

ALBANIA

CONVENTION ON BIOLOGICAL DIVERSITY
NATIONAL REPORT
BIODIVERSITY STRATEGY AND ACTION PLAN

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Biodiversity Strategy and Action Plan

Prepared by the Alliance "The Institute of Biological Research & Museum of Natural Sciences"

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LIST OF ACRONYMS

AS	Academy of Sciences
BG	Botanical Garden
CBD	Convention on Biological Diversity
CCCH	Convention on Climate Change
CEP	Committee for Environmental Protection
CITES	Convention on the Illegal Trade of the Endangered Species
CTD	Council of Tourism Development
DAP	Department of Environmental Protection within the GDFP
DCTA	District Council of Territorial Adjustment
EAP	Environmental Action Program
EECONET	European Ecological Network
EIA	Environment Impact Assessment
EU	European Union
FPRI	Forest and Pasture Research Institute
FRI	Fishery Research Institute
GDFP	General Directorate of Forest and Pastures
GEF	Global Environmental Facility
GTZ	German Technical Assistance
IBA	Important Bird Area
IBR	Institute of Biological Research
INC	Institute for Nature Conservation
IUCN	World Conservation Union
MAF	Ministry of Agriculture and Food
MNS	Museum of Natural Sciences
NCNB	National Council for Nature and Biodiversity
NCTA	National Council of Territorial Adjustment
NCW	National Council of Waters
NEA	National Environmental Agency
NGO	Non governmental Organisation
NEAP	National Environmental Action Plan
NSI	National Seed Institute
NUPI	National Urban Planning Institute
PA	Protected Area
PEMU	Project Environmental Management Unit
PESBLD	Pan-European Strategy on Biological and Landscape Diversity
RAC/SPA	Regional Activity Centre/Specially Protected Areas (Tunis)
REA	Regional Environmental Agency
REC	Regional Environmental Centre for Central and Eastern Europe
RNPA	Representative Network of the Protected Areas
SCBD	Secretariat of the Convention on Biological Diversity
SNV	Netherlands Development Organisation
UNDP	United Nations Development Program
UNEP	United Nations Environmental Program
UNO	United Nations Organisation
USAID	United States Agency for International Development
WB	World Bank
WCTT	World Council for Travel and Tourism
WWF	World Wildlife Fund

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EXECUTIVE SUMMARY

INTRODUCTION

1 The Convention on Biological Diversity (CBD), was signed by Albania in January 1994. Although faced with the difficulties of a country in transition, Albania has endeavoured to fulfil its obligations under the Convention. In 1998, the Albanian government charged the National Environmental Agency (the former Committee for Environmental Protection) to prepare the Biodiversity Strategy and Action Plan (BSAP) as a step towards implementing the Convention. Albania has been, and continues to be, a participant in European and regional initiatives related with the CBD, especially in the PAN-European Strategy on Biological and Landscape Diversity (PESBLD).

2 In Albania, the main objectives for implementing the CBD and PESBLD are:

- (i) protection and improvement of biological and landscape diversity;
- (ii) incorporation of the principles and policies required for sustainable biodiversity use and management; and
- (iii) promoting sustainable development for present and future generations.

3 The World Bank, through the Global Environment Facility (GEF), provided financial support to the NEA for preparing the BSAP. As part of this process, an Advisory Board was created and headed by the Chairman of the NEA. Supervision, consulting, and co-ordination were the duties of this Board. Technical specialists, university staff, and representatives of central and local governmental and non-governmental organisations participated in the preparation and drafting of the BSAP.

THE IMPORTANCE OF BIODIVERSITY

4 Although a small country, Albania is distinguished for its rich biological and landscape diversity. This diversity is attributable to the country's geographic position as well as geological, hydrological, climatic, and soil and relief factors. The mountainous terrain

combined with steep cliffs creates ideal conditions for maintaining and protecting a large number of ancient species, which are both endemic and subendemic. There are 27 endemic and 160 subendemic species of vascular plants, which have a special protection importance for the country.

5 The high diversity of ecosystems and habitats (marine and coastal ecosystems, wetlands, river deltas, sand dunes, lakes, rivers, Mediterranean shrubs, broadleaf, conifers and mixed forests, alpine and subalpine pastures and meadows, and high mountain ecosystems) offers a rich species variety of plants and animals. In Albania, there are around 3,200 species of vascular plants and 756 vertebrate species. Approximately 30% of all European floras occur in Albania. The high Albanian forests maintain the communities of large mammals such as wolf, bear, lynx, and wild goat, and also the characteristic bird communities, which are associated with virgin forests.

6 Coastal lagoons and large lakes inside the country, are important areas -- especially for wintering migratory birds. There are annually met around 70 waterfowl and waterbird species with a total population of 180,000 individuals in Albania during the winter. Albania is also an important crossroad for the migration of birds, bats, and insects.

7 There are some 91 globally threatened species found in Albania. These include the Dalmatian Pelican (*Pelecanus crispus*), Pygmy Cormorant (*Phalacrocorax pygmeus*), and the Sturgeon (*Acipenser sturio*) for which Albania is a country of particularly critical importance.

8 The landscape diversity inside the country derives from natural characteristics and Albania's ancient origins and the associated human activity. Traditional agriculture and stock farming have been developed according to the natural characteristics of the country, and are the major factors, which determine the landscape physiognomy in those areas, which are characterised by

autochthonous species. A number of local autochthonous livestock and plant species have existed in Albania over the years. They represent very important heritage values for protecting and improving the quality and productivity of agricultural and livestock products.

WHY BIODIVERSITY PROTECTION IS IMPORTANT

9 There are many reasons for the importance of biodiversity protection in Albania; (i) we live by using the plants and animals found in our surrounding environment; (ii) it is our duty towards future generations to ensure a nature as rich as we inherited it; (iii) any living organism has the right to live, those living and evolving over the past thousands and millions of years may disappear very fast, but they can not be recreated; (iv) a large number of plants are known for their medicinal values, and their number may even increase in the future with technological advances; (v) wild plants and animals play an important role in providing the sustenance for cultivated plants and domestic animals; (vi) natural biological processes protect life and environment on our planet; (vii) nature that offers high diversity also has greater potential to be appreciated for tourism development and for its aesthetic and recreational values; and (viii) the country's economic prosperity can only be achieved through the protection and sustainable use of its natural and biological resources.

RISKS AND ADVERSE IMPACTS ON BIODIVERSITY

10 Economic development over the past 50 years was based upon agricultural, industrial and tourism development, increasing use of transportation and urbanisation, and exploitation of forest, fishing, and other natural resources. All this development has had its impacts upon biological and landscape diversity in Albania. Some of the major adverse impacts have been:

- Habitat loss and fragmentation;
- Damage and degradation of habitats and ecosystems;
- Disturbance and maltreatment of wildlife;

- Loss of species or the threat of their extinction; and
- Damage and erosion of genetic resources.

11 Although a low number of species has become extinct during this past century, the rate of loss of Albania's biodiversity during the last 50 years is believed to be increasingly high. Moreover, insufficient knowledge and studies on a wide range of flora and fauna limit an accurate historical evaluation of the biodiversity status of Albania. Two species of plants and four species of mammals have become extinct; and meanwhile 17 bird species no longer nest in the country's territory. During the last 25 years, approximately 122 species of vertebrates (27 mammals, 89 birds, and 6 fish) and four species of plants are expected to have lost more than 50% of their population. The number of rare and endangered species of plants and animals is high and expected to increase.

12 In Albania, the major types of endangered ecosystems and habitats are not only coastal (sand dunes, river deltas, alluvial forests, lagoons, and coastal lakes) and marine (medium and infralittoral level), but also inland ones, including alpine pastures and meadows, continental and glacier lakes, and broadleaf and coniferous forests.

