscape area, claims could be pressed for restitution, either in parcels or in monetary compensation, from previous owners of portions of the Morava Floodplains. Thus during negotiations, assurances were obtained to ensure that Project activities are carried out only on land owned by the Government or on land to which the Government has rights under long-term contractual arrangements consistent with the objectives of the Project. The regional offices of the Ministry of Environment by law approve such investments and would only do so provided they are consistent with the above paragraph.

*(2) Computerization, Monitoring and Data Management (\$435,000)*

2.76 Land resource management requires a knowledge of the resource. This must include knowledge of the changes that are occurring over time and the systems that maintain the resource. 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. An ideal 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. sighting 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.

2.77 Assistance provided by a 1991 UNDP Project entitled "Development of Integrated Information Systems for the Environment of CSFR" resulted in:

- a. The identification of the main institutional responsibilities and duties in the field of environmental information and the measures needed to fulfill these tasks,
- b. The 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. The 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 Slovak Republic.

2.78 This component will implement the framework developed by the UNDP project. It is clear that 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.

2.79 A similar situation exists with thematic and spatial data critical in a variety of land use and development decisions. Given the expected major changes in tenure and land use in the Slovak 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.

2.80 This part of the GEF project is designed to build on these initiatives. 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 purchase of equipment and software, the design of compatible systems after determination of specific priority needs and the training of key personnel (system managers, operators and land managers) in the development and operation of integrated data management and monitoring.

2.81 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.

2.82 Costs of the development of this integrated system of monitoring and data management for the Slovak Republic includes strengthening the conservation data base and development of information-data management systems (technical assistance, training, and equipment). A major component will be the establishment of a regional system already identified by the Ministry as a priority site in the high Tatras. Monitoring will include abiotic and biotic components and support for this regional initiative will provide equipment and training. Smaller system components will be provided at the Ministry (principally the Department of Nature and Landscape Conservation) and at the other project areas. The project will fund computers and GIS equipment and supporting training and staff development. See details in Annex 4.

2.83 One further innovative feature of this component will be to establish an appropriate computer based information exchange system (E-Mail or INTERNET). This will enable a far more effective transfer of data and other information between the various sections involved in the project areas, not only in Slovak but also internationally. This will enable the project results to be easily transmitted to all interested parties as and when they are to hand.

*(3) Joint Scientific Advisory Committees - Morava, Tatras and East Carpathians (\$45,000)*

2.84 Since the above activities have to be planned and carried out in a deliberate, systematic manner with the Czech and Austrian authorities for Morava, and with Polish and Ukraine authorities for the East Carpathian and with Polish authorities for the Tatras, the GEF project will provide modest support for the establishment of joint scientific and advisory committees which would make recommendations to the participating governments regarding common conservation and management objectives for the region. In the case of the East Carpathians, this would be linked with the activities of the Trust. The committees will also assist in evaluation and implementation of project activities.

*(4) Environmental Non Government Organizations Small Grants Program (\$100,000)*

2.85 After consultation with the environmental NGO community, a Small Grants Program was identified to support the fledgling NGO community and to implement small biodiversity protection projects. The PMCU will administer the Grants program. Individual projects will be selected after a competitive process. A five-person advisory committee would be established for project selection and

evaluation. This committee would include representatives of the Nature and Landscape Conservation department, an internationally recognized Slovak biodiversity academic chairman and a member of an international NGO organization. A series of small workshops in regional centers would be held to develop the program and develop proposal preparation skills.

2.86 It would be expected that between 15 and 20 small grants would be made. These projects would be directed at innovative approaches to biodiversity conservation in the country. Criteria for the program are detailed in Annex 6.

*(5) Project Management (\$90,000)*

2.87 To undertake the project a Project Management Unit will be established in the office of the State Secretary in the Slovak Ministry of Environment. Project funds will be provided to establish this small office facility as well as staffing. A Project Manager will be appointed and will be responsible, along with the three protected area managers, for the conduct of the project.

2.88 As well, one person will be funded at each of the project areas. This person will be responsible to the park director or reserve manager and administer the project. Assistance will be provided for office facilities (fax, equipment and furniture). See Annex 4, page 11 for cost details.

**E. PARTICIPATION BY NGOS AND LOCAL COMMUNITIES IN PROJECT ACTIVITIES**

2.89 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.

2.90 The direct support for the tri-national Trust will enable local participation and coordination of management activities within the forest ecosystems of the three countries. The Trust will support local NGO activity to generate community support for this management.

2.91 The small grants program will be an element of direct support to the NGO community. A similar program is being included in the related GEF project for the Czech Republic. The Czech approach will be managed by an international trust with a coordinating office in Prague. Evaluation of the successes and failures of both programs will provide an indication of the most effective mechanisms for supporting the national and regional NGO communities.

**F. ENVIRONMENTAL IMPACT**

2.92 The proposed activity will have a positive environmental impact by improving the management and protection of the three selected areas. 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. As this project has no significant negative environmental impact it is assigned as environmental category C.

G. PROJECT COSTS

Table 3.1 PROJECT COSTS  
(US\$ Thousands)

Investment Costs	Local	Foreign	Total <sup>a</sup>	%Foreign	%Total
	------(US\$ '000)-----				
<b>A. Biodiversity Protection Program</b>					
1. Biodiversity Management	479.2	42.5	521.7	8.1	20.9
2. Planning - East Carpathians	54.0	6.0	60.0	10.0	2.4
3. Professional Dev. & Training	17.5	50.0	67.5	74.1	2.7
4. Env. Investigation, Applied Research & Monitoring	13.3	67.3	80.6	83.5	3.2
Sub-Total	564.0	165.8	729.8	22.7	29.3
<b>B. Conservation Program</b>					
1. Buffer Zone Strategies	76.5	13.5	90.0	15.0	3.6
2. Carrying Capacity, Revenue Mechs., & Demonstration	163.0	7.0	170.0	4.1	6.8
3. Tri-National Foundation	0.0	610.0	610.0 <sup>b</sup>	100.0	24.5
Sub-Total	239.5	630.5	870.0	72.5	34.9
<b>C. Institution and Infrastructure</b>					
1. Protected Area Facilities	202.3	22.5	224.8	9.8	9.0
2. Computers & Data Management	87.0	348.0	435.0	80.0	17.4
3. Joint Scientific Advisory Committee	0.0	45.0	45.0	100.0	1.8
4. Project Management	60.0	30.0	90.0	33.3	3.6
5. NGO Small Grants Program	91.0	0.0	91.0	0.0	4.1
Sub-Total	440.3	445.5	885.8	50.3	35.9
<b>Total BASELINE COSTS</b>	<b>1,243.8</b>	<b>1,241.8</b>	<b>2,485.6</b>	<b>49.8</b>	<b>100.0</b>
Physical Contingencies	62.2	31.6	93.8	33.6	3.8
Price Contingencies	64.8	24.8	89.6	27.7	3.6
<b>Total PROJECT COSTS</b>	<b>1,379.5</b>	<b>1,297.7</b>	<b>2,670.0 <sup>a</sup></b>	<b>48.5</b>	<b>107.4</b>

<sup>a</sup> Total amount does not include complementary Austrian EcoFund activities (US\$0.5 million).

<sup>b</sup> Includes US\$10,000 from the MacAthur Foundation for preparation of Trust Agreement.

## H. FINANCING PLAN

2.93 Estimated project financing plan is as follows:

Table 3.2 PROJECT FINANCING PLAN  
(US\$ Thousands)

Source	Local	Foreign	Total
	(US\$ Million)		
GEF Grant	0.000	2.300	2.300
MacArthur Foundation	0.000	0.310	0.310
Austrian Ecofund	0.000	0.500	0.500
Government	0.060	0.000	0.060
<b>TOTAL</b>	<b>0.060</b>	<b>2.810</b>	<b>3.170</b>

## I. PROCUREMENT

2.94 The Grant would finance the procurement of equipment to undertake applied research and monitoring under the project, including: computers and software for geographic information systems (GIS); vehicles; communications equipment, such as provision for electronic mail linkages (US\$600,000); civil works (US\$200,000); and technical and consultant services (US\$800,000) (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).

2.95 International shopping procedures 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 procedures 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 US\$5,000 per contract (up to an aggregate of US\$200,000). Contracts for the following equipment (for example, GIS software or specialist research 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.

2.96 The project includes two small civil works contracts for the Carpathians Education and Research Center and for the construction works associated with the restoration of the Morava wetlands, the total estimated cost of which is US\$200,000. Civil works for the model restoration projects for the Morava Floodplains may be carried out by Force Account. A ceiling of \$125,000 was established as the amount eligible to be withdrawn from the grant for this purpose. This force account work, to be conducted by the Morava "Povodie Dunaja" Agency would be supervised by the Ministry of Environment's regional office in Morava.

2.97 During negotiations, it was agreed that an agreement would be signed between the PMCU and this Agency and a copy made available to the Trustee three months before the expected date of commencement of this force account work. This agreement would specify the works to be done, provision for accounting of the force account, the breakdown of the construction costs by labor, materials, management and overhead, and the timetable and supervision of the work. The comments and suggestions of the Trustee would be taken into account by the PMCU prior to finalizing the agreement with the Agency.

2.98 **Local Shopping - Goods** During negotiations, it was agreed to include a provision to allow local shopping of up to \$5,000 per contract with an aggregate of \$200,000 for the Project. This would necessitate a minimum of three quotations per contract from local suppliers. This provision would greatly expedite implementation as a number of items of equipment required for the project, are small-value items, and are now readily available at competitive prices on the local market. Recurrent expenditure for goods under Category 2 of the Grant Agreement for operation and maintenance purposes estimated to cost up to the equivalent of \$50 per purchase and an aggregate amount not to exceed the equivalent of \$30,000 may be procured in accordance with the Recipient's standard purchasing practices.

