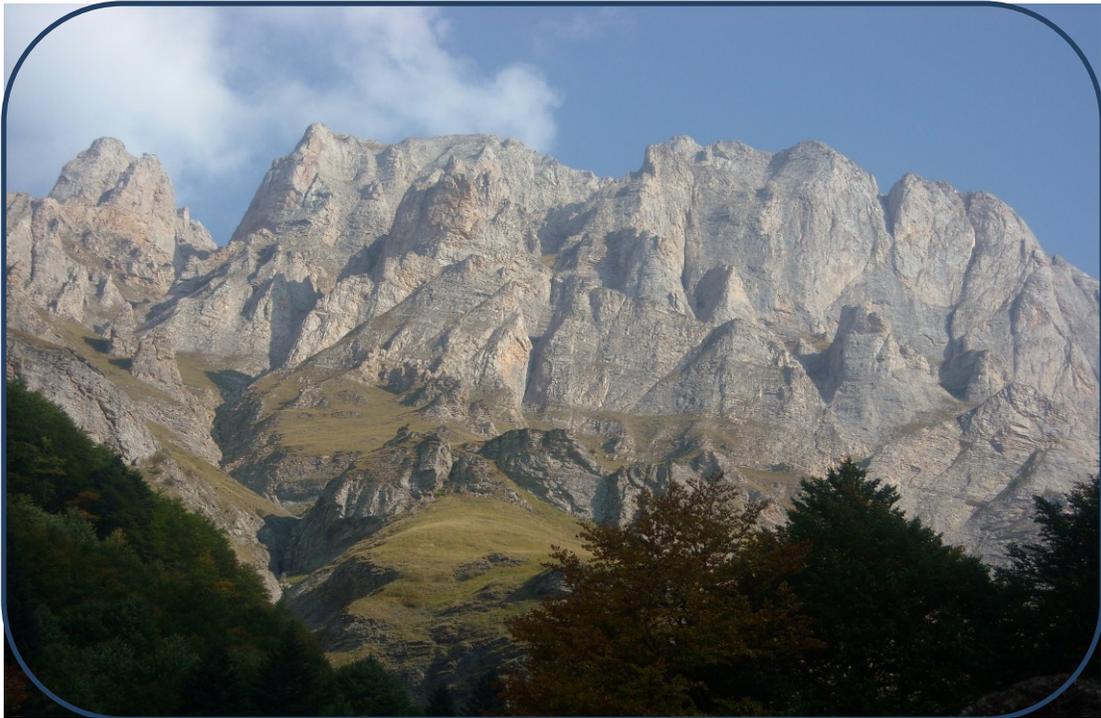


Action Plan for Implementing the Programme of Work on Protected Areas of the Convention on Biological Diversity



REPUBLIC OF MACEDONIA

12. 06. 2012

Protected area information:

PoWPA Focal Point

Sashko Jordanov, M.Sc.

Head of Unit for Natural Heritage Conservation, Department of Nature, Administration of Environment, Ministry of Environment and Physical Planning

tel. +389 2 3251 471

Fax. +389 2 3220165

E-mail: S.Jordanov@moepp.gov.mk

Lead implementing agency

Ministry of Environment and Physical Planning, Administration of Environment
bul Goce Delcev 8,
1000 Skopje
Republic of Macedonia

Multi-stakeholder committee:

1. Other Stakeholders

- Ministry of Agriculture, Forestry and Water Economy
Department of Forestry and Hunting
- Ministry of Economy
- Ministry of Culture
- Ministry of Transport and Communications

2. Management Authorities of the Protected Areas

- Public Administration National Park Pelister, Bitola
- Public Administration National Park Galicica, Ohrid
- Public Administration National Park Mavrovo, Mavrovi Anovi
- Public Enterprise for management and conservation of Multipurpose area "Jasen"
- Local governments (designated as management bodies for some protected areas)

3. Public Institutions

- Macedonian Museum of Natural History, Skopje
- Faculty of Natural Sciences and Mathematics, Institute of Biology, Skopje
- Faculty of Agriculture and Food, Skopje
- Faculty of Forestry, Skopje
- Hydro-biological Institute, Ohrid

4. NGOs with main activities in Nature protection

- Macedonian Ecological Society (MES), Skopje, E-mail: mes@iunona.pmf.ukim.edu.mk
- BioEco, Skopje, E-mail: bioeco@unet.com.mk
- Macedonian Mycological Society (MMS) Skopje, E-mail: mitkok@iunona.pmf.ukim.edu.mk
- Bird Study and Protection Society of Macedonia (BSPSM), Skopje, E-mail: brankom@ukim.edu.mk

Description of protected area system

Coverage

Republic of Macedonia, situated in the central part of the Balkan Peninsula, covers an area of 25.713 km². Of the total territory of the State, 40% is forest and forest land, 51% is agricultural, and 9% is unproductive land.