13 The high rate of population growth (the population has almost tripled during the last 50 years) has been followed by the progressive increase of human impacts and disturbances on the country's nature and biodiversity. These pressures are expected to increase in the future due to the relatively free and uncontrolled movement of the population from rural to urban areas. Increasing urbanisation will most adversely affect the coastal and littoral ecosystems, which are more ecologically fragile.

14 The intensive agricultural practices of the past, combined with the present activities of a free market economy, have damaged and are damaging to the native species. These practices have also reduced people's interest in protecting and improving the autochthonous variety of plants and animals.

15 It is observed that agriculture is returning back to the traditional extensive practices due to the lack of investments after the privatisation of land. This phenomenon has reduced the impact on biodiversity, but it is believed that the agriculture sector will use more intensive practices in the future, which will have increasingly adverse impacts on biodiversity – especially in the western coastal plains.

16 Although a large part of the industrial sector is not functioning at the moment, it is expected that this will not be the case as economic development and growth increase in the future. The effects of industrialisation will adversely impact the biodiversity of the country, particularly in the coastal areas, which will have a higher number of urban centres.

17 Tourism and transportation are two other factors, which will soon have an adverse impact on biodiversity, once again particularly in the coastal areas.

18 The exploitation of forests was common in the past due to the absence of alternative fuel resources for cooking and heating. These practices have had adverse effects upon forest biodiversity, which have been further exacerbated by existing forestry practices and the lack of a clear national strategy for the protection and sustainable development of forests. The populations of large mammals have particularly suffered in the forest areas of Albania.

19 There are no discernible effects on marine and wetlands biodiversity due to past fishing and aquaculture practices. However, the consequences are expected to increase in the future due to recent changes in fishing practices (e.g., increased fishing with dynamite) and the foreseen development of the fishery sector in the future.

20 The transition period that began in 1991 has been marked by political instability – especially during the last 2-3 years. Some of the factors influencing this destabilisation have been the lack of appropriate legislation, lack of implementation of existing laws and regulations, and the ineffectiveness of the existing institutional structures.

Meanwhile, individuals and the private sector are focusing on maximising earnings and short-term profits, so the combined effects have negative impacts on biodiversity. There have been efforts to improve the legislation and administrative structure, but illegal wood cutting, and illegal and uncontrolled fishing and hunting persist.

IN-SITU AND EX-SITU CONSERVATION

21 *In-situ* conservation of nature and biodiversity began only in the second half of this century in Albania. Protected areas were established, and followed by the approval of laws and regulations for the protection of endangered species of plants and animals. Although progress has been made, there are still problems which need to be addressed such as:

- Lack of a national strategy for the protection of nature;
- Existing gaps in legislation and institutional weaknesses;
- Limited number of Protected Areas (5.8% of the country's territory);
- Lack of management plans for the major part of the existing Protecting Areas;
- Lack of means and financial resources for effective administration of the Protected Areas;
- Insufficient number of personnel and their lack of training; and
- Lack of practices for protecting endangered species of plants and animals outside the Protected Areas.

22 Until recently, there were no practices for *ex-situ* conservation of endangered plants and animals. However, a seed bank for crops was recently established near the National Institute of Seeds (NIS).

EXISTING NATIONAL PROGRAMS

23 The process of preparing the Strategy and Action Plan on Biodiversity (BSAP) built on previous activities such as the National Environment Action Plan (Committee for Environmental Protection – CEP, 1993), Environmental Strategy of Albania (World Bank – WB, 1993), Ecological Survey of High Forests in Albania (1995), Coastal Zone Management Plan (CZMP, 1996), Specially Protected Areas (UNEP, RAC/SPA, 1995), and NGO

Nature Conservation Strategy in Albania (REC, IUCN, MilieuKontakt, 1997). Their findings and recommendations were incorporated into the BSAP.

IDENTIFICATION OF PRIORITIES

24 The following criteria were used for identifying the priorities for action plans and solutions relevant to species and their habitats:

- Endangered species and habitats with global, regional, and national importance;
- Habitats containing endemic species or high levels of biodiversity;
- Species or habitats risking total extinction;
- Species or habitats which would yield local or national economic benefits;
- Species or habitats with local or national education benefits;
- Endangered species or habitats which could be better protected through more suitable policies and use; and
- Actions which could yield viable economic, ecological, and social benefits.

25 These criteria, together with the present level of knowledge on national biodiversity status and the opinion and consensus of the country's leading zoologists and botanists, were used to select the plant species, animal species, and habitat types which need to be included as priorities in the action plans.

26 The selected species and habitats are presented in two lists based on their importance and the level of danger: (i) species/habitats action plans which should be undertaken within 1-2 years; and (ii) species/habitats action plans which should be undertaken within 3-5 years. The first list of short-term priorities includes 80 species/taxa - 42 vertebrates, 26 invertebrates, and 12 plant species, while the longer-term priorities include 143 species/taxa - 95 vertebrates, 31 invertebrates, and 17 plant species.

27 The action plans for species and habitats should include: the present situation of species or habitats; the major factors influencing the loss or decrease of populations; a short description of

existing protection measures; priority problems which require solutions to enhance biodiversity protection, species distribution and habitat size; and a list of measures which need to be undertaken.

28 Although it is the government's responsibility to prepare and implement the action plans on species and habitats, it is proposed that a partnership led by various co-ordinators for each species and habitats be responsible. Responsibilities would include facilitating, co-ordinating, and promoting the submission and implementation of action plans.

THE NEED FOR CHANGE AND ACTION

29 The implementation of the Biodiversity Convention can be achieved only through acceptance and reference to the objectives and principles for protection. This will include engaging in practices, which promote sustainable development in all sectors impacting on biodiversity such as agriculture, forestry, fishing, industry, urban planning, transport, and tourism. In the meantime, the "polluter pays" principle and the appropriate Environmental Impact Assessment (EIA) procedures should be enforced in all sectors.

30 The protection of nature within Protected Areas should be considered as an important instrument for *in-situ* conservation of biodiversity. It is recommended as a short-term objective that 14% of the country's territory be divided into different categories of Protected Areas, with 25% as the long-term objective for the year 2020. This process will require greater support for environmental protection inside the General Directorate of Forestry and Pastures (GDFFP).

31 Another important aspect of biodiversity management is its protection and sustainable development outside of Protected Areas. This is especially important in Albania because of the limited number of present and proposed protected areas. Without the appropriate measures, a large percentage of fauna, especially birds and mammals, will struggle to survive.

32 *Ex-situ* conservation of biodiversity is also a priority because of increasing anthropogenic pressures upon nature, which threaten to increase the number of endangered and extinct species. The establishment of genetic banks is required for *ex-situ* conservation, first through the establishment of a Gene Bank for plants.

33 The further elaboration of scientific research is also a high priority for Albania. Currently, there is a lack of studies for different groups of fauna (especially marine groups) and flora (especially low plants such as algae, lichens, and moss). The lack of financial support continues to be an obstacle for conducting the necessary research. In the future, improved co-ordination among scientific institutions will be necessary, as well as collaboration with foreign institutions and the active involvement of NGOs.

34 Improving information use and management is a high priority for improving biodiversity management in Albania. To improve the collection and management of data and information it will be necessary to:

- Use existing data and information to the maximum extent possible;
- Improve and standardise existing data collection and reporting;
- Set up a national database for biodiversity; and
- Develop an information network with open access for all locally interested persons.

35 The recent establishment of the Ministry of Information should be used as an opportunity to offer more possibilities for developing information programs on biodiversity.

36 Because the role of the public in biodiversity protection and management is critical, environmental education and public awareness should be improved. Public participation, particularly at the local level, should be encouraged through various projects and programs aimed at improving biodiversity planning and management.

37 Training and qualification programs for biodiversity study and management

are another priority for Albania, and all public institutions, NGOs, and the private sector should be involved in them where possible. Advisory services on biodiversity should be developed to help land users understand the benefits of improved biodiversity protection and management. The Regional Environment Agencies (REAs) under the National Environmental Agency (NEA) may well be the most appropriate vehicle for providing these advisory services.