2.99 **Local Shopping - Civil Works** During negotiations, it was also agreed to include a provision for local shopping for civil works for the construction of the Education and Research facility in the East Carpathians project area. For this purpose, Slovakia intends to use local shopping bidding documents for civil works developed by the World Bank. This contract is expected to cost the equivalent of \$US 130,000.

2.100 The project also includes eight short-term assignments (estimated cost US\$200,000) for which individual<sup>6</sup> consultants (both foreign and local) would be engaged following the procedures outlined in the *Guidelines for the Use of Consultants* (August 1981). The selection of all individual consultants will be on the basis of comparison of at least three Curriculum Vitae for each selection of an individual consultant. Four of these contracts are estimated to cost under US\$50,000 each. However, regardless of the value, all consultant contracts would be subject of the Bank's prior review. An amount of US\$600,000 will be needed for further technical assistance associated with training and professional development, planning and particularly with the development of the conservation program.

2.101 The project will include expenditures on incremental costs of salaries, operating costs and maintenance (estimated at \$700,000) for the one-person coordinating offices in each of the project areas as well as contracted field staff to implement technical activities.

2.102 Procurement would be carried out by the staff of the Project Management and Coordination Unit in the Slovak Ministry of Environment. They would also be provided with model invitation documents for consultant assignments. The estimated procurement plan is outlined in Table 3.3 below.

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<sup>6/</sup> Given the modest size of these technically focussed assignments, the use of individual, rather than firm-based, consultants is expected to be more cost effective.

Table 3.3 PROCUREMENT ARRANGEMENTS  
(US\$ Thousands)

Items	Procurement Method		
	ICB	Other	Total
(1) Civil Works	—	200 <sup>a</sup>	200
	—	(200)	(200)
(2) Goods and Equipment	—	850.0 <sup>b</sup>	850.0
	—	(600.0)	(600.0)
(3) Technical Assistance	—	870.0 <sup>c</sup>	870.0
	—	(800.0)	(800.0)
(4) Salaries, Operations and Maintenance	—	1,250.0	1,250.0
	—	(700.0) <sup>d</sup>	(700.0)
<b>TOTAL</b>	<b>-</b>	<b>3,170</b> <b>(2,300)</b>	<b>3,170</b> <b>(2,300)</b>

NOTE: Figures in parenthesis are GEF Grant

a/ Civil works will be procured through local competitive bidding.

b/ Includes International and Local Shopping (US\$400,000), and Direct Purchase (\$US200,000).

c/ Includes professional development training, planning and conservation program (US\$800,000) to be procured under Bank's consultant guidelines.

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

#### J. DISBURSEMENT

2.103 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 (\$25,000) is included for investments dated from July 1, 1993 for start-up costs of the proposed Project Management Coordination Unit (PMCU) including professional development training, computer equipment, and the establishment of an electronic mail system. The Disbursement Plan for GEF grant funds is as follows:

Table 3.4 DISBURSEMENT PLAN

Items	Amount	
	(US\$ million)	% Financing
(1) Civil Works	0.2	100 %
(2) Goods and Equipment	0.5	100 %
(3) Technical Assistance	0.7	100 %
(5) Salaries, Operations & Maintenance	0.6	100 %
(6) Unallocated	0.3	
<b>TOTAL</b>	<b>2.3</b>	



## K. PROJECT BENEFITS AND JUSTIFICATION

2.104 The most important benefits to biodiversity conservation in the Slovak Republic and internationally will be in the examples that are developed to illustrate integrated conservation and development and protected area 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.

2.105 The principal benefits are to protect ecological zones of substantial international importance. The Eastern Carpathians Forest in Poland, Ukraine and in the adjoining Slovak are unique in Europe and a source of endemic biodiversity. The Morava floodplains and the forests and alpine meadows of the Tatras have many endemic and representative species and habitats of the regions ecosystems. All three areas are at threat and the project will initiate programs to protect and restore these systems.

2.106 Innovation is fostered by the integration of the various levels of biological diversity to address issues in conservation planning, by the unique (for the Slovak Republic) collaboration of groups from a variety of interests in addition to foresters in issues of forest planning and management, 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.

2.107 There is a demonstration value and replicability through the use of integrated planning, of new technologies, and the establishment of bilateral and trilateral organizational structures which foster international resource management approaches. The Project can have significant demonstration value.

2.108 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, wetlands 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. Enable one 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;
- c. 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

## L. SUSTAINABILITY

2.109 The Project is designed to foster biodiversity, institutional and financial sustainability. The long-term viability is achieved through the strengthening of environmental institutions within the Slovak Republic, including those responsible for the management of the national parks and 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 user fees, concessions and leasing arrangements and the establishment of the new Foundation for Eastern Carpathian Biodiversity Conservation would also support the long term sustainability of these investment efforts. They include compatible 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.

2.110 The project will also 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**

2.111 Although there are no major risks, implementation could be affected by some institutional weaknesses at the level of the Department of Landscape and Nature Protection, instability in sustainable forest practices, and delineation of authority and responsibility for the areas (e.g. a diffusion of authority and responsibilities outside the SME).

2.112 There are some institutional risks in that legislation and administrative arrangements are not complete after the recent establishment of the Slovak 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 appropriately taken into account in this rapid period of change.

### **III. PROJECT IMPLEMENTATION**

3.1 A small Project Management and Coordination Unit (PMCU) will be organized within the Office of the State Secretary of the Ministry of the Environment. The satisfactory establishment of this office would be a condition of grant effectiveness.

3.2 This Unit would coordinate the project activities and cooperate with the following group:

- a. the Department of Nature and Landscape Protection (Ministry of Environment)
- b. the Department of Ecological Policy (Ministry of Environment),
- c. the Department of Ecological Projects (Ministry of Environment),
- d. the Department of Monitoring and Information (Ministry of Environment), and
- e. the Forestry Section of the Ministry of Land Management.

3.3 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 Morava, the Tatras and the Eastern Carpathians.

3.4 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 a Scientific Advisor. The incremental costs (salaries, furniture, travel, office equipment) would be reimbursed from the GEF project.

3.5 Each of the three project zones would also establish a small Joint Scientific Advisory Committee to review and advise on project progress and technical aspects of these transboundary protection efforts for the three year implementation period of the GEF project. This Committee would comprise Slovak as well as international biodiversity scientists. The selection of the scientists for these three Joint Scientific Committees would be made by the Project Manager in consultation with the management of each of the three zones (Tatras, Eastern Carpathians and Morava). The costs of these committee operations (travel, subsistence, hotels) would be reimbursed by the GEF project.

#### IV. AGREEMENTS AND RECOMMENDATIONS

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

- a. **Joint Scientific Advisory Committees** The Ministry of Environment shall establish Joint Scientific Advisory Committees no later than December 31, 1993. This would include the completion of administrative scientific linkages for the joint Palava/Morava area with the Czech Republic and Austria, as well as for the activities in the Carpathians with Ukraine and Poland and the activities between Poland and the Slovak Republic in the Tatras; and
- b. **Grant Effectiveness** The Grant would be declared effective upon submission of documentation satisfactory to the Bank that the Project Manager has been appointed and the Project Management Coordinating Unit (PMCU) has been established in the Ministry of Environment.
- c. **Accounts** A special account would be established in a financial institution satisfactory to the Bank for the project. This account would be audited annually by an auditing firm acceptable to the Bank.
- d. **Tatras Administration** Project activities at the Tatras National Park will be under the direct administration of the Forestry Section of the Ministry of Land Management. Financial and administrative arrangements between the SME and the MLM for these project activities would be subject to agreement
- e. **Government Budget Support.** A commitment will be sought at negotiations that the Slovak Republic will maintain the current level of financing for the protected areas in real terms during the life of the project.
- f. **Land Ownership within Slovak Protected Areas.** During negotiations assurances were obtained from Government to ensure that Project activities are carried out only on land owned by the Government or on land to which the Government has rights under long-term contractual arrangements consistent with the objectives of the Project. The regional offices of the Ministry of Environment by law approve such investments and would only do so provided they are consistent with the above paragraph.

**SLOVAK REPUBLIC**  
**BIODIVERSITY PROTECTION PROJECT FOR**

**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.
- FLYSCH:** A thick and extensive deposit largely of sandstone that is formed adjacent to a rising mountain belt.
- 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.

SLOVAK REPUBLIC

GEF BIODIVERSITY PROTECTION PROJECT

DETAILED DESCRIPTION OF PROJECT  
AND PROTECTED AREAS IN THE SLOVAK REPUBLIC

EASTERN CARPATHIANS

I. LOCATION, KEY CHARACTERISTICS AND VALUES

1. The Eastern Carpathians Protected Landscape Area, established in 1977, is located in northeastern Slovak bordering Poland and the Ukraine (see Map 3). It covers an area of 670 km<sup>2</sup> (258 sq. miles). Its eastern part, covering 406 km<sup>2</sup> is one of the least disturbed natural ecosystems in the Slovak Republic.

2. The Protected Landscape Area consists of the Bukovske vrchy Mountains, the northern Laborecka vrchovina Highlands and the eastern Beskydske predhorie Hills. The entire area was formed from extensive deposits of clay and sandstone (Flysch) during the early Tertiary period. Poland, Slovakia and the Ukraine meet at the summit of Kremenec Mountain, which is the highest mountain in the area with an elevation of 1,221 m (4,606 ft).

3. The Eastern Carpathian Mountains are rounded and clothed in vegetation unlike the more rugged Alps. Forests cover two thirds of the protected landscape. Beech forests with primeval stands of large mature trees characterize a large part of the area. There are also mixed forests of beech and fir, and extensive mountain grassy meadows. These meadows also contain rare and endemic species. Together, these different habitats contain a large variety of plant and animal species, including over 962 species of vascular plants and 1,342 species of animals, 230 of which are vertebrates. Of particular importance is one of the largest population of wolves, *Canis lupus*, left in Europe. The lynx, *Lynx lynx*, and bear, *Ursus arctos*, populations are also significant. Occasionally European bison, *Bison bonasus*, from the Bieszczady National Park in Poland migrate into the area.