Notwithstanding the fact that the territory of the Republic of Macedonia covers only 0.26 % of the European Continent (9.957.000 km²), a huge portion of European biodiversity is concentrated within this small area that ranges: from 33.64% of vascular plants, 14% of the freshwater fish species, 20.3% amphibians, 25.2% reptiles, 64% birds and 29% of mammal species.

On regional scale, the biodiversity of Macedonia, in diverse taxonomic groups, covers 70-90% of the entire Balkan biodiversity (Kottelat & Freyhof, 2007; Gasc et al., 1997; Harrison, 1982; Mitchell-Jones et al., 1999).

Namely, based on the available scientific research, four key ecosystems have been established: forest, mountainous, aquatic/wetland and dryland/grassland ecosystems.

Species diversity is represented by over 18.000 taxa of wild flora, fungia and fauna, and more of 900 species are endemics. The total number of species recorded on the territory of the Republic of Macedonia is around 17.604 species, of which 1.053 species of Fungi, 354 species of Lichens, 2.169 species of Algae, 3.674 species of vascular plants and 10.354 faunal species.

Under Law on Nature Protection, the system of protected areas is established for the purpose of biological diversity protection within natural habitats, processes going on in nature, as well as abiotic characteristics and landscape diversity. By declaring an area for protected, it acquires the status of natural heritage.

In the Republic of Macedonia, network of protected areas includes 81 areas, with a total area of 231385.6 ha, so that they account for about of 9 % of the national territory.

Aquatic protected areas are represented by three natural lakes (Ohrid Lake, Prespa Lake and Doyran Lake) that are declared as monuments of nature and occupy about 1.7 % of the national territory.

Terrestrial protected areas occupy about 7.31% of the national territory. They are represented with national parks (occupy 4.5 % of the national territory), monuments of nature (occupy 1.04

of the national territory) and other categories of protected areas (occupy 1.77% of the national territory).



Figure 1 - Main Protected Areas in Macedonia

Description and background

National Network of Protected Areas

The basic legal act regulating the protection of the natural heritage in the Republic of Macedonia is the Law on Nature Protection (Official Gazette of the Republic of Macedonia No.67/04, 14/06, 84/07, 35/10, 47/11 and 148/11).

The Law regulates nature protection by protecting biological and landscape diversity, protection of the natural heritage in protected areas and outside of protected areas and protection of the natural rarities.

The Law on Nature Protection which incorporates the criteria of the International Union for Conservation of Nature (IUCN) concerning protected areas categorization, provides for the establishment of the following six categories of protected areas:

- 1) Category I
 - 1a. Strict Nature Reserve
 - 1b. Wilderness Area
- 2) Category II - National Park
- 3) Category III - Monument of Nature

- 4) Category IV - Nature Park
- 5) Category V - Protected Landscape
- 6) Category VI - Multi-Purpose Area.

According to the Law on Nature Protection, Ministry of Environment and Physical Planning, Administration of Environment has obligation to revalorize the protected areas that have been under protection since before the enactment of this Law (2005), and prepare draft new acts of proclamation in accordance with the provisions of this Law. The process of revalorization and re-proclamation of protected areas is not yet completed.

Table 1. Number and area of protected areas in the period 1948-1998

Year protected	Number of protected areas	Area (in ha)	% of the total national territory
1948-1960	11	131.599	5.11
1961-1998	58	52.538	2.04
Total:	69	184.137	7.15

According to the data presented above, 11 areas and objects were protected in the period between 1948 and 1960 as natural rarities in Macedonia on the basis of the Law on Protection of Monuments of Culture and Natural Rarities applicable in that period, with a total surface area of 131.599 ha (5.11 % of the national territory). Under the Law on Natural Rarities Protection enacted in 1960 and its amendments in 1965 and 1973, respectively, additional 58 objects were protected, by which the total number of protected areas and objects reached 69 with a total area of 184.137 ha (7.15 % of the territory of the Republic of Macedonia).

Upon the establishment of separate Ministry of Environment (December 1998), the process of the natural heritage protection continued in the period 1999-2008. The adoption of the Law on Nature Protection in 2004, transposing the European directives related to natural heritage protection, is of particular significance. Data on protected areas in this period is presented in the table below.

Table 2. Number and area of protected areas in the Republic of Macedonia (2008 status) *

Protected area	number	area (in km ²)	% of the territory of the Republic of Macedonia
National park	3	1130.0	4.4
Strict nature reserve	4	126.8	0.5
Landscape of outstanding natural characteristics	3	23.4	0.1
Individual flora and fauna species	12	26.5	0.1
Monument of nature	60	634.3	2.5
Multi-purpose area	1	279.5	1.1

Total	83	2220.5	8.7
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* The analysis was made under the old categorization of protected areas, which included the following categories of protected areas: National park, strict nature reserve, landscape of outstanding natural characteristics, individual flora and fauna species outside protected areas and monument of nature.