IMPLEMENTATION OF THE ACTION PLAN

38 Institutional reform and strengthening are an important step for implementing the BSAP, and this should be complemented with an improved legal system and commensurate law enforcement efforts.

39 Two important actions need to be taken in the legal field in order to harmonise existing and future legislation. First, the draft law on Nature Protection and Biodiversity should be approved as soon as possible by the parliament. Second, relevant bylaws and implementing regulations should follow this new law to speed up implementation and harmonisation.

40 Another priority is the strengthening of governmental institutions responsible for biodiversity inventories, management, and monitoring. Better support should be provided for the NEA and the REAs, as well as for the Environmental Project Management Unit responsible for the Albania Forestry Project. In this way they will be able to fulfil their responsibilities on environmental protection in general, and biodiversity in particular. As part of the institutional reform process, it will be necessary to establish as soon as possible the Institute of Nature Conservation (INC) which would provide qualified help in the area of nature conservation and protection as well as sustainable development of biodiversity.

41 The process of local autonomy and decentralisation is part of the democratic process. The governmental authorities at the local level should be responsible for sustainable management of nature and biological resources in their areas, and for

establishing the methods for implementing the CBD and BSAP at the regional and local levels.

42 Co-ordination across sectors also needs to be improved. It is recommended as a first step to establish a National Council on Biodiversity with representatives from the central and local government, university staff, and NGOs operating in the area of environment protection. The Secretariat on Biodiversity (SB) should be established within the NEA. Its responsibilities will include program co-ordination, identification and mobilisation of financial resources for implementing the CBD and BSAP, and other administrative duties.

43 NGO and local communities' participation in biodiversity planning, management, legal issues, and monitoring should be encouraged as part of the process of implementing the CBD and BSAP in Albania.

44 Biodiversity protection has its costs, but at the same time there are benefits to be derived. Cost/benefit analysis should be used as an effective mechanism for

avoiding long-term uneconomic practices and policies. These analyses must be included as a basis for future conservation practices and policies.

THE STRATEGY FOR IMPLEMENTING BSAP

45 The following will be part of the implementation process of the BSAP:

- Dialogue and co-ordination process;
- Identification and mobilisation of financial resources;
- Identifying economic barriers to biodiversity protection;
- Finding and implementing the appropriate mechanisms to realise the benefits of protection; and
- Technical support for projects.

46 The agencies and institutions responsible for implementing and monitoring the CBD and BSAP are the NEA, REAs, National Council for Nature Biodiversity (NCNB), and the country Secretary for the Convention on Biodiversity (SCB) within the NEA.

Matrix table of the Biodiversity Strategy and Action Plan of Albania

Issue	Immediate Actions	Short-Term Actions (1-5 Years)	Mid-Term Actions (5-10 Years)	Long-Term Actions (10+Years)
Legislation	<p>Finalization of the Draft Law on Biodiversity</p> <p>Finalization of the Draft Law on Protected Areas</p> <p>Harmonization of existing laws with the Law on Biodiversity</p>	<p>Approval of laws on Biodiversity and Protected Areas by Parliament</p> <p>Prepare Draft Law on Coastal Zone Management, and approve in Parliament</p> <p>Prepare Draft Law on Administration of Watershed Basins, and approve in Parliament</p> <p>Preparation of implementing regulations for biodiversity law, and protected areas law – including those related to Environmental Impact Assessment</p> <p>Ratification of International Biodiversity Convention and related international environmental treaties (e.g. Bonn and Berne Conventions)</p>	<p>Implementation of regulations for Biodiversity Law and Protected Areas Law</p> <p>Preparation and implementation of regulations on Coastal Zone Management</p> <p>Preparation and implementation of regulations on administration of watershed basins</p>	<p>Developing legal framework for decentralization of biodiversity management</p> <p>Continued implementation and enforcement of regulations</p>
Institutions	<p>Creation of the National Council for Nature and Biodiversity (NCNB)</p> <p>Creation of the implementing board for the Biodiversity Action Plan, and appointment of the Secretariat for the Biodiversity Convention (NEA)</p> <p>Setting up Working Groups (WG) for implementing the Biodiversity Action Plan (14 WG)</p> <p>Support to the Project Environmental Management Unit (PEMU) in the Ministry of</p>	<p>Integration of work and objectives of NCNB with work and objectives of interministerial Structures (National Council for Territorial Adjustment, National Water Authority, National Council for Energy, National Committee of Tourism)</p> <p>Building capacity of national and regional environmental agencies to improve biodiversity management</p> <p>Creation of environmental units in other ministries to incorporate biodiversity issues into sector planning (e.g., based on the experience of PEMU in Ministry of Agriculture and Food)</p>	<p>Develop more sophisticated institutional arrangements in line with progress made in development of institutions and biodiversity management in the first five years (e.g., creation of Ministry of Environment)</p>	<p>Decentralization of institutional responsibilities through strengthening of local capacity for biodiversity protection and management</p>

Issue	Immediate Actions	Short-Term Actions (1-5 Years)	Mid-Term Actions (5-10 Years)	Long-Term Actions (10+Years)
Agriculture	<p>Agriculture Food (MAF)</p> <p>Develop national policy to reduce degradation and erosion of agricultural lands</p> <p>Develop national policy to protect autochthonic breeds and varieties</p> <p>Support for strengthening of National Seed Institute</p>	<p>Establish a National Institute for Nature Conservation</p> <p>Begin taking measures to reduce degradation and erosion of agricultural lands (e.g., improved irrigation practices)</p> <p>Implement measures to protect autochthonic breeds and varieties (e.g., financial incentives for farmers and breeders)</p> <p>Develop national policy for agricultural land next to and inside Protected Areas (e.g., buffer zones)</p> <p>Incorporation of Environmental Impact Assessment procedures into projects, planning, and implementation (e.g., rehabilitation, irrigation, drainage)</p> <p>Develop quarantine regulations and enforcement in customs at the national level</p> <p>Develop policies for creating biocorridors on agricultural land to establish the ecological network (ECONET)</p>	<p>Implementing appropriate incentives to maintain ecological integrity of agricultural land</p> <p>Develop quarantine regulations and enforcement throughout the country at the local level</p> <p>Implement measures for agricultural land next to and inside Protected Areas (e.g., buffer zones)</p> <p>Conversion of abandoned lands to alternative uses (e.g., agroforestry)</p> <p>Pilot projects for habitat restoration through converting unproductive and unused land into wetlands</p> <p>Develop policies to encourage ecologically sound land use and use of agricultural chemicals (e.g., integrated pest management)</p> <p>Adopting improved technologies for plowing and tilling of land</p> <p>Develop pilot projects for</p>	<p>Implementing measures to ensure ecologically sound land use and use of agricultural chemicals</p> <p>Extension of Protected Areas by including agricultural land next to Protected Areas (Buffer Zones)</p> <p>Full-scale program for habitat restoration through converting unproductive and unused land into wetlands</p> <p>Widespread implementation of improved technologies for plowing and tilling of land</p> <p>Full-scale development of biocorridors on agricultural land for the ecological network (ECONET)</p>