4. Cultural and historical features are also significant components of the protected landscape area, which includes 10 villages and a total of approximately 5000 inhabitants. These communities include attractions such as old wooden churches protected as National Cultural Monuments.

## 5. Habitats of particular value in the Protected Landscape to conservation include:

Stuzica	A well-preserved complex of primeval beech and fir-beech forest ecosystems which provide habitat for bear, lynx and wolf. These forest stands reach their upper limits above which the mountain meadows ("poloniny") are found with their characteristic association of East Carpathian species.
Riaba skala	This is a unique forest area in the Bukovske vrchy hills which contains a concentration of rare plant and animal species.
Plasa	Plasa is a virgin beech forest with a mixture of maple near its upper forest limit, where climatic conditions limit tree growth.
Rozok	A fragment of homogeneous virgin beech forest.
Havesova	A fragment of virgin beech forest with maple, elm and ash.
Stinska	An area of well-preserved forest communities and mountain meadows which contains East Carpathian endemic species.
Bahno	A depression with peat and fen communities containing <i>Drosera rotundifolia</i> (an insectivorous plant species), <i>Thysselinum palustre</i> and <i>Phelypteris thelypteroides</i> .
Udava	A fragment of fir-beech forest outstanding because of the abundance of fir in the stand. These forest communities provide essential habitats for bear, lynx and wolf.
Hlboke	A beech forest on acid bedrock.
Pod Ruskym	An waterlogged association of grasses and other species including a variety of pontic and mediterranean ones.
Struznica dolina	Forest stands on the alluvium of the Struznica River which include the sub-atlantic/mediterranean species, <i>Primula vulgaris</i> .
Hrunok	A well-preserved forest community with oak prevailing and which contains the East Carpathian species <i>Helliborus purpurascens</i> and the endangered species, <i>Hepatica nobilis</i> , which occur in great number.
Orenicova skala	A long row of sandstone cliffs important especially for the study of morphology, tectonics and soil evolution in the region.
Stinska slatina	A moor-peat community in a land depression.
Ruske	Preserved thermophilic, wet and moor communities with the rare species, <i>Genistella sagittalis</i> occurring.
Gasdoran	Xerothermic grass communities on calcareous flysh beds.
Ostra	A complex of forest communities in the Ulicka River valley with the occurrence of the rare species, <i>Scopolia carniolica</i> .
Borsuciny	Primeval forest ecosystems on steep and rocky slopes.
Bzana	Mesophilic grass communities with a large diversity of species.
Lany	Grass communities with an unusual concentration of orchid species.
Kolbasovske luky	Sedge and moss community in wet grassland with several endangered species.
Starina	Natural grass community with the rare species, <i>Gentiana pneumonanthe</i> .
Sipkova	Natural exposures of flysh beds with forest and grass communities.
Slatina pod Solistom	A complex of moor-peat communities with a variety of East Carpathian species.
Pod Cerninami	Moor-peat community with the rare species, <i>Senecio rivularis</i> .

## II. MANAGEMENT OBJECTIVES AND STRATEGIES

6. The IUCN Commission on National Parks and Protected Areas recommended in its "Guidelines for Promoting Effective Management of Transfrontier Parks and Reserves", that once border parks are recognized as areas of special importance by governments, that the agencies concerned should develop a set of detailed measures for cooperative management. Significant progress has been made toward this goal through an international declaration signed on September 27, 1991 by the environment ministers of the Slovak Republic, Poland and Ukraine. This declaration provides for cooperative and coordinated activities by the three nations to manage and protect more than 163,626 ha of the Eastern Carpathians as an international biosphere reserve.

7. The Protocol agreement includes the following:

- Establishing the boundaries of the protected areas and their appropriate zones in each country according to its own legislation and guided by the UNESCO MaB biosphere reserve principles.
- Promoting and ensuring cooperative scientific research and management for the protection and restoration of the Eastern Carpathian ecosystems.
- Organizing uniform biomonitoring and protection of migratory animal species.

8. The Parties to the Protocol agreement have established a Coordination Committee which will meet when necessary to draw up programs to protect, utilize and increase the environmental potential of the biosphere reserve and to supervise the implementation of measures resulting from the Protocol. Experts may be invited to participate in the work of the Committee. Broad objectives for management of the Eastern Carpathians are embodied in the Landscape Protected Area Legislation, legislation currently being developed and in components of the Slovak Ministry of Environment's Nature Conservation Strategy. As yet specific management objectives are yet to be formulated for the area.

## TATRAS

### I. LOCATION, KEY CHARACTERISTICS AND VALUES

9. The Tatras (Vysoke Tatry) range, which is part of the Western Carpathian Mountain system, is the highest mountain range in Czechoslovakia, with Gerlach peak rising to 2,655 meters above sea level. It is located in northern Slovak along the border with Poland (see Map 1).

10. The Tatras National Park (TNP), established in 1949, is the second largest national park and the oldest national park established in the former Czechoslovakia. It covers 74,000 hectares. The Polish part, which became a national park in 1954, covers 25,000 ha. The two parks form a bilateral protected area and have been designated as a bi-national biosphere reserve.

11. Pieniny National Park, administered by the TNP authorities is located to the east of the Tatras, along the Dungec River which forms the Czech-Polish border. The Pieniny National Park and its counterpart in Poland is the oldest bilateral protected area in Europe since a nature reserve was established in Poland in 1930 and one on the Czechoslovak side in 1932.



12. The Tatra Mountains are Slovak's "Alps in miniature." Glaciers have distinctly marked the alpine landscape creating spectacular scenery and a variety of alpine habitats. There are some 20 peaks in the park which rise more than 2,500 meters above sea level, and there are more than 100 lakes of glacial origin. The western part of the massif is composed basically of granite, and the eastern (Belanske Tatry), of limestone and dolomite.

13. This area adds an important component for this GEF biodiversity project since it contains a rich and varied flora of about 1,100 vascular plant species and a fauna of about 1,300 animal species. Some of the vascular plant species are endemic. Chamois and marmots live in the highest parts, while brown bear, lynx and wolf are found in the lower forested areas.

14. Habitats of particular value in the Tatras and Pieniny to conservation include:

Tristarska dolina Valley	Unique and rich flora containing relict and endemic species.
Nefcerka Valley	Special fauna including brown bear, deer, occasional lynx, and rare and endemic beetles.
Belianska jaskyna Cave	Serves as a winter refuge for a variety of bat species including <i>Rhinolophus hipposideros</i> .
Dolina Siedmich pramenov Valley	Different forest types and a variety of rare plant and animal species on karst formations.
Velicka dolina Valley	This higher valley has a variety of forest types including <i>Pinus cembra</i> and <i>Larix decidua</i> types. The valley is noted for its rare flora and also as a habitat for chamoix, a number of colonies of marmot, and the occurrence of endemic small rodents.
Mengusovska dolina Valley	One of the largest and most beautiful valleys. It has rare vegetation types particularly in the vicinity of the lake of Velke Hincovo pleso and several other localities.
Temne smreciny Forest	Has stands of the original primeval forest types, including exceptional associations of white spruce <i>Picea abies</i> and mountain ash <i>Sorbus aucuparia</i> , and white spruce and maple <i>Acer pseudoplatanus</i> with fern and tall herb understory. Significant numbers of the Swiss stone pine <i>Pinus cembra</i> also occur in all stages of development.
Rohacske plesa Lakes	An amphitheater on gneiss, crystalline, granitic and limestone substrates, each with special flora associations.
Sivy vrch Mountain	Located in the main range of the Western Tatras, it is characterized by weathered dolomites and limestones and rare and endemic species associated with these formations.
Cervene vrchy Hills	With a mixture of alternating stratas of granite, dolomite and limestone these hills have a population of more than 250 plant species, including several rare and endemic species.
Juranova dolina Valley	Is considered to be the best dolomite-limestone area of the Western Tatras. The varied geological formations have resulted in a number of vegetation types which include rare species. There are also old stands of fir and beech forests, with the significant occurrence of the fern, <i>Phyllitis scolopendrium</i> .

SOURCE: Biosphere Reserve Nomination

## II. MANAGEMENT OBJECTIVES AND STRATEGIES

15. The Tatra National Park is administered by the Slovak Ministry of Land Management. Excellent relations have been established with the adjacent national park in Poland, reflected by the fact that the two governments have proposed the establishment of a bilateral biosphere reserve.

16. The Tatra National Park has an excellent monitoring and research record as well as information regarding environmental and biodiversity trends that will be of considerable value to the network of protected areas and the development of model conservation programs. In 1991 the Administration of the Tatra National Park became the Residence of the Associations of National Parks and Protected Landscape Areas of Slovak Republic. This organization is an IUCN member and is the Residence of the Carpathian Association of National Parks, which is a network of national parks in the Carpathian area of Hungary, Poland, Slovakia and Ukraine.

17. The main objective of the GEF project assistance to the Tatra area is to strengthen ecological research and monitoring programs in order to improve resource management that will have indications in this park as well as others with similar problems. The following GEF project components are proposed to achieve this objective and include systematic environmental investigation and monitoring, implementation of practical conservation measures and a systematic training and environmental education program.

