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LIST OF ABBREVIATIONS

RAPA	Regional Administration of Protected Areas
AFD	French Agency for Development
NANR	National Agency of Natural Resources
NAPA	National Agency of Protected Areas
Al	Albania
WB	World Bank
EU	European Union
CEP	Critical Ecosystem Partnership Fund
EMERALD	Areas of Special Conservation Interest Network
SHLJF	Shkodra Lake Joint Forum
GEF	Global Environmental Fund
IBRD	International Bank for Reconstruction and Development
INCA	Institute for Nature Conservation in Albania
IUCN	International Union for Conservation of Nature
MC	Municipal Council
CoE	Council of Europe
NTC	National Territory Council
CoM	Council of Ministers
RC	Regional Council
MARDWA	Ministry of Agriculture, Rural Development and Water Administration
SHLEIM	Shkodra Lake Ecosystem Integrated Management
MoC	Ministry of Culture
MoE	Ministry of Environment
MNE	Montenegro
MTI	Ministry of Transport and Infrastructure
MEDTTE	Ministry of Economic Development, Tourism, Trade and Entrepreneurship
MUD	Ministry of Urban Development
NGO	Non-Profit Organization
FMO	Fisheries Management Organization
NP	National Park
NPEI	National Plan for European Integration
MP	Management Plan
RNP	Regional Natural Park
GTDP	General Territorial Development Plan
GoA	Government of Albania
MNR	Managed Nature Reserve
C-SES	Cross-sector Environmental Strategy
BSAP	Biodiversity Strategy and Action Plan
UNESCO	United Nations Educational, Scientific and Cultural Organization
DCM	Decision of the Council of Ministers
WWF	World Wild Fund
PA	Protected Area
EMA	Effective Managed Area
SAC	Special Area of Conservation

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We would like to express our gratitude and acknowledgement to the study leaders Mr. Tomasz Pezold (Project Manager, IUCN SEE), Mr. Oliver Avramoski (Project Officer, Protected Areas) and Mr. Mag. Günther Loiskandl (Consultant on Protected Areas, Nature Conservation and Sustainable Development), who guided and followed up the progress of the project step by step, from the drafting of the structure to its finalization. This sincere acknowledgement goes to the professionalism, technical assistance, advice, time and their continuous commitment to the project.

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INTRODUCTION – REGIONAL CONTEXT

Shkodra Lake is situated in a long-established natural and historic region, conspicuous of heterogeneous topography and geology and complex environmental picture.

In addition, the natural lake ecosystem is where European, African and Asian biogeographical areas overlap, it is the largest freshwater lake in the Dinaric mountain range and is rich in species thanks to its karstic, non-water bearing structures.

Therefore, due to its location, complex combination of factors and mutual interactive dynamics have set the conditions for the colonization and survival of different species of organisms leading to high level of the ecosystem biodiversity.

The ecosystem is composed of a variety of types of habitats and high diversity of plant and animal organisms. What is dominant is the types of freshwater habitats such as lakes and empty marsh areas; Flooded, underwater meadows with floating vegetation; Stubble; Groundwater, Rivers, streams and sources. Terrestrial ecosystems in the form of various muddy-sandstone shores, rocky and gravel areas; Forests, pastures and farmland are present, too.

All these habitats regenerate a large number of different types of taxonomic families. Some of them are vertebrates and vascular plants generally recognized and listed in the database of the protected area. The number of endemic and sub endemic species, the present diversity in the region is deemed high at all levels: genes, species and ecosystems.

The Shkodra Lake biodiversity consists of major regional and European values with the most distinguishing elements of migratory, endemic and threatened species. In Shkodra Lake 850 plant species are identified (phytoplankton including). Among the higher plants 20 species are considered threatened. Inside and around the waters of the lake 76 species of mollusks are identified and recorded, with an estimate of 9 threatened species. Insects are found by the lake shore up to the alpine pastures and are represented by about 192 species. 52 species and subspecies of fish were identified, with 25 taxa belonging to the carp family. In Shkodra Lake and its surroundings there are 15 species of amphibians and 30 species of reptiles. The lake is also an ecosystem of regional values in terms of birds, with about 283 species. On the lake shores and surrounding areas about 57 species of mammals are identified. There are 15 recognized emerged, submerge and marsh grown plant associations.