Issue	Immediate Actions	Short-Term Actions (1-5 Years)	Mid-Term Actions (5-10 Years)	Long-Term Actions (10+Years)
Energy and Industry	<p>Develop national policy for integrating ecological considerations into energy and industry operations as part of privatization and restructuring process before industrial capacity picks up significantly</p>	<p>Begin implementing measures for integrating ecological considerations into the sector (e.g. new technologies to reduce air and water pollution) taking into consideration the industrial and energy mix which is likely to evolve in Albania</p> <p>Incorporation of Environmental Impact Assessment procedures into project planning</p> <p>Developing economic policies within the sector which enhance environmental protection (e.g., recycling, energy efficiency, and waste minimization)</p>	<p>biocorridors on agricultural land to establish the ecological network (ECONET)</p> <p>Pilot projects within the sector which enhance environmental protection (e.g., recycling, energy efficiency, and waste minimization)</p>	
Forestry	<p>Develop national policy for integrating ecological considerations to ensure multiple uses of forest resources (e.g., based on a sustainable yield concept/policy)</p> <p>Take measures to control illegal forest harvesting in the most sensitive areas</p>	<p>Begin implementing measures for integrating ecological considerations into forestry operations</p> <p>Implement new technologies to reduce environmental damage from forest roads and harvesting</p> <p>Incorporation of Environmental Impact Assessment procedures into forest management and operations</p> <p>Harmonization and coordination of forest and pasture policy with nature and landscape conservation policies</p> <p>Developing policies within the sector which enhance environmental protection (e.g., standards for allowable cut, cutting cycles,</p>	<p>Implementing measures within the sector which enhance environmental protection (e.g., standards for allowable cut, cutting cycles, and harvesting techniques)</p> <p>Implementing measures for creating biocenters and biocorridors on forest land to establish the ecological network (ECONET)</p> <p>Implement full-scale program to reduce and control illegal harvesting of forest resources (especially in Protected Areas)</p>	<p>Reforestation of areas found not to be regenerating forest resources on their own (e.g., oak land degraded areas)</p>

Issue	Immediate Actions	Short-Term Actions (1-5 Years)	Mid-Term Actions (5-10 Years)	Long-Term Actions (10+ Years)
Fisheries and Hunting	<p>Develop national policy for integrating ecological considerations into fisheries management</p> <p>Measures to control inappropriate exploitation of benthic living forms such as <i>Corallium rubrum</i> and <i>Lithofaga lithofaga</i></p>	<p>and harvesting techniques)</p> <p>Develop policies for creating biocenters and biocorridors on forest land to establish the ecological network (ECONET)</p> <p>Continued enforcement to reduce and control illegal harvesting</p> <p>Begin implementing measures for integrating ecological considerations into the sector</p> <p>Improve control of overfishing and inappropriate fishing techniques such as dynamite</p> <p>Improve control of illegal hunting which threatens important taxa</p> <p>Developing economic policies and pilot projects within the sector which enhance environmental protection</p>	<p>Integration of landscape and biodiversity management with fisheries practices</p> <p>Develop pilot projects and policies for establishing and developing fish hatcheries in fresh and coastal waters</p>	<p>Full-scale national network of fish hatcheries in fresh and coastal waters</p>
Territorial Planning and Urbanization	<p>Develop national policy for integrating ecological considerations into urban and landscape planning</p>	<p>Begin implementing measures for integrating ecological considerations urban and regional planning</p> <p>Incorporation of Environmental Impact Assessment procedures into project planning and implementation</p> <p>Developing and implementing urban and landscape planning policies and practices which enhance environmental protection (e.g., through pilot projects in coastal areas and in selected cities with the largest population and migration pressures)</p> <p>Begin implementing measures for</p>	<p>Training and development to strengthen capacity to develop urban planning agencies at the local level (i.e., outside of Tirana)</p>	<p>Decentralization of</p>
Transport	<p>Develop national policy for</p>	<p>With increased economic</p>	<p>Decentralization of</p>	<p>Decentralization of</p>

Issue	Immediate Actions	Short-Term Actions (1-5 Years)	Mid-Term Actions (5-10 Years)	Long-Term Actions (10+Years)
	<p>integrating ecological considerations into the transport planning</p>	<p>integrating ecological considerations into the sector (e.g., promotion of cleaner transport fuels and vehicles)</p> <p>Incorporation of Environmental Impact Assessment procedures into project planning</p>	<p>development more sophisticated measures for traffic management and transport infrastructure development will be needed</p>	<p>transportation management</p>
<p>Tourism</p>	<p>Develop national policy for integrating ecological considerations into tourism planning and promotion in order to ensure the protection of the environmental and natural resource base which will attract tourists</p> <p>Improve coordination between Committee for Tourism Development and National Environmental Agency and other government bodies</p>	<p>Begin implementing measures for integrating ecological considerations into the sector (e.g. ensuring that tourism development does not compromise nature conservation objectives)</p> <p>Incorporation of Environmental Impact Assessment procedures into project planning for medium-scale and large-scale tourism development, and development of associated infrastructure</p> <p>Development of pilot projects for ecologically sound tourism development and protection</p>	<p>Ensuring that Environmental Impact Assessment procedures are enforced with respect to project implementation for medium-scale and large-scale tourism development</p> <p>Implementation of projects for ecologically sound tourism</p>	<p>Reducing the adverse impacts of tourism and leisure activities on the environment assuming that tourism will become an increasingly important sector of the economy</p>
<p>Water Management</p>	<p>Develop national policy for integrating ecological considerations into the water sector through integrated planning and use of water resources</p>	<p>Begin implementing measures for integrating ecological considerations into the sector (e.g., new technologies to reduce inefficient and inappropriate use of water)</p> <p>Incorporation of Environmental Impact Assessment procedures into project planning and implementation in the water sector</p> <p>Developing pilot projects for water management and development of water-related infrastructure which take into account environmental protection and biodiversity impacts</p>	<p>Develop and implement policies to reduce and control the effects of point-source water pollution on biodiversity since these impacts will increase with economic development</p> <p>Improve water canalization and wastewater treatment facilities to reduce environmental impacts of non-point water pollution</p>	

Issue	Immediate Actions	Short-Term Actions (1-5 Years)	Mid-Term Actions (5-10 Years)	Long-Term Actions (10+Years)
Military		Develop national policy for integrating ecological considerations into sector planning	<p>Begin implementing measures for integrating ecological considerations into the sector (e.g. site selection of military facilities, mitigation measures such as removal of bunkers)</p> <p>Incorporation of Environmental Impact Assessment procedures into project planning</p> <p>Use of military personnel to patrol selected sensitive areas such as coastal and marine national parks</p>	
In-Situ Conservation (Protected Areas)	<p>Approval of Representative Network of Protected Areas (RNPA) which cover 14% of national territory</p> <p>Prepare the management plans for the most sensitive and important Protected Areas (e.g., primary National Parks)</p>	<p>Preparation of species and habitat action plans</p> <p>Establishment of the administration and management authorities for Protected Areas</p> <p>Development of a national program for building up the ecological network – biocenters, biocorridors, rehabilitation areas, and buffer zones</p> <p>Prepare and develop pilot projects for preserving and enhancing biological and landscape diversity</p>	<p>Implementation of habitat and species action plans</p> <p>Implement full-scale program for preserving and enhancing biological and landscape diversity with emphasis on the local level of responsibility</p>	<p>Implementation of habitat and species action plans</p> <p>Enlarge RNPA to cover up to 25% of national territory</p>
Ex-Situ Conservation		<p>Provide additional support to the National Botanical Garden for ex-situ conservation of endemic and threatened plant species</p> <p>Improving the existing seed bank inside the National Seed Institute</p>	<p>Creation of gene banks for autochthonic species of plants in the National Seed Institute</p> <p>Creation of gene banks for domestic animals and wildlife in the Zootechnic Research</p>	<p>Creation of necessary institutions for ex-situ conservation of threatened and endangered animal species</p> <p>Creation of gene banks for</p>