## MORAVA

### I. LOCATION, KEY CHARACTERISTICS AND VALUES

18. The project activities, which will be carried out in close cooperation with the Czech Palava project and Austrian authorities, will be focused along the Morava River from Tvrdonice south to Bratislava, including the tributary Rudava River. It adjoins the Czech Palava project in the confluence of the Dyje and Morava Rivers. (see map 4)

#### *Key Characteristics*

19. In the agricultural landscapes of the Central European lowlands, there are remnants of natural ecosystems with a high diversity of plant and animal life. Some of the best of these habitats are found in the flood plains of the Dyje and Morava Rivers. A large part of these wetlands are covered with flood plain forests -- one of the largest and finest being located along the confluence of the Dyje and Morava Rivers.

20. Over the last millennium there have been changes in the Dyje and Morava floodplain, but radical changes have taken place since the 1960's. The floodplain forests have been reduced. The water table has dropped and spring floods have been interrupted. Large areas of meadow were ploughed up and converted into arable fields. The once continuous flood plain area has been transformed into a mosaic of remnant natural areas and areas of intensive management. Some stretches of natural river beds and fluvial processes remain, however, especially in the Morava River and its tributary, the Rudava.

21. The Rudava River is a small tributary of the Morava River in Western Slovak with a total length of about 45 km. This river and its valley contain a rich variety of natural habitats, especially in the middle section, where the stream has never been regulated. Here there are sand dunes adjoining

floodplain forests, peat bogs, meadows, marshes, and other wetland types. According to recent surveys, 505 species of vascular plants (101 of which are on the Red Data List of the Czech and Slovak Flora), more than 30 fish species (5 on the Red Data List), 11 species of amphibians (4 on the Red Data List), 48 bird species (13 on the Red Data List) and 24 mammals. Even species which are name in the whole of Europe, such as the otter and european beaver can be found here.

22. This entire region of the Dyje and Morava has a long tradition of excellent scientific studies which provide the background and preparation for currently proposed reassessments and actions needed to develop an integrated regional conservation and sustainable development plan. Several scientific institutions and a highly professional group of scientists from both the Slovak and Czech Republics are engaged in efforts to develop strategies for environmentally suitable stream, forest, agricultural and tourist management practices. The Czech GEF Palava project and this Slovak Morava project will assist in bringing these various efforts together, and will also provide support for developing environmental education programs with the communities in the region.

#### *Principle Issues*

23. The major issues for the region include: floodplain forest conservation and restoration, water regime management, agricultural practices, and over commercialization of the area form undirected and uncontrolled tourism. The principle objective will be to develop scientifically based and ecologically sound forest, stream, agricultural, tourist management and sustainable development practices for the region, with development of the then Palava, Dyje and Morava areas as a model for the region.

**SLOVAK REPUBLIC PROTECTED AREAS**

**NATIONAL PARKS**

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Mala Fatra	II	22,630	1988
Nizke Tatry	II	81,095	1978
Pieniny	II	2,125	1967
Slovensky raj	II	19,763	1988
Tatras	II	74,111	1948

**NATIONAL NATURE RESERVES**

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Choč	IV	1,428	1982
Dropie	IV	9,218	1955
Dumbier	IV	2,043	1973
Janska dolina	IV	1,696	1984
Salatin	I	1,193	1982
Tlsta	IV	3,066	1981

**PROTECTED LANDSCAPE AREAS**

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Biele Karpaty	V	43,519	1979
Cerova vrchovina	V	16,280	1989
Horná Orava	V	70,333	1979
Kysuce	V	63,462	1984
Latorica	V	15,620	1990
Male Karpaty	V	65,504	1976
Muranska planina	V	21,931	1976
Polana	V	20,079	1981
Ponitrie	V	37,665	1985
Slovensky kras	V	36,166	1973
Štiavnicke vrchy	V	77,630	1979
Strážovské vrchy	V	30,979	1989
Velka Fatra	V	60,610	1973
Vinorlat	V	4,383	1973
Vychodne Karpaty	V	66,810	1977
Zahorie	V	27,522	1988

**NATURAL AREAS**

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Demänovské jaskyne	III	1,517	1972
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**BIOSPHERE RESERVES**

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Polana	IX	20,079	1990
Slovensky Kras	IX	36,165	1977
Tatras National	IX		1992
East Carpathians	IX		1992

**RAMSAR WETLANDS**

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Čičovské mŕtve rameno	R	135	1990
Parižske močiare	R	141	1990
Senné rybniky fish ponds	R	442	1990
Šúr	R	984	1990
Morava River Floodplains	R		1993
Latorica	R		1993
Danube Floodplain	R		1993

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SLOVAK REPUBLIC  
GEF 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.

*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 three 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 per year) 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.

*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, an initial Joint Scientific Committee workshop would be held, equipment and infrastructure procurement would be underway, the GIS implementation plan completed, and the Biodiversity Protection Program initiated. The second supervision mission will take place in October/November 1993 when the work is largely in

progress, and the initial Joint Scientific Committee meeting with Polish and Slovak counterparts would be scheduled.

Proposed Staffing Pattern	Oct 1993	March 1994	July 1994	Oct 1994	March 1995	Sept 1995	Oct 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 56 staff weeks, 18 staff weeks for FY94 including provision for four weeks of office time, 16 weeks for FY95 (with three weeks for office time) and the balance of 16 staff weeks for FY96 for the wrap-up work including four weeks for office time. The estimated total supervision cost is estimated at \$35,000 for FY94, \$40,000 for FY95 and \$35,000 for FY96, for a total supervision cost estimate of approximately \$110,000<sup>1</sup> (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 12 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 14 staff weeks for the full project, which is in line with regular GEF supervision coefficients on an annualized basis (12 staff weeks per annum).

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<sup>1/</sup> Paid by the World Bank

**SLOVAK REPUBLIC**

**GEF BIODIVERSITY PROTECTION PROJECT**

**SUSTAINABLE DEVELOPMENT STRATEGY**

**STRATEGIES FOR SUSTAINABILITY (IUCN'S COMMISSION ON ENVIRONMENT AND STRATEGIC PLANNING)**

**I. INTRODUCTION**

1. Biodiversity conservation in each of the areas depends upon 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 natural resources to meet human needs, there must be organized and deliberate approaches to preparation of sustainable development strategies for the areas.

**II. OBJECTIVES**

2. Under the auspices of the SME, the Slovak Republic MaB Committee would organize workshops in cooperation with IUCN and WWF, to develop plans for the preparation of sustainable development strategies in each of the transborder biosphere reserves.

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 Slovak 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 the Slovak Republic, 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 Slovak Republic's 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 Slovak 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:

- identification of key issues by participants;
- consultation and consensus building;
- information assembly and analysis;
- policy formulation; and
- 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.

#### A. *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." (Section A and B below)

#### B. *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:

- sustainable development objectives
- the issues that need to be resolved based upon the above scientific analysis, and the information required for sound decisions.
- 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.

**C. 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:

- *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.
- *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).
- *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 sustainable.
- 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.

D. *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:

- develop an economy that is sustainable and consistent with the needs and values of the biosphere reserve and the participants;
- coordinate and allocate resources among economic sectors;
- promote each sector's sustainable development and secure its resource base;
- maintain and enhance life-support systems and biodiversity;
- improve decision-making and resolve conflicts that may arise in the future, including a mechanism for making decisions in the event of an impasse;
- reduce resource waste, and achieve a level of resource consumption.

E. *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.

F. *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.

G. *Planning and Organization of the Biosphere Reserve Support Zone Strategies*

21. Under the auspices of the National Committee for MaB, the Slovak Ministry for the Environment and 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 border countries, would participate. The purpose would be to outline the procedures and the steps necessary for the preparation of local strategies, identify the key participants, and begin to initiate the process. As indicated above, more detailed guidance can be made available by IUCN's Working Group on Strategies for Sustainability.

**SLOVAK REPUBLIC**  
**GEF BIODIVERSITY PROTECTION PROJECT**

**DETAILED COST ESTIMATES**

Investment Costs	Local	Foreign	Total	%Foreign	%Total
	------(US\$ '000)-----				
<b>A. Biodiversity Protection Program</b>					
1. Biodiversity Management	479.2	42.5	521.7	8.1	20.9
2. Planning	54.0	6.0	60.0	10.0	2.4
3. Applied Research	13.3	67.3	80.6	83.5	3.2
4. Training and Prof. Dev.	17.5	50.0	67.5	74.1	2.7
Sub-Total	564.0	165.8	729.8	44.0	29.1
<b>B. Conservation Program</b>					
1. Buffer Zone Strategies	76.5	13.5	90.0	15.0	3.6
2. C. Capacity & Rev. Mechs.	63.0	7.0	70.0	10.0	2.8
3. Demonstration Projects	100.0	0.0	100.0	0.0	4.0
4. Tri-National Trust	0.0	610.0	610.0	100.0	25.0
Sub-Total	239.5	630.5	870.0	72.9	35.4
<b>C. Institution and Infrastructure</b>					
1. Protected Area Facilities	202.3	22.5	224.8	10.0	9.0
2. Comp. & Data Management	87.0	348.0	435.0	80.0	17.4
3. Join Scientific Advisory Committ	0.0	45.0	45.0	100.0	1.8
4. Project Management	60.0	30.0	90.0	33.3	3.6
5. NGO Small Grants Program	91.0	0.0	91.0	0.0	3.6
Sub-Total	440.3	445.8	885.8	50.3	35.4
<b>Total BASELINE COSTS</b>	<b>1243.8</b>	<b>1241.8</b>	<b>2485.6</b>	<b>50.3</b>	<b>100.0</b>
Physical Contingencies	62.2	31.6	93.8	33.6	3.7
Price Contingencies	64.8	24.8	89.6	27.7	3.5
<b>Total PROJECT COSTS</b>	<b>1370.8</b>	<b>1297.2</b>	<b>2670.0</b>	<b>48.9</b>	<b>107.0</b>

NOTE: Table does not include  
complimentary Austrian EcoFund activities  
(US\$ 0.5 million)