Because of the high biodiversity value this lake has a series of national and international conservation statuses. In Montenegro it enjoys the status of a National Park, in Albania, the status of Managed Nature Reserve (MNR). At the international level it is designated as a Ramsar site, Emerald area (Special Areas of Conservation for Europe) and Important Area for Bird and Plants.

Albeit tremendous values, this region is still facing problems such as poor management of biodiversity, nature and failed use of natural resources. Diversity of the species and their

habitats inside and around the lake is constantly under threat from the human activity such as: Chaotic development, failure to manage natural resources sustainably; Methods of arranging, managing illegal and uncontrolled poaching/hunting, fishing; Hunting of the wild fauna species and other related concerns; Habitat fragmentation, logging and reed cutting, and invasive alien species; Climate and water regime changes; (chemical and organic) Pollution and Eutrophication; Uncontrolled urbanization, construction of the illegal occupation of land, dysfunctional management of urban waste and dumping of solid waste; Development of tourism and failure to manage the visitors; Discharge of waste untreated water; Use of chemicals and pesticides in agricultural, etc.

Shkodra Lake has an area of 5,490 km² (the largest in the Balkans), 1/3 of which lies in the Albanian territory. For this ecosystem, significant for both countries, a series of political agreements were signed to improve the management and support of international efforts for its preservation. Local residents's key activities and interests are fishing, agriculture, livestock breeding, grazing, collection of medicinal plants, water, tourism, and use of the land, mainly for construction. Due to these activities, the challenge is the overuse and overexploitation of natural resources and land, contrary to the MNR management objective and goals.

Resolution or reduction of the conflict should be achieved through a professional sub-zoning, which will set certain standards and strict rules in the preservation and sustainable use of all resources and values of the MNR. The following are required: traditional and less intensive use of agricultural land, pastures and forests; development of traditional fishing with tools and methods harmless to the fish stocks and in designated fishing areas; development of green ecotourism, in relevant locations; establishment of the proper visitor and tourist hosting and information infrastructure and ecosystem services infrastructure, with exemption of strict areas. Sub-zoning of the area is necessary and should be accepted by all stakeholders.

The sustainable future of Shkodra Lake depends on both countries' coordinated actions. The IUCN office (International Union for Conservation of Nature) for South Eastern Europe is collaborating with INCA (Institute for Nature Conservation in Albania) and Green Home (Montenegro), Ministry of Environment and local authorities and protected area administration for the implementation of the component "Re-Zoning Plan for the Managed Nature Reserve of Shkodra Lake". The main objective is "Enhancing the capacity of protected areas administration through trainings, exchange visits and equipment".

Based on the planned project activities, IUCN aims to create a network assembling stakeholders from Albania and Montenegro and to support their work for the sustainable management of Shkodra Lake. The wise use of the lake biodiversity will guarantee the development of local economy and the preservation of natural resources and values of the managed nature reserve for future generations.

Joint actions aim to strengthen law enforcement, promote the participation of environmental civil society organizations in the monitoring and management of protected areas, raise awareness about the importance of biodiversity among key stakeholders and users of natural resources, especially among key users such as fishermen and farmers.



In the meantime, in order to accomplish the project objectives and activities, close cooperation was enabled between the relevant state authorities of both countries: such as the Public National Parks Enterprise and Administration of Shkodra Lake National Park (Montenegro), with Albanian local authorities such as the Regional Administration of Protected Areas in Shkodra (RAPA), Fisheries Management Organization (FMO) and University of Shkodra (Albania).