Issue	Immediate Actions	Short-Term Actions (1-5 Years)	Mid-Term Actions (5-10 Years)	Long-Term Actions (10+Years)
Biodiversity Research and Monitoring	Prepare and develop an overall strategy and plan for biodiversity research and monitoring at the national level, including specification of institutional roles, responsibilities, and coordination	<p>Develop strategy for creation of gene banks for plant and animal species, including domesticated species</p> <p>Increased training for responsible research institutions for biodiversity inventory and monitoring</p> <p>Development of a long-term strategy and program for improving biodiversity inventory and monitoring through the establishment of fixed stations</p> <p>Preparation of Corine Biotopes map depicting the most sensitive areas rich in biodiversity (emphasis on protected areas, sea meadows, and benthic communities most affected by human activities)</p> <p>Improve standardization and collection of data</p> <p>Establishment of national databases for flora and fauna in Protected Areas to be used by the responsible institutions</p> <p>Develop strategy for assembling a national database on biodiversity</p>	<p>Institute</p> <p>Implementation of program for improving operational activities for biodiversity inventory and monitoring</p> <p>Preparation of Corine Biotopes map depicting the most sensitive areas rich in biodiversity (for the entire country)</p>	<p>endangered animal species, wildlife, flora, and micro-organisms</p> <p>Further study on the presence and distribution of plant and animal species and taxa, focusing on marine groups and low plants which have been poorly studied so far</p> <p>Continued implementation of operational activities for biodiversity inventory and monitoring</p>
Information Management	Develop policy for data collection and management, including specification of institutional roles, responsibilities, and coordination	<p>Improve standardization and collection of data</p> <p>Establishment of national databases for flora and fauna in Protected Areas to be used by the responsible institutions</p> <p>Develop strategy for assembling a national database on biodiversity</p>	<p>Establishment of a national database on biodiversity</p> <p>Develop an open information network for interested parties (including at the local level)</p>	<p>Implementation of information exchange through the information network at the national and local levels</p> <p>Development of national scholarly journals focusing on the publication of environmental research and monitoring findings</p>
Environment Education and Public Awareness	Increase use of public television and media in providing general announcements on biodiversity to increase public awareness and sensitivity - focus on non-technical and local level announcements	<p>Develop a strategy for environmental education at the primary and secondary levels (including redesign of teaching programs)</p> <p>Preparation of non-technical materials and guidelines concerning biodiversity importance to be made available to the general public - with emphasis on the local</p>	<p>Implement programs for environmental education at the primary and secondary levels</p> <p>Publication and dissemination of a wide array of non-technical materials and guidelines concerning</p>	<p>Development of local agencies dedicated to increasing public awareness and environmental education</p>

Issue	Immediate Actions	Short-Term Actions (1-5 Years)	Mid-Term Actions (5-10 Years)	Long-Term Actions (10+Years)
		level Design and implement demonstration and pilot projects together with increased support for NGOs working on public awareness and environmental education at all levels of education	biodiversity importance to be made available to the general public	
Estimated Resource Requirements	\$1 million ¹	\$5-10 million ²		

¹ Specific proposals to be developed 2-3 months after the National Workshop on Biodiversity on the basis of discussions at the workshop – each working group to prepare proposals to be evaluated by the National Council on Nature and Biodiversity to select priorities for submission for financing

² To be developed by the responsible institutions on the basis of donor interest, and on the success at implementing the immediate measures

PART ONE

BIODIVERSITY IN ALBANIA

CHAPTER 1

CONVENTION ON BIOLOGICAL DIVERSITY AND BIODIVERSITY IN ALBANIA

INTRODUCTION

1.1 The Convention on Biodiversity (CBD) was an important part of the Earth Summit in Rio de Janeiro, 1992. Albania signed this Convention on January 5, 1994.

1.2 Article 1 explains the objectives of the Convention as follows:

The objectives of this Convention, to be pursued in accordance with its relevant provisions, are the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding.

1.3 In accordance with article 6a of the CBD, Albania must accomplish its obligations in regard to:

Develop national strategies, plans or programmes for the conservation and sustainable use of biological diversity or adapt for this purpose existing strategies, plans or programmes which shall reflect, *inter alia*, the measures set out in this Convention

1.4 Albania, taking into account the difficulties of the transition period, has taken the responsibility to accomplish the obligations of the Convention. The National Environmental Agency (NEA), which was formerly the Committee for Environmental Protection (CEP), has been asked by the Albanian Government to prepare the

Biodiversity Strategy and Action Plan (BSAP) in order to implement the Convention. The NEA is responsible for Albania's role in the regional and European initiatives and programs in response to the CBD, in particular in the Pan-European Strategy of Biological and Landscape Diversity (PESBLD).

1.5 The goal of the implementation of the CBD and the PESBLD in Albania is:

Protection and improvement of the country's biological and landscape diversity, and the integration of sustainable use and management policies into other sectors, aiming to achieve sustainable development for the future generations.

1.6 With the financial support of the World Bank through the Global Environmental Facility (GEF), a grant was made available to the NEA to prepare the PEBLS. For the preparation of the PEBLS, an Advisory Panel chaired by the NEA's Chairman was created. The Panel was responsible for the supervision and co-ordination of the work. Staff from the scientific and academic institutions, government and local institutions, and NGOs working on nature and the environment issues was involved in the process of preparation and discussion of the PEBLS.

1.7 This report presents the viewpoints and important issues to be considered by the Government as a basic instrument for developing a long-term program from 2000-2015.

1.8 In the remainder of Chapter 1, the state of biodiversity in Albania is reviewed, focusing on what is biodiversity, and why it is important

Fig. 1. Physical Map of Albania



for sustainable development. Chapter 2 explains the existing and potential dangers to biodiversity, while chapter 3 reviews the state of biodiversity protection and management in Albania. Chapter 4 explains the criteria used for the identification of the important issues and actions to implement the CBD and the PESBLD in Albania. An important part of this chapter is the detailed information on strategic steps, the content of the species and habitat action plans, and the identification of the target issues and working groups.

1.9 Chapters 5 and 6 explain the biodiversity action plan and the measures to be taken in order to implement the CBD and PEBLS in Albania. The annexes illustrate the importance of biodiversity in Albania, and the need to take measures to enhance it. The Represented Network of the Protected Areas (RNPA) receives special attention in Annex B. The list of experts and institutions responsible for the preparation of this report is presented in A.

THE STATE OF BIODIVERSITY.

1.10 Although Albania is a small country, it is very rich in biological and landscape diversity. This is due to its geographical position, geological factors, hydrology, climate, and soil conditions.

1.11 Albania is a Mediterranean country on the Balkan Peninsula in the south of Europe. The Albanian coastline is 476 km long, and the Adriatic and Ionian Seas have a great impact on the climate, flora, and fauna in the country.

1.12 Albania is part of the Mediterranean Alps in the line Dinarido-Albanido-Helenid, and is characterised by a diversity of rock formations since Palaeozoic time. There are more sedimentary and volcanic formations, while metamorphic ones are less common. Other formations such as alluvial, proluvial, koluvial, and deluvial glaciers, marshes, and lakes, are younger and from the Quaternary

area. Within Albania there are tectonic zones which during their geological development changed to tectonic and neo-tectonic configurations.

1.13 The Albanian relief is mostly hilly and mountainous. There is a diversity of morphological formations and slopes. It has a young age since the Albanian relief originated during the Miocene Age. At the beginning of the Quaternary Age, the Adriatic lowland and other inland lowlands were attached to the continental part of Albania, but the existing relief shape was formulated during the Pliocene Period. The evolution of the Albanian relief continues to this day. The highest point is 2751m above sea level (Korabi Mountain) and the lowest one is 8 meters below sea level (the former Terbufi Marsh). The medium altitude of the country is 708m above the sea level. The altitude declines moving from the east to the west of the country, and this determines the conditions of the climate, land, and vegetation.

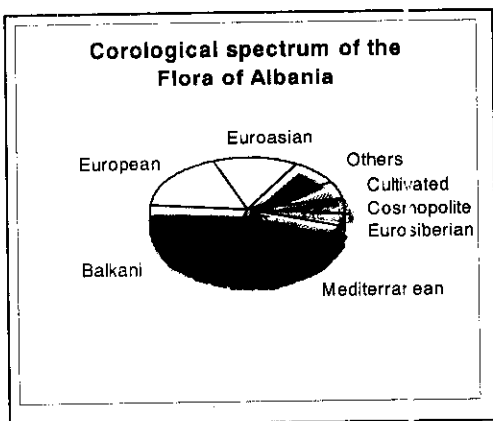
1.14 The climate of Albania is diverse. It has four major climatic zones and 13 sub-zones, which contribute to the country's rich biological diversity.