Data in Table 2 indicate that protected areas in the Republic of Macedonia occupy around 8.7 % of the national territory. Major part belongs to national parks with around 4.4 %, followed by monuments of nature with around 2.5 % and multi-purpose area Jasen with around 1.1 % of the national territory. Relatively small territory (0.5%) is covered by strict nature reserves, the smallest with around 0.1%, which are the categories of landscape of outstanding natural characteristics and individual flora and fauna species.

Upon the finalization of the revalorisation of the natural heritage of the Republic of Macedonia, the objects of nature included in the categories landscape of outstanding natural characteristics and individual flora and fauna species will be incorporated into the above mentioned six categories of protected areas under the Law on Nature Protection.

Table 3 Number of protected areas by category of protection (2012 status)

Category of protection under IUCN	Number of areas	Area (ha)	% of the national territory
Strict Nature Reserve	3	11480.73	0.45
National Park	3	115713.2	4.50
Natural Monument	57	70423.97	2.74
Park of Nature	14	1457.53	0.06
Protected Landscape	3	5387.12	0.21
Multy-Purpose Area	1	26923.03	1.05
Total	81	231385.6	9.00

National network of protected areas includes 81 areas with a total area of 231385.6 ha. Protected areas cover about of 9 % of the national territory. At present, the first four categories of protected area (strict nature reserve, national park, monument of nature and park of nature) have been established in the Republic of Macedonia and there is only one multi-purpose area (Jasen), while fifth category of protected area - Protected landscape has not been established yet.

Because of the current transitional state of the system of protected areas (areas designated under the old categorization, areas designated under the new categorization, re-designated areas, areas in a process of re-designation, areas in a process of designation), network of protected areas includes all protected areas in the Republic of Macedonia, designated both under old and new categorization.

UNESCO SITE

At international level, UNESCO's List contains the Ohrid region as world cultural and natural heritage (1979), while the Tentative List of UNESCO has enrolled the monuments of nature Markovi Kuli and the Cave of Slatino Springs (2004).

RAMSAR SITE

The Ramsar List of wetlands of international importance contains Prespa Lake (1995) and Dojran Lake (2008).

NATIONAL EMERALD NETWORK

In accordance with the provisions of the Convention on the Conservation of European Wildlife and Natural Habitats (Bern, 1979) and the Law on Nature Protection, four projects that aim to establish the National Emerald Network in the Republic were implemented between 2002 and 2008. The National Emerald Network comprises total of 35 sites covering 29 % of the country's territory. This network covering total 12 protected areas: Strict nature reserve - Tikvesh; National parks (Pelister, Mavrovo and Galicica); Monuments of nature (Ohrid Lake, Prespa Lake, Dojran Lake, Matka, Markovi Kuli Orlovo Brdo and Smolari Waterfalls) and Park of Nature-Ezerani.

Identification of sites was done taking into consideration the provisions of the Convention, based on the criteria given in the Recommendation No. 16 (1989) and on the habitats and species listed in Resolution No. 4 (1996) and Resolution No. 6 (1998) of the Bern Convention. Of the total number of 187 endangered habitats requiring specific conservation measures listed in Resolution No. 4 (1996) of the Bern Convention, 32 endangered habitats have been identified in Macedonia. According to Resolution No. 6 (1998), which lists 927 European species requiring specific habitat conservation measures, 167 are present in Macedonia: 7 invertebrate, 13 fish, 3 amphibian, 7 reptile, 115 bird, 17 mammal and 5 plant species.