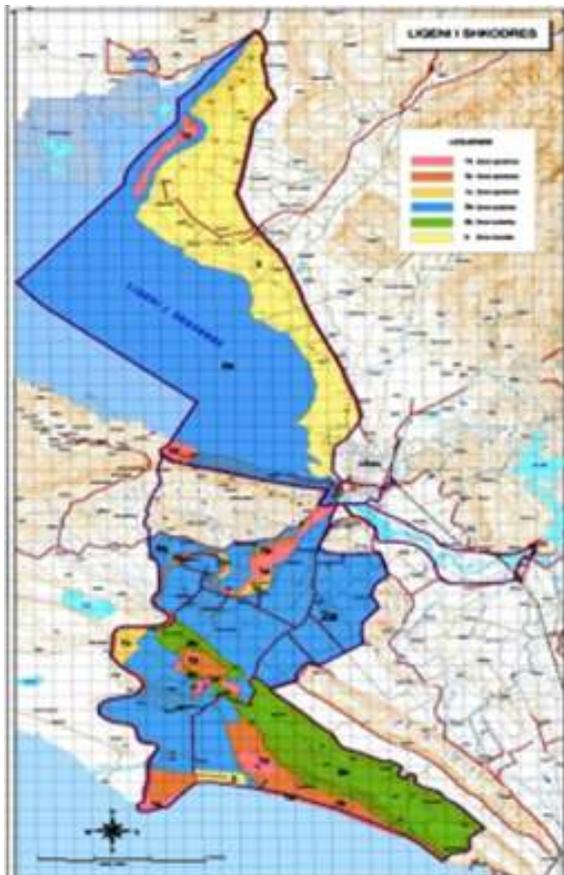
INCA has held several meetings with the responsible authorities, especially with APA Shkodra, stakeholders, mainly the FMO, as well as other groups (key beneficiaries of economic activities and fishing) to receive their feedback about the re-zoning process of MNR Shkodra Lake; about the allowed and banned activities in the proposed zones and subzones accordingly; the need to enforce the legislation, to promote awareness raising and education activities with fishermen, the media, schools and business operators.

The re-zoning process was considered in view of the new administrative changes, the need for the reserve development, the approach to strengthening management and sustainable use of natural resources, closely related to users, residents and business operators, but not at the expense of the desired objectives and management standards.

1. LOCATION

Shkodra Lake is located south of the European Continent, in the West of the Balkan Peninsula, on the Southwest border between Albania-Montenegro. It is part of the Adriatic Sea water system, nearby which it is located. It lies at the end of the Zeta-Shkodra Plain with the following coordinates:

- a. to the North, at the edge of Malo Blato (village of Sinjac), located between coordinates 42°21'54" latitude to the North and 19°09'52" longitude to the East.
- b. to the South, at the Buna River source (from Shkodra Lake, near the town of Shkodra), located between coordinates 42°03'15" latitude to the North and 19°30'00" longitude to the East.
- c. to the East, (from Shkodra Lake, near the town of Shkodra), located
- d. between the coordinates 42°03'15" latitude to the North and 19°30'00" longitude to the East.
- e. to the West, near the town of Rijeka Crnojevica, located between the coordinates 42°21'19" latitude to the North and 19°01'28" longitude to the East.



Altitude above sea level	5 m
Lake area	372.3 km ²
Montenegro	229.8 km ²
Albania	142.5 km ²
Basin area	5,490 km ²
Montenegro	4,460 km ²
Albania	1,030 km ²
Maximum length	44 km
Maximum width	14 km
Average width	8.68 km
Maximum depth	44.3 m (Radushko oko)
Average depth	5.01 m
Volume	1931.62x10 në fuqi të 6 m ³
Total length of lake shore	207 km
Montenegro	149.5 km
Albania	57.5 km

In Montenegro, Shkodra Lake lies along three communes:
Podgorica (capital of Montenegro), Cetinje and Bar/Tivar.

In Montenegro, Shkodra Lake lies along two municipalities:
Shkodra and Malësia e Madhe.