1.15 Albania is well known for its rich and complex hydrographic network composed of rivers, lakes, wetlands, groundwater, and seas. The main rivers are the Drini, Buna, Mati, Shkumbini, Semani, Vjosa, Erzeni, Ishmi, Bistrica, and Pavilo, and their courses have an important effect on the country's coastal biodiversity. About 247 natural lakes of different types and dimensions, and a considerable number of artificial lakes, are located inside the country. Based on their origin, they are divided into tectonic lakes (4), glacier lakes (134), carstic lakes (94), and fluvial lakes (15). Among the more important ones are the transboundary lakes of Shkodra, Ohrid, and Prespa - the most important and largest ones in the Balkans with European and international significance. In the coastal area of Albania there are wetlands such as Karavasta, Narta,

Patoku, Viluni, Kune-Vaini, Orikumi, and others, with a total area of 150km².

1.16 ALBANIA AS AN IMPORTANT MIGRATION ROUTE FOR FLORA AND FAUNA

1.16 Albania is an important migration route for flora and fauna. The main elements of the Albanian flora are Mediterranean (24%), Balkan (22%), European (18%), and Eurasian (14%).

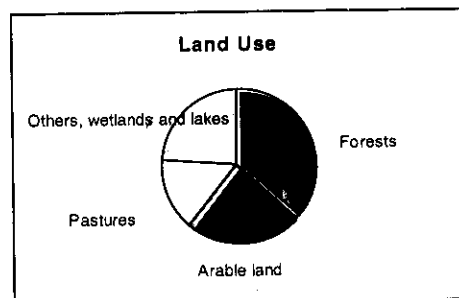
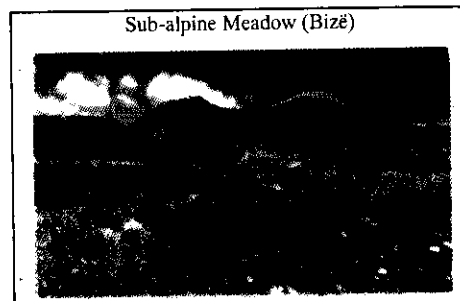
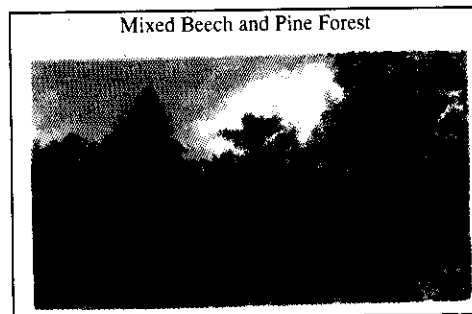
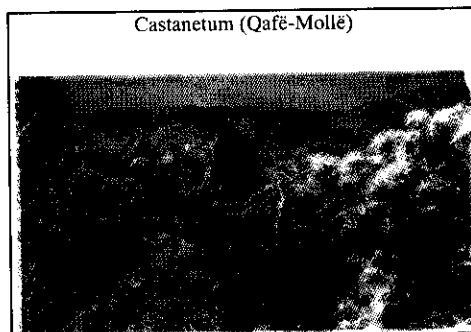


The Eurasian, Holartic, Mediterranean, and Balkan elements dominate the faunistic spectrum of the country.

1.17 ALBANIA AS AN ECOSYSTEM DIVERSITY

1.17 Albania is well known for its high diversity of ecosystems and habitats. Within its territory there are maritime ecosystems, coastal zones, lakes, rivers, evergreen and broadleaf bushes, broadleaf forests, pine forests, alpine and sub-alpine pastures and meadows, and high mountain ecosystems.

1.18 Albania is rich in forest and pasture resources. The forests cover 1,030,000 ha or 36% of the country's territory, and the pastures about 400,000 ha or 15%. Approximately 60% (244,000 ha) of the pastures are alpine and sub-alpine pastures and meadows. The forests and the pastures have a diversity of types, formations, and plant and animal communities.

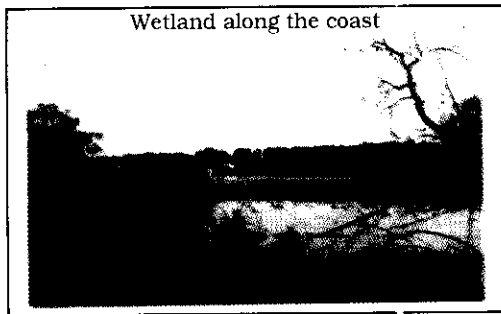


Habitat Types in Albania

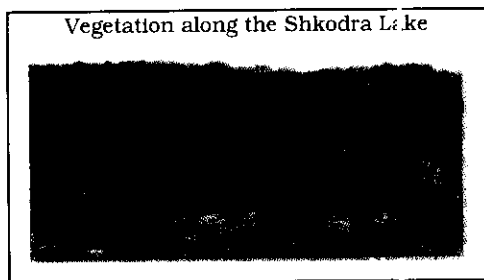
Habitat Type	Habitat subtype	Number of communities
<i>Coastal communtties</i>	Marine communities	19
	Marine Wetlands	19
	Coastal sandy	13
	Dunes and seaside's	
	Rocky coast	4
<i>Non-maritime water</i>	Coastal wetlands	
	Sweet waters	36
	Running waters	
<i>Bushes</i>	Rivers and springs	7
	Temperate heath grove	53
	Bushes	23
	Garriga	16
	Pseudomakja	1
	Terrain	2
	Gorse terrain	?
	Frganat	2
	Grass terrain's	17
	Termofile forest	2 associations
	Sites with Mediterranean grass	5
	Mediterranean-Mountain grass terrain's	6
	Dry grass terrain's	6
	Alpine and sub-alpine grass terrain's	48
	<i>Forests</i>	Broadleaf forest
Conifer forest		31
Fcrests and bushes		30
Evergreen and Temperate broad-leave forest		6
<i>Pond water vegetation</i>	Rush formation	25
<i>Rocky formations</i>	Rocky slope	15
	Rocky gaps	12
	Caves	

Other habitat types: Crop lands; Fruit-tree plantations; Vineyards; Low forests; Urban parks; Towns, villages or industrial sites; Mines

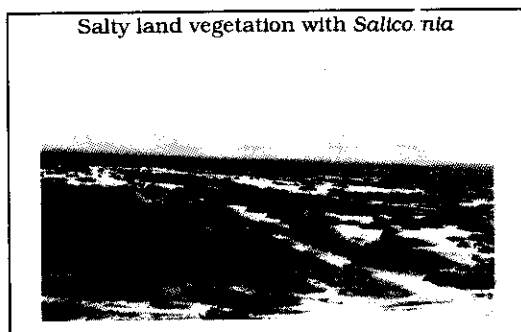
1.19 Along the coastline of the country there are many ecosystems of significance in the Mediterranean region such as lagoons, wetlands, sand dunes, river deltas, hydrophil and hygrophil forests. Littoral and infralittoral communities of Mediterranean origin along the rocky coast are quite diverse and well preserved.



1.20 The lakes and rivers are also important for the biological and landscape diversity of the country.



1.21 There is a diversity of landscapes in Albania due to its natural characteristics and long history of population and human activities. Traditional agriculture and stockbreeding developed in the countryside, in accordance with natural conditions, have been the major factors determining the Albanian landscape, where indigenous elements are not missing.