SLOVAK REPUBLIC  
GEF BIODIVERSITY PROTECTION PROJECT

Investment Costs	Base Costs in US\$ '000				Totals Including Contingencies US\$ '000			
	1993	1994	1995	Total	1993	1994	1995	Total
<b>A. Forest restoration - Carp</b>								
Inventory of seed sources	5.3	11.0	3.0	19.3	5.7	12.1	3.4	21.2
Stand reconstruction	5.0	20.0	18.0	43.0	5.3	22.0	20.4	47.8
Cultivation and maintenance	3.8	12.0	11.7	27.5	4.1	13.2	13.3	30.6
Protection of growing stock	2.4	10.0	8.8	21.2	2.6	11.0	10.0	23.5
Sub-Total	16.6	53.0	41.5	111.1	17.8	58.3	47.1	123.1
<b>B. Planning - Carpathians</b>								
Dev. of Mgmt. Strategy	25.0	15.3	0.0	40.0	26.7	16.5	0.0	43.3
Management Plant	5.0	15.0	0.0	20.0	5.3	16.5	0.0	21.9
Sub-Total	30.0	30.0	0.0	60.0	32.1	33.0	0.0	65.1
<b>C. Catchment Protection - Carpathians</b>								
Development of Techniques	3.0	23.1	20.2	46.3	3.2	25.4	22.9	51.5
Riparian Forest Restoration	0.5	4.1	4.1	8.7	0.5	4.5	4.6	9.7
Sub-Total	3.5	27.2	24.3	55.0	3.7	29.9	27.6	61.2
<b>D. Meadow Ecosystems - Carpthns</b>								
Traditional Mgmt.	3.8	7.7	7.8	19.3	4.4	9.4	10.0	23.7
Mowing and Monitoring	2.4	6.3	6.6	15.3	2.6	6.9	7.5	17.0
Sub-Total	6.2	14.0	14.4	34.6	7.0	16.3	17.5	40.7
<b>E. Forest Restoration Tatras</b>								
Cone Dryer	35.0	0.0	0.0	35.0	37.4	0.0	0.0	37.4
Storage of Material	2.0	0.0	0.0	2.0	2.1	0.0	0.0	2.1
Greenhouse Equipment	0.0	11.0	0.0	11.0	0.0	12.1	0.0	12.1
Sub-Total	37.0	11.0	0.0	48.0	39.6	12.1	0.0	51.7
<b>F. Restoration Morava</b>								
Rest. Water Regime	50.0	50.0	25.0	125.0	53.5	55.0	28.3	136.9
Rest. of Wetlands	5.0	10.0	0.0	15.0	5.3	11.0	0.0	16.4
Rest. of River Corridors	0.0	45.0	10.0	55.0	0.0	49.5	11.3	60.9
Management of Meadows	5.0	10.0	5.0	20.0	5.3	11.0	5.7	22.0
Rehabilitation of Forests	10.0	15.0	3.0	28.0	10.7	16.5	3.4	30.6
Ex-situ Conservation	7.0	5.0	1.0	13.0	7.5	5.5	1.1	14.1
Sub-Total	77.0	135.0	44.0	256.0	82.4	148.5	49.9	280.8
<b>G. Professional Development and Training</b>								
Carrying Capacity	7.5	0.0	0.0	7.5	8.0	0.0	0.0	8.0
GIS Training and Workshop	10.0	15.0	10.0	35.0	10.7	16.5	11.3	38.5
Study Tours	5.0	15.0	5.0	25.0	5.3	16.5	5.7	27.5
Sub-Total	22.5	30.0	15.0	67.5	24.1	33.0	17.0	74.1
<b>H. Planning Morava</b>								
Biotype Mapping	12.0	0.0	0.0	12.0	12.8	0.0	0.0	12.8
Workshop	0.0	5.0	0.0	5.0	0.0	5.5	0.0	5.5
Sub-Total	12.0	5.0	0.0	17.0	12.8	5.5	0.0	18.3
<b>I. High Tatras Research</b>								
Analysis of Bioindicators	4.0	4.0	4.0	12.0	4.3	4.4	4.5	13.2
Mapping/Analysis Carbon	6.2	1.4	4.0	11.6	6.6	1.5	4.5	12.7
Telemetric Monitoring	35.0	7.0	0.0	42.0	37.4	7.7	0.0	45.2
International Center	5.0	5.0	5.0	15.0	5.4	5.6	5.9	16.9
Sub-Total	45.2	412.4	8.0	65.6	54.0	19.6	15.3	88.8
<b>Total Investment Costs</b>	<b>255.0</b>	<b>322.6</b>	<b>152.2</b>	<b>729.8</b>	<b>274.3</b>	<b>363.4</b>	<b>179.0</b>	<b>816.7</b>

1. Additional to existing government program.
2. Pilot Project - project design, implementation and evaluation.
3. Includes monitoring of species and determination of sustainability.
4. BCC Seed cone/drying station, 25-40 degree temperature amplitude.
5. Freezer and connection to back up power supply.
6. Plantation stock equipment and development of techniques.
7. Green house from Tatras admin.; temperature and moisture control equipment required.
8. Study tour of managers and local government in Europe.
9. Includes GEF Workshop and Individual Training in GIS at EPA Slovak Center.
10. Special program for planning, restoration ecology and management.

## SLOVAK REPUBLIC

### GEF BIODIVERSITY PROTECTION PROJECT

#### INTEGRATED CONSERVATION AND DEVELOPMENT PROGRAM DETAILED COST TABLE

Investment Costs	Base Costs in US\$ '000				Totals Including Contingencies US\$ '000			
	1993	1994	1995	Total	1993	1994	1995	Total
<b>A. Eco Strategy for Buffer Zones</b>								
Planning	15.0	30.0	0.0	45.0	16.1	33.2	0.0	49.3
Workshops	15.0	30.0	0.0	45.0	16.1	33.2	0.0	49.3
Sub-Total	35.0	60.0	0.0	90.0	32.3	67.5	0.0	99.8
<b>B. Carrying Capacity &amp; Research</b>								
Methodology	5.0	0.0	0.0	5.0	5.4	0.0	0.0	5.4
Feasibility Study	5.0	30.0	0.0	35.0	5.4	33.2	0.0	39.2
Implementation	0.0	10.0	20.0	30.0	0.0	11.1	22.9	34.9
Sub-Total	10.0	40.0	20.0	70.0	10.7	44.2	22.9	79.8
<b>C. Demonstration Projects</b>	0.0	30.0	70.0	100.0	0.0	33.9	83.1	117.0
<b>D. Tri-National Trust</b>								
Initial Capital	600.0	0.0	0.0	600.0	600.0	0.0	0.0	600.0
Establishment Costs	10.0	0.0	0.0	10.0	25.0	0.0	0.0	25.0
Sub-Total	610.0	0.0	0.0	610.0	625.0	0.0	0.0	625.0
<b>Total Investment Costs</b>	650.0	130.0	90.0	870.0	668.0	146.5	106.7	921.2

SLOVAK REPUBLIC

GEF BIODIVERSITY PROTECTION PROJECT

INSTITUTIONAL, INFRASTRUCTURE IMPROVEMENT PROGRAM

Investment Costs	Base Costs in US\$ '000				Totals Including Contingencies US\$ '000			
	1993	1994	1995	Total	1993	1994	1995	Total
A. Joint International Sci.Cttes	15.0	15.0	15.0	45.0	16.0	16.5	17.0	49.6
B. Computerizatton & Data Mgmt								
Tatras	22.0	100.0	27.0	149.0	23.6	110.6	30.9	165.1
Slovak Institute	45.0	0.0	0.0	45.0	48.2	0.0	0.0	48.2
East Carpathians	83.0	0.0	0.0	83.0	88.9	0.0	0.0	88.9
Morava	40.0	48.0	0.0	88.0	42.8	42.8	53.1	95.9
Electronic Mail Systems	40.0	15.0	15.0	70.0	42.8	16.6	17.2	76.6
Sub-Total	230.0	163.0	42.0	435.0	246.4	180.3	48.1	474.8
C. Protected area facilities								
Radio Coms - Tatras	12.5	13.3	14.0	39.8	13.4	15.0	16.5	45.0
Radio Comms - E. Carpathians	20.0	0.0	0.0	20.0	21.5	0.0	0.0	21.5
Completion of Tatras Center	11.0	3.0	21.0	35.0	11.8	3.4	24.8	40.0
Education/Res. Ctr - Carpathians	10.0	110.0	10.0	130.0	10.8	124.0	11.8	146.5
Sub-Total	53.5	126.3	45.0	224.8	57.5	142.4	53.2	253.1
D. NGO Small Grants Program	33.0	33.0	25.0	91.0	35.5	37.3	29.7	102.5
E. Project Implementation								
PMCU	20.0	20.0	20.0	60.0	21.5	22.3	23.2	67.0
PCU	10.0	10.0	10.0	30.0	10.8	11.3	11.9	33.9
Sub-Total	30.0	30.0	30.0	90.0	32.2	33.6	35.1	100.9
<b>Total Investment Costs</b>	<b>361.5</b>	<b>367.3</b>	<b>157.0</b>	<b>885.8</b>	<b>387.7</b>	<b>410.1</b>	<b>183.0</b>	<b>980.7</b>











3. Institutional, Infrastructure Improvement Prog														
A. Computerization and data management														
- Equipment purchase and installation	■	■	■											
- Establishment of electronic mail system			■										■	
- Evaluation														
B. Protected Area Facilities														
- Design of radio facilities	■													
- Purchase & installation of radio facilities			■											
- Design of education center	■	■												
- Construction of education center			■	■	■	■	■							
- Purchase and installation of equipment								■						
- Completion of Tatra center			■											
C. NGO Small Grants Programs														
- Establishment of administration	■													
- Workshops	■													
- Grant Programs		◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
- Evaluation				■					■				■	



SLOVAK REPUBLIC  
GEF BIODIVERSITY PROTECTION PROJECT

**COSTING DETAILS**

1. Project Management Coordinating Unit (Bratislava)

Project Manager	\$5,500	\$16,500
Asst. Manager	\$4,500	\$13,500
Bookkeeper/Sec.	\$4,500	\$13,500
 Travel/Subsistence		 \$17,500
Project Vehicle		\$ 8,000
Office Equipment/Furn.(incl. computer equip)		\$11,000
Office Operating Costs(3 yrs)		\$ 6,000

2. Project Coordinating Units (for 3 years)

Tatra's	\$10,000	
Carpathians	\$10,000	
Morova	\$10,000	

3. Regional Scientific Committees (3 committees for 3 years)

	\$15,000	\$45,000
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4. Equipment (partial listing only) -- Based on current industry standards and prices, cost estimates were derived for budget planning purposes.