2. LEGAL STATUS

By Decision of the Council of Ministers no. 684, dated 02.11.2005 the Albanian part of Shkodra Lake was designated "Managed Nature Reserve". Under the provisions of Law no. 8906, dated 06.06.2020 "On protected areas", amended, it has the "Managed Nature Reserve/ Natural Park" status, classified under Category IV (IUCN), Article 4 of the law. Article 9 defines: "... Territories that represent bio-centers and bio-corridors of regional and local importance or areas with vegetation, animals, minerals and paleontological findings, specially protected areas or used for research, educational and cultural purposes shall be designated Managed Nature reserves (area of habitats and species management).

The total area of the reserve is 26,535.00 ha. The DCM defines the boundaries of the protected area and land zoning, thus dividing it into: a) the central area, b) habitat management area, and c) traditional development area.

DCM no. 683, dated 02.11.2005, designated the wetland complex of Shkodra Lake and the Buna River area as especially protected natural areas and included them in the list of wetlands of international importance for waterfowl habitats (Ramsar Convention). This decision established the boundaries of the two protected areas included in the Ramsar list in a total area of 49,562.00 ha.

According to this decision, the sole economic activities allowed to be developed in the "Ramsar area" should be tradition-related activities aiming at preserving the environmental values and developing in compliance with the level of protection of the area and the objectives of the management plan.

The Management Plan for the Managed Nature Reserve (MNR) of Shkodra Lake was developed within the project "Integrated Ecosystem Management of Shkodra Lake (IEMSHL), supported by: the Ministry of Environment, Forestry and Water Administration, GEF and the World Bank. The Management Plan was drafted by the Association for the Protection of Aquatic Wildlife of Albania (SHMGJUSH), in collaboration with the Faculty of Natural Sciences of the University of Shkodra "Luigi Gurakuqi" and GR Albania association.

This management plan under the provisions of the law "On Protected Areas" was approved by the Minister of Environment by Order no. 815, dated 21.11.2012.

3. QASJA METODIKE

A descriptive and analytical methodology has been used to accomplish the objectives of this study. The descriptive character is indicated through the provision of the descriptive information of the MNR Shkodra Lake potential, of the legal framework and the institutions in charge of its protection and well-management and the parties interested in the conservation and use of the natural resources of the natural ecosystem. The analytical character is indicated through the socio-economical analysis, the values of the biodiversity and of the ecosystem services, the generation of the economic incomes of the rural population from the activity of the collection, accumulation and processing of natural resources.

Diverse methodology was used in this study: the methodology of research, interviewing, comparison, analysis and mapping. The research methodology was conducted upon wide literature review over the potential of this natural ecosystem; review of similar studies and monitoring of the biodiversity and stability of the undertaken social and economic-touristic activities; review of the laws and by-laws in relation to the administration and management of the protected areas, the types of habitats and species and natural resources; the identification and the role of the institutions responsible for drafting policies and programs for the management, planning and development of the territory within the protected areas and its biodiversity; the identification of the conventions signed for the protection of biodiversity, endangered species, etc.; and identification of other parties interested in the research, studying and monitoring, exploitation of the natural resources, education, awareness raising and public information, etc.

Information was collected through direct meetings in the field with representatives of the responsible local governmental institutions, with the residents, fishermen and business operators.

The mapping approach was used to present the current situation in MNR Shkodra Lake, in order to determine the location of the habitat types, to specify the areas of aquatic wildlife protection, the areas necessary for the growth and reproduction of the fish species and the areas appropriate for the development of ecotourism. Through the use of this methodology, an evaluation of the rezoning of the MNR Shkodra Lake territory was carried out.

The methodology used for the drafting of this document was elaborated in cooperation with the experts selected by IUNC, Mr. Mag. Günther Loiskandl (Consultant on Protected Areas, Nature Conservation and Sustainable Development). The process was led by Mr. Tomasz Pezold (Project Manager, IUCN SEE) under the stewardship of the Institute for the Nature Conservation Albania (INCA), in cooperation with the administration of the protected area of Shkodra Lake.