SPECIES DIVERSITY

1.22 Information on biodiversity in Albania is generally lacking. There are still flora and fauna taxonomic groups, which are unknown or have not been studied. The information on well-known taxonomic groups is lacking in terms of species. The number of species shown in Box 2 is larger, and in some groups several times larger, from that known to date.

1.23 Taking into account the existing information, Albania has a rich diversity of flora and fauna with about 3,200 flora species and 756 fauna species, respectively. Approximately 30% of European flora occur in Albania, and the high forests of Albania are the habitat for large game such as the brown bear, wild boar, and others, and also of fowl species, which flourish in virgin forests. The rich marine flora and fauna communities are an indicator of the high level of preservation and quality of these communities in Albania.

GENETIC DIVERSITY

1.24 A number of autochthonous breeds of cattle and crops exist in the country. About 30 species of crops are native to Albania. There are nine autochthonous breeds of goats and five for sheep. This is an important heritage for the protection and improvement of the production and the quality of the agricultural and animal husbandry.

The Number of Species in Albania

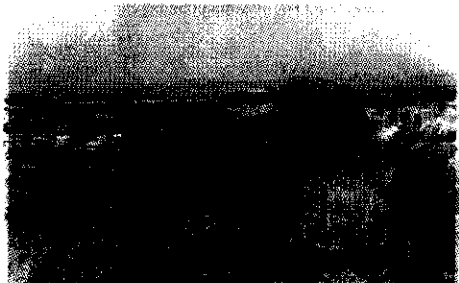
Group	Species in Albania	Species in Europe	World Species
Bacteria	Unknown	Unknown	>4,000
Viruses	Unknown	Unknown	>5,000
Protozoa	Unknown	Unknown	>40,000
Algae	600	Unknown	>40,000
Fungi	800	16,000	>70,000
Ferns	45	145	>12,000
Bryophytes	500	10,000	>14,000
Lichens	400	1200	>17,000
Flowring plants	3200	11415	250,000
Mollusca	520 (700)	Unknown	80,000
Insects	4,000 (14,000)	40,000	1,000,000
Crustaceans (Decapoda)	115	150 (Adriatic sea)	8,000
Echinodermata	46	94 (Mediterranean)	5,650
Fish	313 (350)	618 (Mediterranean)	32,000-40,000
Marine Fish	249	Unknown	23,000-30,000
Freshwater Fish	64	Unknown	8,500
Amphibians	15 (16)	62	4,000
Reptiles	36 (38)	123	6,500
Birds	323 (335)	450	9,881
Mammals	70 (84)	200	4,327

Note: The number in parentheses indicates the number of the expected species to occur in Albania

Breed "Syska" of Polisi area



Breed "Dhia e Matit"

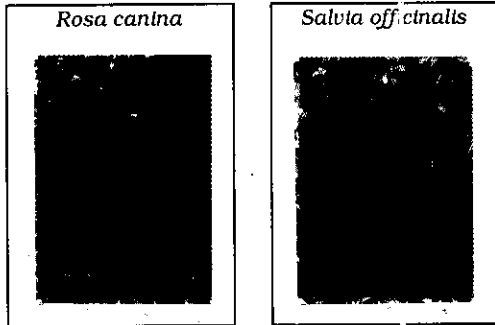


Goat breeds	Female	Male	Tendency
Dragobijska	6500	350	I
Velipojska	Unknown		I
Hasi	15000	377	I
Mati	9500	240	I
Capore	22176	479	S
Shyta	Unknown		I
Dukati	20310	690	I
Muzhakë	42096	1480	I
Liqenas	10000	500	I
Sheep breeds			
Bardhoke	19740	880	I
Shkodrane	13450	560	I
Ruda	29400	950	I
Recka	194096	8100	I
Syska (Lara e Polisit)	110	5	I

Note: I=increasing; S=stable

SPECIES OF ECONOMIC VALUE

1.25 The medical, industrial, and feed value of plants and animals is well known. There are 300 types of medical and aromatic plants, which represent about 10% of the Albanian flora. In the future the number of plants with medical or aromatic value will likely increase.



1.26 About 40 plant species have forage values, and 35 plant species are taniferous. The number of well-known plants for honey producing by bees is about 50, and the number of plants used for feeding is 70.

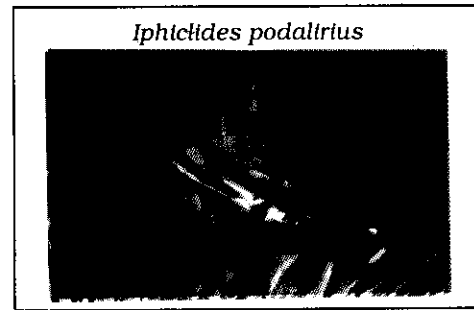
1.27 Different types of fish in marine and inland waters, and a considerable number of sea animals, are an important food source for humans, and frogs are also becoming a source of food. Molluscs are an important source for the preparation of pharmaceutical products and other cosmetic products. Their shells serve to produce artistic objects, stamps, parts of musical instruments, and other objects. Insects are important for pollen, and some also have food and industrial values such as the bee and silkworm.

1.28 Furs of some animals like martens, fox, squirrel, and others also have economic value.

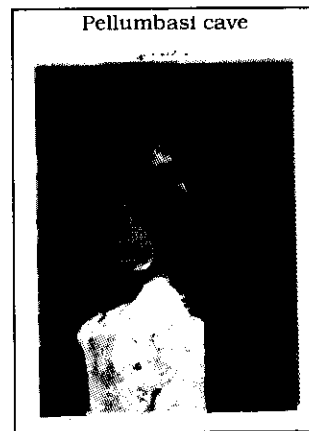
AESTHETIC AND RECREATIONAL VALUES

1.29 There are indisputable aesthetic, recreational, and spiritual and physical values associated with biodiversity and landscape. Biological life and landscape diversity are an important spiritual source for humans. The diversity of the living organisms and habitats and the

beauty of nature increase the appreciation for nature and the countryside.



1.30 The diversity of the shape, colour, function, and behaviour of the plants and animals has extraordinary aesthetic and recreation value. The biological diversity and natural and cultural landscape are also a source of pleasure and culture for present and future generations.

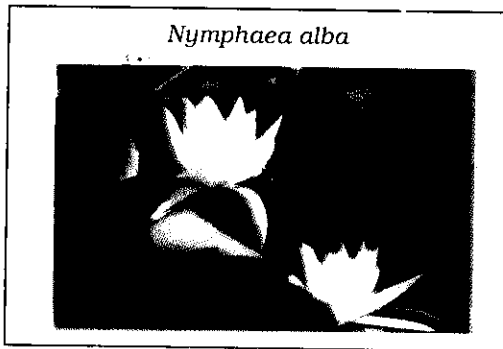
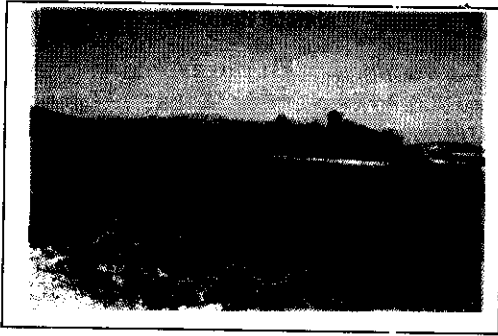


BIODIVERSITY AND TOURISM

1.31 The recreational values of biological and landscape diversity are an asset, which can be used to promote tourism development. It is our duty and responsibility to protect and develop these values for present and future generations. If we are not able and responsible to protect biological and landscape diversity, there is a risk of losing their recreations values to help foster tourism as a means to promote development and prosperity in Albania.

1.32 Sport hunting, fishing, climbing, and other activities, which would be attractive for tourism, require that

Albania take the necessary measures to protect the environment and its biodiversity.