*Research*

(a) Analysis of bioindicator species including bird feathers and bones, with an emphasis on heavy metals.

PARAMETER	PRICE/SAMPLE	SAMPLE SIZE (BONES)	NUMBER OF SAMPLES	TOTAL	
Cd(1CCAP)	USD 70	10 g	10	USD	700
Pb(GFAA)	USD 50	10 g	10	USD	500
Pb(GFAA)	USD 50	0.5 or 2 or 10 gms	210	USD	10,500
Sample preparation services, where needed; shipment; sample storage charges; disposal of hazardous samples, and other sample handling				USD	300
<b>TOTAL</b>				<b>USD</b>	<b>12,000</b>

- (b) Mapping and analysis of mesozoic carbonate rocks and their influence on natural communities of the karst ecosystems.

Analyser	\$ 6,210
Digital psychrometer	\$ 345
Thermometer	\$ 1,034
Altimeter	\$ 51
Chemical analysis	\$ 3,448
Devices construction	\$ 172
Cooperation	<u>\$ 310</u>

**TOTAL** \$ 11,570

- (c) Components for telemetric monitoring of endangered species of animals.

• 3 recapture collars	USD 5,047
• 18 recapture dart kits	3,150
• triggering transmitter	2,395
• 3 battery pack replacement	585
• Tags for 20 birds, antenna, receiving equipment harness materials, etc.	USD 10,200
Video camera	USD 2,500
Stereo microscope	USD 16,000
Balances, nets, rings	
• nets	USD 950
• balances	USD 100
• rings	USD 200

**TOTAL** USD 41,927

- (d) Establishing the High Tatra Research Center as an international distribution center for information on current activities in conservation-environmental science.

Data base subscription	\$ 1,200
Assistance with salaries and distribution of documentation	\$ 6,000
Conference and workshops	<u>\$ 7,800</u>

**TOTAL** \$ 15,000



(e) Monitoring Equipment

Microwave sample preparation system	\$ 17,000
Specol UV-VIS	\$ 11,200
Plant Efficiency analyser	\$ 5,000
Total	<u>\$ 33,200</u>

(f) Monitoring Information Systems

486/50 PC, or equivalent, with color monitor and printer	\$ 12,656
386/33 PC, or equivalent	\$ 3,433
386/33, or equivalent, printer	\$ 3,297
386/33, or equivalent, without printer	\$ 3,040
TOTAL	<u>\$ 22,426</u>

(g)	GIS Workstations and software no. 1	\$ 49,329
	no. 2	\$ 49,263
	Installation	\$ 833
	Color Monitor and Printer A <sub>3</sub>	\$ 6,272
	Printer A <sub>4</sub>	\$ 3,297
	Options:	\$ 20,178

Education Centers	
Video Camera	\$ 6,400
Digital Production Mixer	\$ 3,800
Video recorder	\$ 700
Software Photostiler	\$ 1,900
386 SEL, XGA, Card Film Motion Adapter Touch Screen	\$ 17,858
Real Extention Card	\$ 197
CD ROM	\$ 1,786
Applications	\$ 3,000

(h) Radio Equipment

Spare Sources for portable transmitters	
ICH 16 Tn (70 pieces)	\$ 11,525
Boxes for portable transmitters (70 pieces)	\$ 1,050
Portable transmitters (19 pieces)	\$ 13,346
Control instrument	\$ 733
Portable transmitters (13 pieces)	\$ 13,346

## SLOVAK REPUBLIC

## GEF BIODIVERSITY PROTECTION PROJECT

**GEF PROPOSED PROGRAM FOR THE  
UKRAINE SEGMENT OF THE EASTERN CARPATHIAN TRI-NATIONAL RESERVE**

1. The Eastern Carpathian Mountains along the borders of the Slovak Republic, Poland and Ukraine contain some of the least disturbed ecosystems in Eastern Europe. The Carpathians contain one quarter of the flora of Europe and many endemic plants useful to mankind such as medicinal plants. The largest remaining stand (10,900 ha) of virgin beech forest is present in the Carpathians. This is a remarkable natural resource for the rest of Europe, which has lost such undisturbed areas. A part of the East Carpathians has been formally designated by Ukraine as the Carpathians Biosphere Reserve under the UNESCO Man and the Biosphere Program.
2. **Carpathians Biosphere Reserve** Within the Ukrainian Carpathians are some unique preserved areas of beech and spruce forests of significance for analyzing the development history of the East Carpathians vegetation. The first reserve of beech and fir-beech forests was created in 1932 on the Stuzica mountain slopes. Since that time the reserve has been enlarged to 2,952 ha and included in the Ukrainian Carpathians Biosphere Reserve (CBR). The CBR was created in 1991 with a total area of 38,930 ha, which is subdivided into a reserve zone (21,879 ha), a buffer zone (8,949 ha), and a conservative nature management zone (8,071 ha). The reserve zone includes the Stuzica scenic reserve and four separately located forest or alpine areas. These areas are the Khust forest, the Uglya-Shyroky Lug forest, the Chernogirs'ky forest and the Maramoros'ky massif.
3. **The Stuzica Reserve** is located on the border with Slovakia and Poland at a range of between 770 to 1269 m (ASL). Flora of the reserve forest includes over 500 species of vascular plants many of which are rare. The beech has a wide altitudinal range (500-1260m).
4. **The Khust Reserve Massif** is a small area of forest (256 ha) at 180-200 m ASL and is the largest European locality for the narrow-leaved narcissus. In addition to the narcissus, there are many other rare plants.
5. **The Ugolsko-Shyrokoluy Lansky Massif** has an area of 10,350 ha and is located at elevations ranging from 400 to 1280m on the Polonya ridge. The beech forest extends to 1280 m. Although the majority of the ridge is flysch, a limestone ridge is contiguous with the flysch on the south side. This limestone ridge results in specific flora and fauna associated with caves in the karst system. The forest contains about 550 species of vascular plants.
6. **The Chornogirs'ky Reserve Massif** is located on the Chornogorsky ridge at elevations from 800m to 2061m (ASL) and has seven identifiable plant profiles associated with elevation. The forest flora numbers more than 700 vascular plant species. Fauna comprise many rare and commercially valuable species.

7. **The Maramoros'ky Reserve Massif** has a total area of 3,970 ha with well defined glacier cirques at the higher elevations. The slopes of the cirques are covered with thickets of *Pinus mugo* and *Duschekia viridus*. The geology includes schists, gneiss and marble-like limestone of the Jurassic period which determines the vegetation and to some extent the fauna.

8. Surrounding each of the reserves are buffer zones which decrease the impact of human induced activity on the protected areas by restricting the extent and nature of some uses.

9. As a result of a recent agreement (September, 1991), the Environment ministers of Ukraine, Poland and Slovakia propose to develop a tri-national biosphere reserve. This international reserve would include expansion of the Stuciza reserve and the creation of a national park on the Ukraine area of the Eastern Carpathian. The table below indicates the preliminary areas identified for the international reserve. Considerable investigation and preparation is required to make the proposal a reality.

**Proposed Eastern Carpathians Tri-National Biosphere Reserve**

Country	Reserve	Area (ha)
Ukraine	Stuzice National Park (presently 2,000 ha)	14,300
Slovakia	Vychodne Karpaty - protected landscape park (future national park)	40,601
Poland	San River Valley Landscape Park Cisna-wetlina Landscape Park and Bieszczady National Park	35,635 46,025 27,065
<b>TOTAL:</b>		<b>163,626</b>

10. This add-on project to the Slovak GEF project will provide the essential funds required to implement the declaration which calls for consistent management approaches for the reserved areas in all three countries. The parties to the agreement have established a Coordination Committee which will meet when necessary to protect, utilize and increase the environmental potential of the biosphere reserve and to supervise the implementation of programs resulting from the declaration.

11. This further GEF project will be a part of the first phase of Ukraine's long term effort to protect its forest ecosystems. It will initiate programs to conserve the biodiversity of key endangered forests in the Eastern Carpathian system and will provide institutional support to the Ministry of Forestry and the Ministry of Environment to undertake biodiversity conservation management activities, which will include a range of in-situ and ex-situ techniques.

12. The project has been accorded high priority by the 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.

13. **GEF Project Objectives.**

The objectives of this project will be to:

- (a) incorporate this small Ukrainian GEF project (\$500,000) as an add-on to the proposed Slovakia Biodiversity Protection Project (GEF \$2.3 million). The innovation being supported under the Ukrainian project is threefold: this would be the first GEF project in the Ukraine, the first trilateral transboundary project supported under the GEF and the first three- country Trust Fund to be organized for biodiversity protection. The MacArthur Foundation of Chicago, Illinois has indicated its willingness to contribute \$300,000 to initiate this Tri-Lateral Carpathian Biodiversity Protection Trust Fund. This Foundation has provided \$26,000 to date to the Ukrainian Ministry of the Environment to initiate the planning and preparation of this Trust.
- (b) support the Ukrainian portion of the overall trilateral (Ukraine, Poland and Slovakia) program to protect habitat fragments, stop species loss and upgrade habitat management.
- (c) develop and implement the legal, institutional and administrative interventions to achieve the long term protection of the area in Ukraine as well as in Poland and Czechoslovakia.