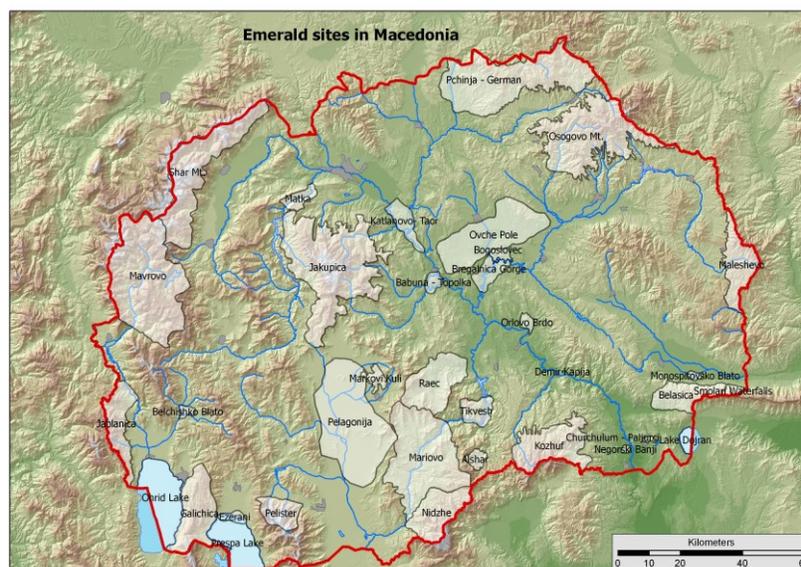


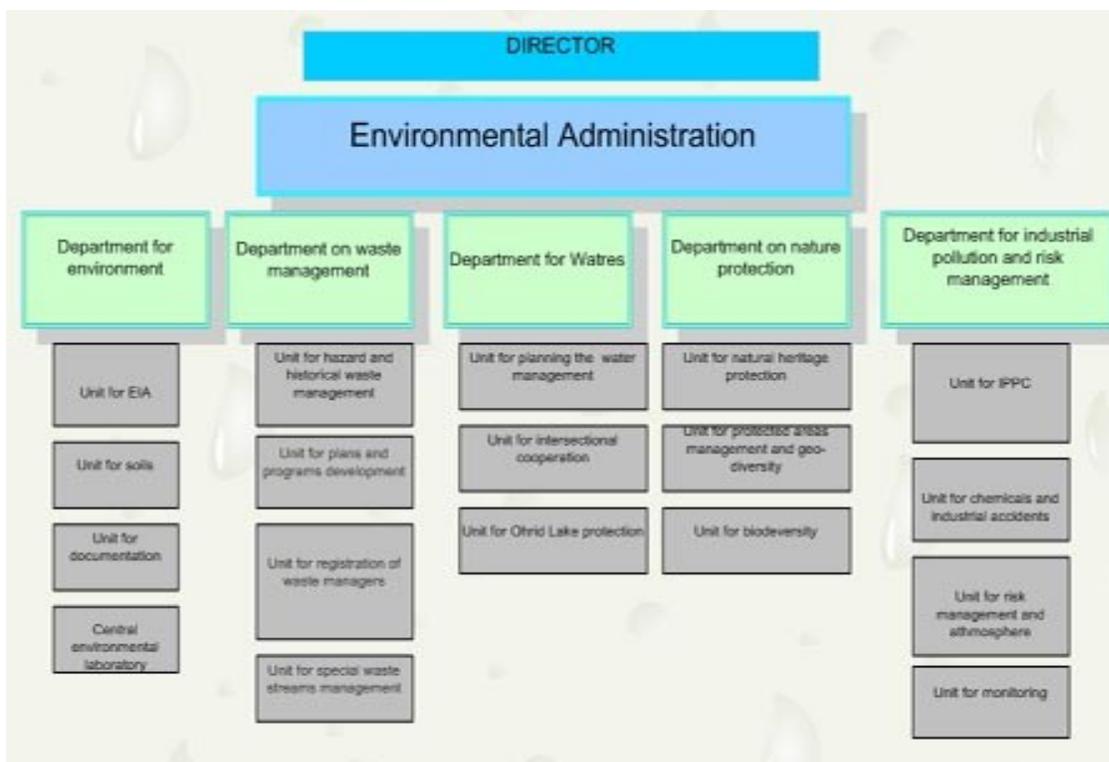
Figure 2 - National Emerald Network of the Republic of Macedonia

Governance types

Protected area governance and management

The Ministry of Environment and Physical Planning (MEPP) is responsible authority for the execution of the works in the field of nature protection in accordance with the provisions of the Law on Nature Protection. MEPP performs the works relating to policy making and implementation in the field of nature protection, protection of biological and landscape diversity and protection of natural heritage, management of biological and landscape diversity and natural heritage; and control and supervision over the enforcement of the provisions of this Law.

The main responsibility for protected areas and biodiversity lie within the Administration for the Environment, Nature Protection Department.



The Law on Nature Protection established the administrative structure for management of national parks and other protected areas.

- Management and conservation of Protected Areas is carried out by entities responsible for management provided in a manner determined by the act of this law declaring.
- Management, supervision, and protection of the national parks shall be carried out by public institutions - National Park in accordance with the provisions of this Law and the act for proclamation of the national park. This includes establishment of Public

Institutions – National Parks, a separate entity for each national park, which are responsible for management and protection of the parks. These are: Public Institution National Park Mavrovo, Public Institution National Park Pelister, and Public Institution National Park Galicica. The legal mandate for the public institution administering and carrying out management of a national park includes monitoring and direct protection of the national park, implementation of management practices stipulated in the management plan, enabling and facilitating scientific research, etc. Moreover, the national park administrations are self-financed and currently depend on revenue generated by such economic activity as timber harvesting (sanitation harvests). They are moving towards finding other funding sources and mechanisms.

- Management and protection of the multipurpose area shall be carried out by a Public Enterprise established by the Government of the Republic of Macedonia, in accordance with mentioned law.
- The entities in charge for management of protected area shall manage integrally the entire territory of the protected area. For the purpose of achieving the integral management, the entities in charge for the management of the protected area shall conclude agreements for the regulation of their mutual rights and obligations with the entities performing activities within the protected area, to which the Government of the Republic of Macedonia shall give consent.