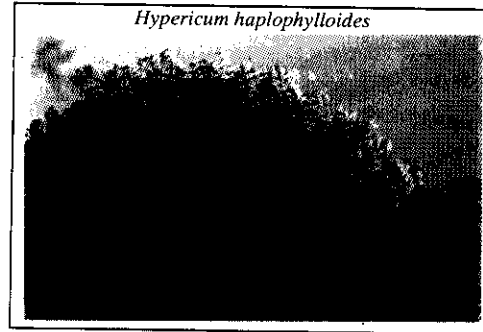


SPECIAL FEATURES OF THE
BIODIVERSITY: ENDemic AND SUBENDemic
TAXA

1.33 The relief of Albania has created the conditions for the existence and protection of a number of endemic and subendemic species. There are 27 plant species with 150 subspecies, which are endemic in Albania, and another 160 plant species, which are subendemic in Albania, Yugoslavia, and Greece. Among paleoendemics there are types with very old origin like *Wulfenia baldacii*, *Forsythia europea*, *Gymnospermium shqipetarum*, and from the neo-endemics *Lunaria telektana*, *Crepis bertiscea*, *Petasites doerfleri*, *Leucojum valentinum* subspecies *Vlorense*, *Aster albanicus* subspecies *Paparis ot*, and others.

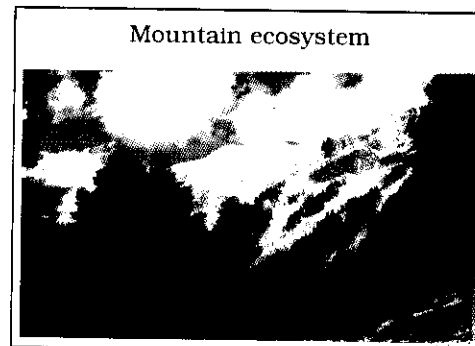
1.34 In comparison with the flora, the Albanian fauna is less known and studied. It has a considerable number of endemic and ancient species. Lake Ohrid is the most well known ecosystem in the country in terms of fauna endemism: over 40 species of

molluscs and two fish species are endemic. Insects are represented by 16 species (11 species of Hemiptera and five species of butterflies). Further studies of the country's fauna, in particular biospeleological studies, which just have only just begun in Albania, will help in finding new endemism in the country. (A list of the endemic species of Albania is found in Appendix C of this report).



LINKS BETWEEN ALBANIA'S AND
NEIGHBOURING COUNTRY ECOSYSTEMS

1.35 The Albanian inland and marine ecosystems are a part of the Mediterranean and Balkan natural ecosystems.



1.36 Transboundary lakes like Shkodra, Ohrid, and Prespa are points of floristic and fauna exchange with other Balkan countries.

1.37 Species migrate through the rivers and the highest parts of Albanian mountains from their natural habitats outside Albania in Greece, Macedonia, and Yugoslavia.

1.38 The large number of subendemic species linked with Greece and Yugoslavia, and the marine species endemic to the Adriatic Sea highlight

the importance of Albania for the protection of biodiversity in the Balkan and Mediterranean regions.

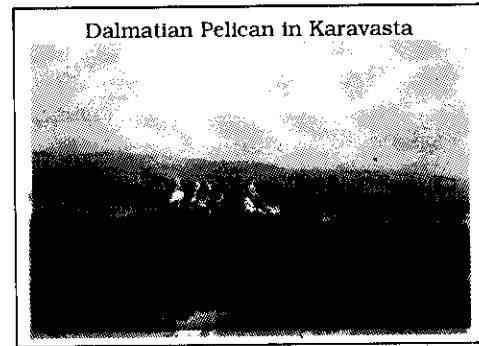
THE IMPORTANCE OF ALBANIA FOR MIGRATORY SPECIES

1.39 The coastal wetlands and lakes inside the country are particularly important sites for the wintering of migratory species since about 70 waterfowl species with a population of 180,000 are wintering in these areas. At least four from them (Karavasta, Narta, Shkodra and Ohrid) can be considered as sites of international importance for waterfowls known as IBAs (Important Bird Areas), or Ramsar sites, with more than 20,000 waterfowl species at each site. At this time, only Karavasta has Ramsar status.

THE IMPORTANCE OF ALBANIA FOR GLOBALLY THREATENED SPECIES

1.40 In Albania, there are a number of globally threatened species since at

least 72 vertebrate and 18 invertebrate species with global importance have at least part of their habitats and population in Albania. For some of them (*Pelecanus crispus*, *Phalacrocorax pygmeus*, *Salmo letnica* and *Acipenser sturio*), Albania has a critical importance. (A list of globally threatened species is given in Annex D of this report).



WHAT IS BIOLOGICAL DIVERSITY

Article 2 of the Convention on Biodiversity states:

"The variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems".

In other words, the term biological diversity is the number and the diversity of living organisms on our planet. Within this term is the diversity of genes, species, and ecosystems which are the product of the evolutionary process over billions of years. The presence of human beings depends on this biological diversity, so from this point of view the term biodiversity is a synonym for the term "life on the planet."

There are 1.7 million known species, but the exact number of species on the planet is not known. It is estimated at about 5-100 million.

Biodiversity represents the diversity of the life, which we must protect for future generations and ourselves. If not, our children will pay the price tomorrow.

Species disappearance is a normal part of the evolution process of the living organisms. However, today, because of human activities, species and ecosystems are extremely endangered. The loss of biodiversity is high and continues. The forecast is that, with today's deforestation process, within the next 25 years 2-8% of the species will disappear. This is in itself an environmental disaster, but the effects of this tragedy will also impact on the economic and social development throughout the world. At least 40% of the world's economy and 80% of our needs are realized from the use of biological resources. In addition, new medical research, economic development, and new environmental challenges like climate change are linked closely to the protection of biological diversity.

Biodiversity is a natural resource "bank" which everyone should "invest" in, in the same way in which biodiversity is investing in us.

Olea europaea and *Spartium
junceum*



WHY WE SHOULD PROTECT THE BIODIVERSITY

MORAL AND AESTHETIC REASONS

- The diversity of species and habitats are the basis of the beauty of nature. They increase the love for it, the love for the countryside, and develop the sense of aesthetics, which inspire composers, painters, sculptors, and other artists. The best writers and artists are always pupils before nature;
- Plants and animals have extraordinary aesthetic, educational, and recreation values;
- Pleasure and culture;
- As a steward of nature, man must respect the right of other living organisms to exist; and
- We do not have the right to leave a poorer nature and biological diversity to future generations.

BEING RESPONSIBLE

- Where man has "killed" biodiversity, "the revenge" of nature has been a prompt one -- to be careful for responsible biodiversity management means responsibility for every action taken;
- The survival of many plant and animal species can not be assured if man does not intervene and takes care for their protection; and
- Every species plays its role in keeping the balance of the nature.

THE BENEFITS TO SOCIETY

- Biological diversity forms the life resources of the plant, and it assures the diversity of food products for humans and all other living things;
- The protection of biodiversity means the protection of the environment on our planet: (i) wetlands are a natural filter for the surface waters, and by cleansing organic compounds they improve the quality of the water and lower eutrophication -- at the same time they protect us from flooding through their capacity to accumulate and maintain water; (ii) dune vegetation and marshes along the coast reduce the erosion from the sea; and (iii) vegetation cover in hilly and mountainous areas protect the soil from erosion, and the bushes and forests protect the soil from winds and flooding;
- Healthy climate and fresh air;
- Rest and recreation are enhanced by rich biodiversity;
- Many birds and animals eat harmful insects, and thus serve to protect the environment; and
- Many plants are known to have health values and many yet to be discovered health benefits will be found in plants in the future.

ECONOMIC VALUE

- Many plant and animal species represent important industrial and health products (fishes, aromatic and medical plants, animal fur);
- Many plants and animals are cultivated and tame, and thus selection and improvement of the genetic material of these species has economic benefits;
- Plants and animals and their products are exported; and
- Tourism and sport hunting can be a source of income for the economy only with high biodiversity values.