#### 14. GEF Project Description.

To meet these objectives, the following investments are proposed:

- (a) a *Biodiversity Protection Program* will initiate a range of activities including: financial support for an inventory of forest fragments and their biological and legal status, a systems extinction model, support for genetic studies, development of GIS capability and support for a Trans Carpathian Planning Group. The program will include the development of a national policy on incentives and easements for select land uses around the protected areas. To ensure the longer term maintenance of some of these innovative approaches, a plan and curriculum will be developed for the inclusion of the study of conservation biology in the tertiary forestry curricula, as forestry is the base qualification for most of the mountain natural resource managers;
- (b) a *Management Resources Program* to enable coordinated management of the discontinuous reserved areas of the Carpathians Biosphere Reserve and the implementation of the above protection program. These investments will include: (i) computer equipment and GIS facilities, (ii) provision of transport and communications for enforcement, protection and management, and (iii) limited assistance with demonstration activities;
- (c) a *Training Program* that will include development of communications skills (extension, public education, interpretation and media relations) language training, data base and computer training, park planning and management training; and,
- (d) A *Management Program* that will include assistance to support the Ukraine GEF unit (for the Danube Delta GEF and this project) within the Department of Protected and

Recreation Areas, and the establishment of a Project Unit at the Carpathians Biosphere Reserve administrative center in Rakhiv.

15. The Ukraine project described above is at an advanced stage of preparation and it is hoped that it will be finalized at the same time as the Slovak GEF project.

## THE SLOVAK REPUBLIC

## GEF BIODIVERSITY PROTECTION PROJECT

**BIODIVERSITY SMALL GRANTS PROGRAM & ENVIRONMENTAL NGOS**

1. A modest pilot program to support small grants to Slovak environmental non-government organizations is provided under this project. A total of \$100,000 is included for grants, up to US\$7,000, to an estimated twenty (20) Slovak environmental non-government organizations (NGOs).

2. *Goals and Objectives.* The goal of this component is to foster innovative initiatives by the NGO environmental community in fostering biodiversity protection projects throughout the Slovak Republic. The objective of this component is to support the expansion of local non-governmental organizations as well as to their involvement with local communities to protect endangered biodiversity in the Slovak Republic. Specific objectives include:

- (a) To strengthen new and emerging NGOs in the Slovak Republic to promote biodiversity conservation particularly in the areas of land stewardship, wildlife protection, and conservation of forests, rivers and wetlands,
- (b) To assist these NGOs reach out to a broad range of citizens in their communities and work productively with other sectors (e.g., government, business and academic institutions) so that they can broaden the impact of their work and more effectively involve citizens in environmental problem-solving.
- (c) To develop the leadership of these NGOs by exposing key staff and volunteers to new approaches and innovations in conservation and by helping them to develop professional skills, problem-solving abilities and self-confidence which will enable them to be more effective in their work;
- (d) To improve the institutional management capacity of Slovak NGOs through training and on-site assistance in areas such as strategic planning, project management and fundraising which will help these groups grow toward independence from outside assistance;
- (e) To foster a two-way exchange of ideas between American and Central European conservation professionals and citizen activists working on similar environmental issues;
- (f) Broadly, to contribute to the development of institutions important to a strong civil society in Central Europe and capable of addressing environmental problems in the region.

3. The grant program would be administered by the Department of Nature and Landscape Protection (GEF Project Management and Coordination Unit) of the Ministry of Environment Protection.

4. *Biodiversity Grant Management.* A voluntary **Advisory Board** of three persons to the GEF Project Management and Coordination Unit would be established under the project. This Board would comprise a Chairman (a non-Ministry Slovak Biodiversity Specialist ), the Director of the Nature and

Landscape Protection Department of the Ministry of Environment and a biodiversity specialist from the NGO community in the Republic. The Executive Secretary will be Project Manager of the GEF PMCU.

5. This Biodiversity Small-Grants Advisory Board will make its decisions independent of the PMCU, be multi-disciplinary and have the authority to recommend to the PMCU the final grant selections.

6. *Executive Secretary to the Biodiversity Advisory Board.* The Coordinator of the PMCU of the GEF Project shall also be the Executive Secretary to the Biodiversity Grant Advisory Board. The Executive Secretary shall undertake the following duties, inter alia in implementing this component:

- (a) publicize the program and solicit grant applications. Host a training workshop to brief interested NGO groups in developing an application.
- (b) respond to questions and inquiries from NGOs, local officials and the media.
- (c) as appropriate, make pre-selection site visits to interested NGO groups
- (d) process applications in a timely fashion to submit to the Advisory Board for a decision.
- (e) disburse the grant funds in the two tranches specified in para.

7. *Eligibility.* Applications would only be eligible from non-government organizations registered in the Slovak 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.

8. *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 recipient of grant requests.

9. *Grant Period* Grants will be made for a period up to 12 months.

10. *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.

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

12. 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

13. *Priority.* 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 communities.

14. *Application.* The formal proposal (not to exceed 10 pages of main text and no greater than 15 pages of supporting documentation) 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)

15. *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.

16. *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 Advisory Board 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 Advisory Board 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 the Environment and the GEF.



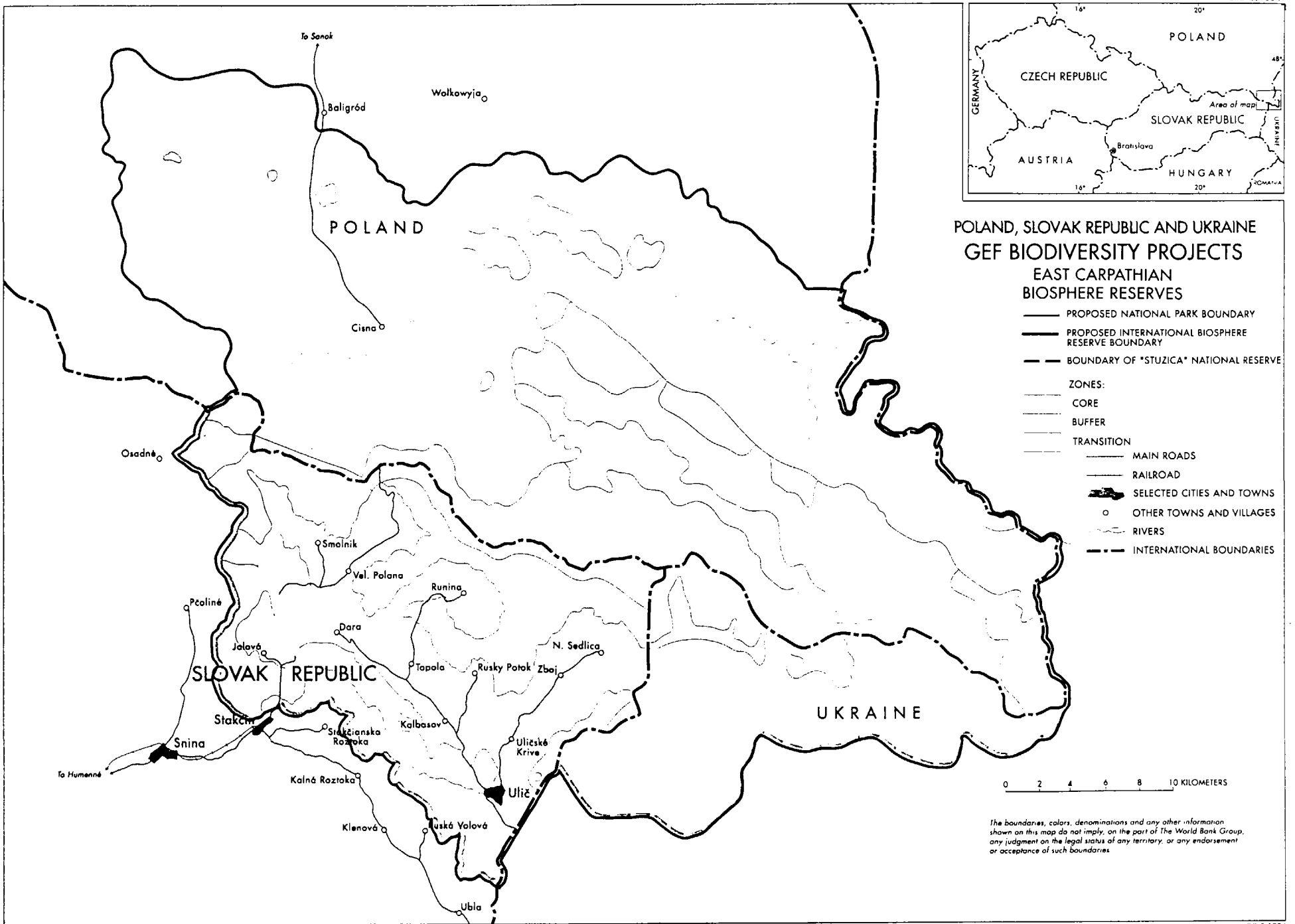
# SLOVAK REPUBLIC GLOBAL ENVIRONMENT FACILITY BIODIVERSITY PROJECT AREAS

- APPROXIMATE PROJECT AREAS
- TRANSBORDER AREAS FOR COOPERATION
- MAJOR TOWNS AND VILLAGES
- ⊙ REGION CAPITALS
- ⊕ NATIONAL CAPITAL
- MAIN ROADS
- ⋯ RAILROADS
- ~ RIVERS
- - - INTERNATIONAL BOUNDARIES