Governance can be described as ‘the processes and interactions that determine how power and responsibility are exercised, how decisions are taken, and how citizens or other stakeholders have their say’

Borrini-Feyerabend et al (2004) identified four general types of governance for protected areas around the world, in a categorization that is now widely used.

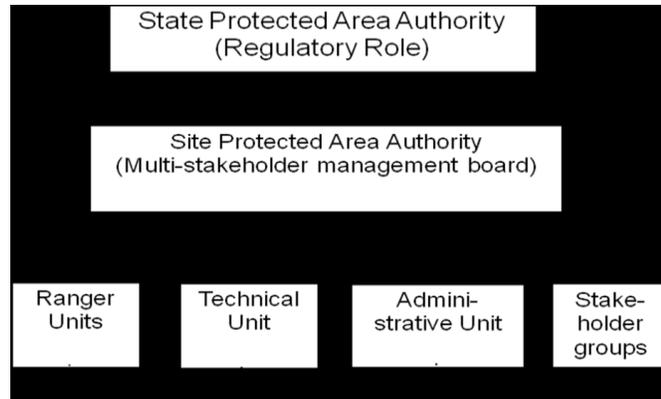
1. Governance Type A: Government protected areas: owned and managed by government agencies
2. Governance Type B: Co-Management
 - Collaborative co-management
 - Joint co-management
3. Governance Type C: Private ownership and management
4. Governance Type D: Community conserved areas

In the Republic of Macedonia, type B joint co-management is applied in managing national parks.

The Law on Local Self-Government (2002) requires municipalities in Macedonia to develop general competencies in environmental management.

The Law on Nature Protection provides a mechanism for representation of municipalities in National Park Management Boards. With regard to the management of monuments of nature, administrative responsibility is delegated to some municipalities.

Generalised organisational chart for Type B (Collaborative co-management of Protected Areas)



According to the amendments of the Law on Nature Protection (2011), legal grounds have been established for the entities mandated with the management of protected areas to establish Council of Stakeholders as a consultative body of the manager.

Civil Associations through their representatives may participate in the work of the Council of Stakeholders and extend opinions and proposals with regard to draft management plan for the protected area, proposal for review of the management plan for the protected area, and implementation of certain programmes of the management plan, in the context of the interests of the stakeholders.

Key threats

At a national level, different sectors have impact on integrity of the protected areas and they more or less contribute to the current situation of nature heritage.

In the Republic of Macedonia, several studies have been prepared in the course of the last three years concerning re-valorization of protected areas or valorization of the natural heritage. As the main factors affecting the integrity of protected areas, the following are indicated in the studies:

- **Energy** - it has an influence through environment pollution, building hydro accumulations and energy transportation, mining and quarrying of minerals, coal and other materials,
- **Transportation** - through built roads and railroads
- **Urbanization and development** - through conversion of land for construction of facilities/ settlements
- **Tourism** - through constructed buildings (huts, hotels and trails) associated with recreation and tourism, including skiing, hiking, camping.
- **Forestry** - by excessive wood-cutting, that is a threat to forest ecosystems.

- **Fishing** - by illegal fishing via using unlawful means represents a severe threat to the ichthyofauna diversity of the protected area.
- **Agriculture** - through use of land for livestock grazing and cultivation of crops
- **Climate-change** - the impact of climate change on the biodiversity and thus the integrity of protected areas is combined with many other anthropogenic factors such as: building roads, railroads, hydro plants, dams, power lines, pylons, industrial buildings, water extraction systems, uncontrolled exploitation of forests, draining of marshes, expansion or abandonment of agricultural surfaces etc.

For the purpose of determination of threats to protected areas in the studies, Tool World Bank/WWF for effective management of protected areas was implemented, particularly Data Sheet 2 : Protected areas Threats.

Barriers for effective implementation

Management of the protected areas at national level and contribution to achieving the objectives of the Work Programme on Protected Areas (PoWPA) of the Convention on Biological Diversity (CBD) are conditioned by the influence of various factors/barriers, such as:

- Lack of capacities for planning, establishment and management of protected areas at a central and local level;
- Lack of financial resources for conservation and management of protected areas;
- Lack of effectiveness of protected areas management (Management authorities for protected areas are designated only of national parks, some monuments of nature and multipurpose area; management plans were prepared only for national parks and draft management plans were prepared for three monuments of nature, a nature park and a multipurpose area);
- Lack of secondary legislation to regulate the management of protected areas;
- Insufficient involvement of indigenous and local communities and relevant stakeholders in the management of protected areas;
- Overlapping of competences between state bodies (Ministry of Environment and Physical Planning and Ministry of Agriculture, Forestry and Water Economy in the management of forests and pastures in the protected areas) and
- Lack of public awareness of ecosystem services in protected areas.