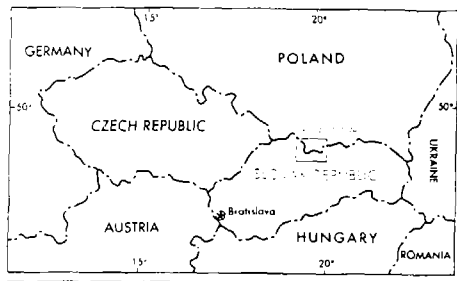


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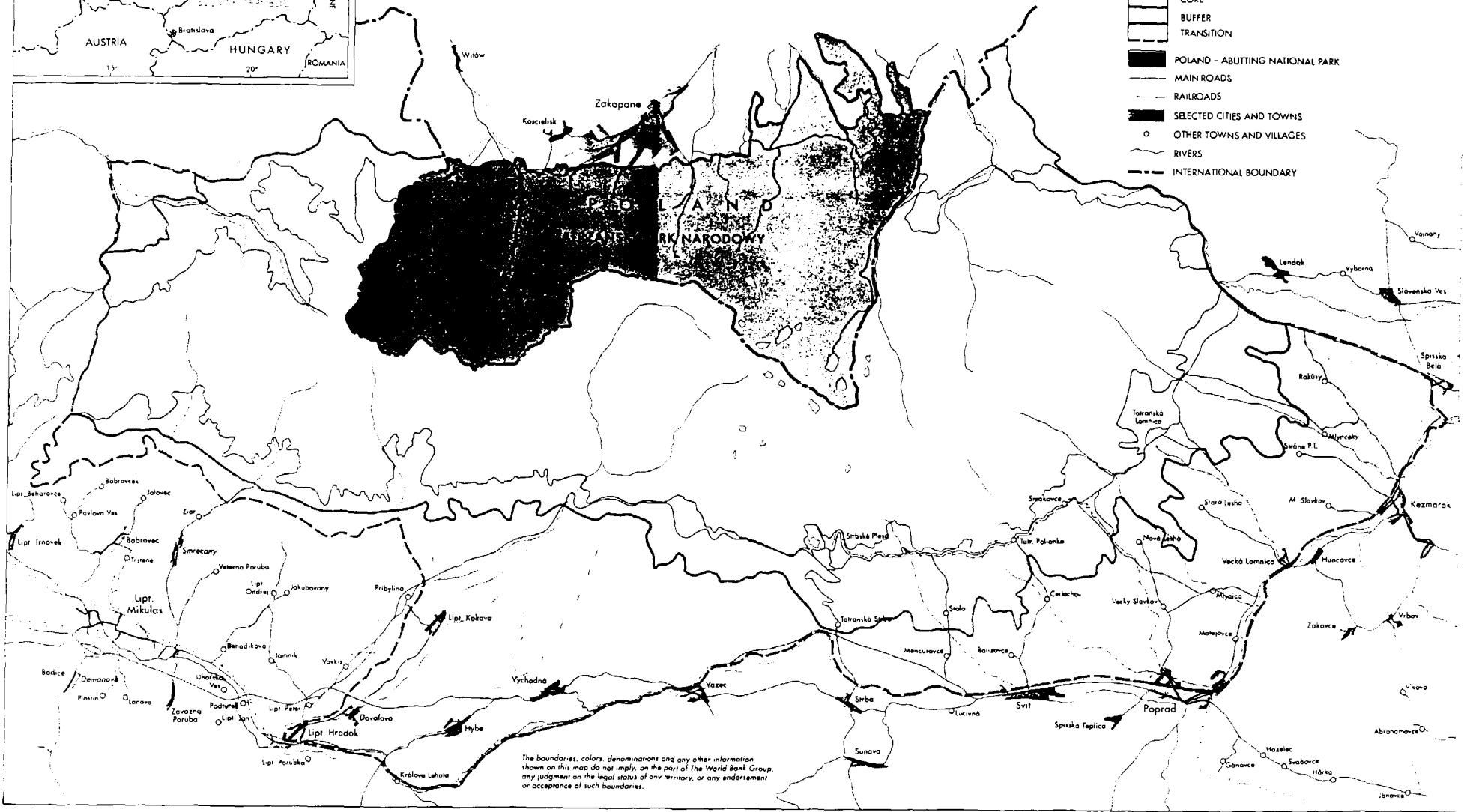






# SLOVAK REPUBLIC GEF BIODIVERSITY PROJECT TATRAS BIOSPHERE RESERVES

- NATIONAL PARK BOUNDARY
- - - BOUNDARY OF NATIONAL PARK PROTECTION ZONE
- ZONES:
- CORE
- BUFFER
- TRANSITION
- POLAND - ABUTTING NATIONAL PARK
- MAIN ROADS
- RAILROADS
- SELECTED CITIES AND TOWNS
- OTHER TOWNS AND VILLAGES
- RIVERS
- - - INTERNATIONAL BOUNDARY



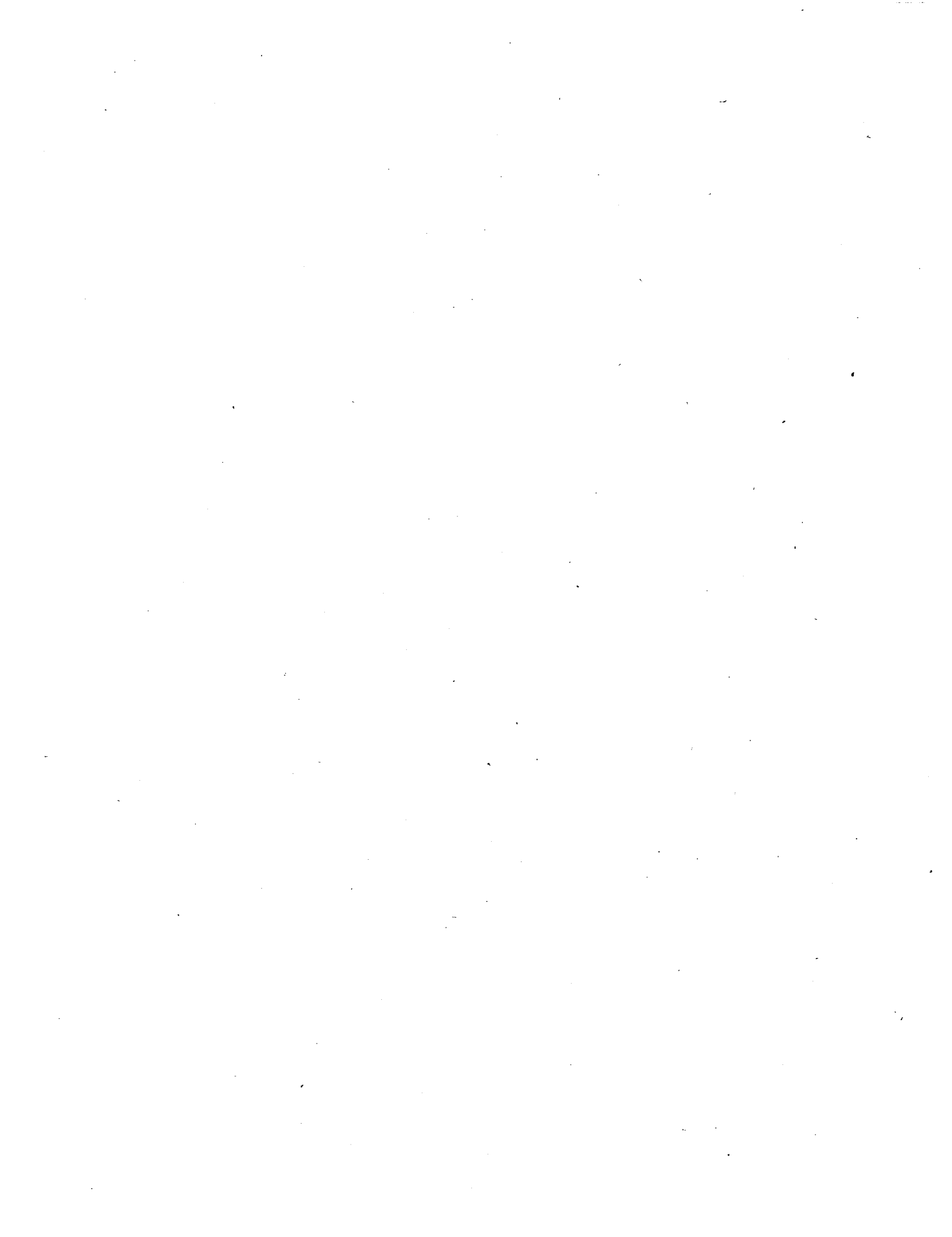
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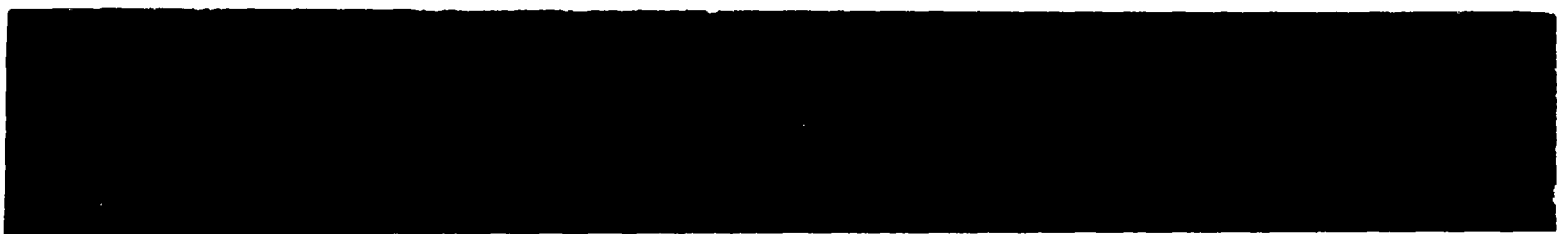












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