National Targets and Vision for Protected Areas

National targets for protected areas are included in the Biodiversity Strategy and Action Plan (BSAP), prepared in 2004 and Spatial Plan of the Republic of Macedonia (2004). According to the Spatial Plan of the Republic of Macedonia, Sectoral study for protection of nature is foreseen by 2020, the total area of protected areas occupies about 11.5% of the national territory.

In order to improve the national implementation of the CBD, the most important activity is to revise the NBSAP and develop the Fifth National Report to the CBD. The project for revising of the National Biodiversity Strategy and Action Plan will start this year. The project will further

achieve compliance with the 2011-2020 Strategic Plan for Biodiversity & Aichi BD Targets for biodiversity as agreed by countries in COP 10.

National targets for protected areas

- Strengthening the administrative capacities at a central and local level for planning, conservation and management of protected areas;
- Establishment of strategic approach to protected areas financing;
- Improvement of the national legislation for conservation and management of protected areas;
- Increase of involvement of indigenous, local communities and other stakeholders in the management of protected areas;
- Establishment of a National Representative Network of protected areas;
- Extension of the system of protected areas;
- Increase of scientific research and monitoring activities in the protected areas;
- Incorporating climate change aspects into protected areas and
- Improvement of communication, education and public awareness

Progress in and plans for achieving the goals of the Programme of Work on Protected Areas

Progress: 0 = no work, 1 = just started, 2 = partially complete, 3 = nearly complete, 4 = complete

Goals of the Programme of Work on Protected Areas	Progress 0-4
• Progress in establishing and strengthening national and regional systems of protected areas (1.1)	2
• Progress in integrating protected areas into broader land- and seascapes and sectors so as to maintain ecological structure and function (1.2)	2
• Progress in establishing and strengthening regional networks, transboundary protected areas (TBPAs) and collaboration between neighboring protected areas across national boundaries (1.3)	2
• Progress in substantially improving site-based protected area planning and management (1.4)	1
• Progress in preventing and mitigating the negative impacts of key threats to protected areas (1.5)	2
• Progress in promoting equity and benefit-sharing (2.1)	0
• Progress in assessing and implementing diverse protected area governance types (2.1)	1
• Progress in enhancing and securing involvement of indigenous and local communities and relevant stakeholders (2.2)	2

• Progress in providing an enabling policy, institutional and socio-economic environment for protected areas (3.1)	2
• Progress in assessing the contribution of protected areas to local and national economies (3.1)	1
• Progress in building capacity for the planning, establishment and management of protected areas (3.2)	2
• Progress in developing, applying and transferring appropriate technologies for protected areas (3.3)	1
• Progress in ensuring financial sustainability of protected areas and national and regional systems of protected areas (3.4)	1
• Progress in strengthening communication, education and public awareness (3.5)	2
• Progress in developing and adopting minimum standards and best practices for national and regional protected area systems (4.1)	1
• Progress in evaluating and improving the effectiveness of protected areas management (4.2)	2
• Progress in assessing and monitoring protected area status and trends (4.3)	1
• Progress in ensuring that scientific knowledge contributes to the establishment and effectiveness of protected areas and protected area systems (4.4)	3
• Progress in marine protected areas	No relevant
• Progress in incorporating climate change aspects into protected areas	1

Priority activities for full implementation of the Programme of Work on Protected Areas:

Activities	Timeline
1. Integrating protected areas into broader landscapes and sectors so as to maintain ecological structure and function	2015
2. Strengthening effectiveness of protected areas management	2017
3. Improvement of the system of protected areas with regard mitigation of negative climate change impacts	2015

(Insert more as needed)

Action Plans (detailed steps) for completing priority activities for fully implementing the Programme of Work on Protected Areas:

Activity 1:

Key steps	Timeline	Responsible agencies	Indicative budget USD
1. Establishment of a National Representative Network of protected areas	2014	Ministry of Environment and Physical Planning, Local communities,	100.000

		Management authorities for protected areas, scientific institution and NGOs	
2. Extension of the system of protected areas	2015	Ministry of Environment and Physical Planning, Local communities, scientific institution and NGOs	400.000
3. Establish a coherent Ecological Network in accordance with EU criteria (Natura 2000)	2016	Ministry of Environment and Physical Planning, Ministry of Agriculture, Forestry and Water Economy, Management authorities for protected areas, Local communities, scientific institution, NGOs	1.000.000

Activity 2:

Key steps	Timeline	Responsible agencies	Indicative budget USD
1. Preparing management plans for protected areas	2017	Ministry of Environment and Physical Planning, Management authorities for protected areas, Local communities, scientific institution, and NGOs	500.000
2. Strengthening of capacity for the planning and management of protected areas	2015	Ministry of Environment and Physical Planning,	100.000

		Management authorities for protected areas, Local communities, scientific institution, NGOs	
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Activity 3:

Key steps	Timeline	Responsible agencies	Indicative budget USD
1. Assessment of ecosystems fragmentation in the Republic of Macedonia as a tool for understanding of obstacles for adaptation of ecosystems against global climate change	2013	Ministry of Environment and Physical Planning, and scientific institution	300.000
2. Definition of possible routes (bio-corridors) for movement and migration of threatened plant and animal species by the climate change	2013/2014	Ministry of Environment and Physical Planning, scientific institution, and NGOs	300.000
3. Establishing protected areas of category V and VI on the previously defined corridors	2015	Ministry of Environment and Physical Planning, Local communities, scientific institution, and NGOs	300.000

Key assessment results

Ecological gap assessment

Ecological gap assessment for protected areas at a national level is not yet prepared.

Management effectiveness assessment

Management effectiveness assessment is not yet prepared.

Sustainable finance assessment

Reference: UNDP/GEF/MEPP Project: "Strengthening the Ecological, Institutional and Financial sustainability of Macedonia's Protected Area system"(2008-2011)

Protected area financial sustainability can therefore be defined as "the ability to secure sufficient, stable and long-term financial resources and to allocate them in a timely manner and in an appropriate form, to cover the full costs of protected areas and to ensure that they are managed effectively and efficiently". Hence the need for building a strategic approach to PA financing through: building a diverse, stable and secure funding portfolio, improving financial administration and effectiveness and mainstreaming and building capacity to use financial tools and mechanisms.

Having a strategic approach to protected area financing implies that a **Management plan** should be drawn up and implemented for every protected area, including the design of a **multi-year budget of the protected area** indicating the revenues and the priority expenditures, as well as a **Business Strategy and Plan** on how to bridge the identified fiscal gap that is specific to a particular protected area. At the moment, the majority of the protected areas (especially those without a manager i.e. without management plan) do not know how much funding is needed, where the funds could be found, or how to spend the funds so as to conserve the biological diversity.

Law on Nature Protection stipulates financial mechanisms to provide incomes in the protected areas. Funds for nature protection are provided by:

- state budget
- budgets of the municipalities within the territory of which the respective protected area is located
- fee for entry and visiting of the protected area
- fee for parking in the protected area
- fee to visit the special facilities in the protected area
- fee for stay in protected area
- fee for sustainable use of natural resources (wild plant species, fungi, animals, management of forest ecosystems, sports fishing)
- fee for engaging in a business activity in the protected area
- fee for sailing in protected area
- fee for using the logo of a protected area
- fee for ecosystem services

- other sources or renewable credits

Despite stipulation of financial instruments under the Law on Nature Protection, it is recommended to introduce additional financial instruments on a short-term or medium-term basis: carbon offsets; debt-for-nature swap projects; various forms of trust funds; establish a “Renewable Fund” for protected areas; generate additional revenues for nature conservation and for protected areas management via redistributing the existing revenues from taxes, duties and charges levied on fossil fuel production and trade, vehicle registration, water management and electricity generation; allocate a specific proportion of the revenues obtained from the collection of the tourist tax in protected areas; biodiversity offsets (for the damage inflicted on the ecosystems in the protected areas); bioprospecting fees (these are a new type of resource use fee, paid by companies which are interested in developing wild species for commercial purposes (such as cosmetics, dietary supplements and pharmaceuticals industries); financing by way of conceding the right to deliver services for a certain fee i.e. the so-called outsourcing, as well as by establishing Public-Private Partnerships.

International donors (EU and particularly EU countries, other bilateral donors from among developed countries and the GEF) have traditionally played a major role in funding Macedonia’s protected areas. It is recommended that continuing efforts are made to access international funds, and where possible expand the range of funds that are utilized. The fact that Macedonia’s protected areas contain globally-significant biodiversity both gives the justification for funding support from the international community, as well as providing opportunities for accessing these funds.

Capacity needs assessment

Reference: UNDP/GEF/MEPP Project: “Strengthening the Ecological, Institutional and Financial sustainability of Macedonia’s Protected Area system”(2008-2011)

Opinion survey aimed at ascertaining the needs for training was carried out through field visits and meetings/interviews in 30 institutions that were current or potential managers of a total of 49 protected areas last year. A report was developed based on the resultant data, which presents the findings of the analysis of data as well as proposals on how to develop the capacities of the institutions covered by the survey, including a Program on training and training curricula. The following 5 priority training workshops were held:

- Legislation, legislative and institutional aspects of the valorization, proclamation, planning and management of protected areas
- Basic notions about biodiversity exploration, and skills for monitoring and managing nature conservation in protected areas
- Communication, awareness raising and public relations
- Financing, donations and effects on the local economic development with emphasis on tourism and
- Communication, technology and information - GIS system – basic training.

The training workshops were held in the first quarter of 2011 in 4 regional centers: Skopje, Bitola, Stip and Strumica, so all 85 units of the local self-government were covered in this way. A total of 16 two-day workshops were organized and delivered. Basic training in GIS, which consisted in a 3-day workshop, was given for the needs of the staff in the Nature Protection

Department within the Administration for Environment, Ministry of Environment and Physical Planning. There is a significant difference in the levels of knowledge and skills of the individuals that are managers or potential managers of protected areas before the training and now. Unique opportunity has been created for networking between the individuals who are responsible now or will be so in the future for managing the protected areas in the country. They acquired skills and knowledge of the legislation, about technical aspects of nature conservation, and about ways to find possible financing sources and contribute towards the local economic development through nature conservation.

Participants also find it necessary that advanced training be given in the future, especially for aspects related to conducting administrative procedures, using tools for monitoring and evaluation of natural heritage, specific budgeting and drafting of a financing strategy and financing plan, as well as using the natural heritage for the benefits of the local development, especially the development of specific forms of tourism.

Policy environment assessment

The legal framework for networks protected area establishment and management is generally sound. Macedonia has signed all the major international conventions and agreements relevant to protected areas and has prepared the National Biodiversity Strategy according to the requirements of the Convention on Biological Diversity.

The Law on Nature Protection provides a clear legal basis for protection and management of species, habitats, ecosystems and landscape. The law transposes the two important instruments of the EU (Habitat and Birds Directives) and it is aligned with the IUCN categorization of the protected areas.

- There is a need for preparation of amendments of the Law on Nature Protection to provide effectiveness of management for protected areas
- There is a need to establish a minimum standard for management of a protected area.
- There is need for completion of the network of protected species according to the requirements by the law
- There is need for rights, responsibilities and mandates of other agencies and authorities within the territory of protected areas to be clarified
- There is a need for preparation of Strategy for Nature.
- There is a need to revise the Biodiversity Strategy and Action Plan
- There is a need to prepare Strategy for Protected Areas Management.

Protected area integration and mainstreaming assessment

Protected area integration and mainstreaming assessment is not yet prepared.

Protected area valuation assessment

Studies for revalorization of the protected areas and management plans have been prepared during the last three years. These activities represent concrete contribution to the process of re-proclamation of the protected areas and to an increase in the territory of protected areas in

the country, which is in line with the goals of the Spatial Plan and National Biodiversity Protection Strategy.

The studies and management plans were developed in accordance with the best international practices and standards. Through the process of development of the studies and management plans, national and local experts, NGO representatives and staff in the state and local administrations acquired additional specialized knowledge and skills.

Scientific assessments of the natural values of 10 protected areas (one - strict nature reserve, three-national parks, four- monuments of nature, and one park of nature and multi-purpose area) were performed within preparation of the studies for revalorization.

Protected areas that were covered by the studies of revalorization cover a total area of 181361.38 ha, which represent about 7% of the territory of country.

Climate change resilience and adaptation assessment

Reference: Second National Communication to the Convention on Climate Change, Sector Biodiversity (2008)

Global climate changes impact different environmental components. Biological diversity as the most dynamic environmental segment is constantly exposed to the climate change impact and it reacts according to its own adaptation capacity. The direction of adaptations, migrations and successions of different biodiversity components at a certain area or region depends on many factors. Above all these are heterogeneity, differentiation, zoning, richness and complexity and similar parameters of particular biodiversity components. The Republic of Macedonia has specific geographic position on Balkan Peninsula where different climatic influences (continental and Mediterranean) on a small area in separate parts of the country intertwine. In combination with other ecological and historic factors they have led to development of specific and very rich biological diversity.

Considering the zonal character of the biodiversity in Macedonia, global climate change on a regional level could affect it through changes of the temperature and precipitation in different zones. For certain zones, the changes of the temperature regime might be more important factor causing the disturbances of the characteristics and the composition of the ecosystems (in the mountains), while for others, that factor might be the change of the precipitation quantity, i.e. the available humidity (in the valleys). Especially important factor for the biodiversity in individual areas in Macedonia will be the perturbances of the precipitation distribution throughout the year.

Large dislocations of vegetation zones will happen, or a certain redistribution of ecosystems and organisms along with the zones. The size of damages and species loss will depend on the rate of the changes of the climate, since the change of the species distribution depends on their adaptation ability and mobility, or the possibility of coupled shift of the range with the climate change. This is especially important for the long-life plant perennial species as trees, which actually determine the ecosystem to the highest degree and along with it almost all other species.

According to the Second National Communication to the Convention on Climate Change, in the sector biodiversity (2006) climate change will have the most intensive impact on mountain (especially high mountain areas) as well as lowland wetland ecosystems (swamps and marshes)

The assessment of fragmentation degree of the ecosystems in Macedonia and establishment of bio-corridors is one of the main adaptation measures that can be suggested for mitigation of the consequences of climate change impact on biodiversity.