To conduct the study we used the methodology consisting mainly in finding, using and analyzing the existing information, the management or the spatial planning plan, the previous studies, researches and monitoring, the interviews with the stakeholders selected for the meetings organized during the drafting of the rezoning process of the MNR Shkodra Lake. We underline that we based most of the conclusions on the consultations with experts, mainly with Prof. Dr. Dhimiter Dhora, Prof. ass. Dr. Marash Rakaj and Prof. as. Dr. Rrok Smajlaj.

As we have noticed in most of our previous studies, there is a key problem related to the approach to the community, to the competent management bodies, the administration of the protected area, the accuracy of the data and the real condition of development during the 11 years from the establishment of MNR. The data are spread among different institutions and individuals. There is incompatibility between the methodologies implemented which cause problems during the comparison and the unification of the data. We faced the following

problem with the unification of these studies: for example, the zoning provided in the foundation act of the MNR does not comply with the zoning provided in the management plan (adopted on 21.11.2012). In both cases the proposed zoning is not supported with the legal provisions into force no. 8906, dated 06.06.2002 “On the protected areas”, amended.

Based on the review of the existing documentation and on the available data, the emphasis was on summarizing and placing them in the real context of the situation pursuant to the legislation in force, in order to identify at the same time the missing data and knowledge necessary to be addressed in the territory rezoning process. In this way, previous recommendations are improved and the necessary updated instructions are prepared for the next potential activities. Therefore, detailed information on each administration subzone and other related aspects about the nature ecosystem of Shkodra Lake is transmitted to the MNR administration, to the local governmental bodies, FMO, business and tourism community and visitors.

According to the methodology, the following tables were intended to serve as the guide for the preparatory activities for the rezoning plan of the managed nature reserve of Shkodra Lake (MNR). They were on the same line with the work program for the MNR zoning management. The technical staff of the administration responsible for the management of the MNR, supported by the INCA experts had to review and discuss carefully the preliminary questions, and gather the necessary information for the answers.

1. Establishment of the Working Group for the drafting of the zoning plan for MNR Shkodra Lake

Members of Working Group	Role, responsibilities, tasks	Comments
Tonin Macaj , Specialist of the protected areas RDFS, Shkodra.	Chairman of the Working Group, manages the process of the drafting of the zoning plan and coordinates the work of the working group.	*Now in the RAPA staff, Shkodra.
Martin Ahu* , Specialist of the protected area RDFS, Shkodra.	Member of the Working Group.	*Replaced with Eduard Gajtani and Festim Brajaj, Specialist in RAPA.
Vesel Tusha , Specialist of the protected areas, Shkodra sector.	Member of the working group.	
Nihat Dragoti , INCA	National consultant supports the working group.	
Genti Kromidha* , INCA	National consultant supports the working group.	*Replaced with Daniela Mane, national consultant of INCA.
Zamir Dedej* , INCA	National consultant supports the working group.	*Left, General Director of NAPA.
Günther Loiskandl , Expert for the protected areas, engaged by IUCN.	National Consultant ensures capacity building and technical consultancy.	

2. Identify clearly the purpose and objective of the management of MNR Shkodra Lake

- Review the relevant legislation (laws, decision, regulations) documents of the national polices and strategies (existing management plan) and the international conventions (RAMSAR) or the bilateral agreements for the management of Shkodra Lake.
- Make a list of the main laws and documents and note important parts from their content (general or specific rules related to the zoning of the MNR, the zoning types, the schemes, the planning, the implementation and management, the distinction between the uses and the regulations between different areas).
- Ensure that the planning process, the deadlines and the procedures are in compliance with the existing legislation and requirements for the highest levels of management and governance.

3. Determine the groups of the actors that should be included in the zoning process of the MNR Shkodra Lake

It is important that you identify the following at the beginning of the zoning process:

- The institutions and the individuals that might contribute and support the zoning process with the knowledge, experience and the data they possess (for example: universities, NGOs, experts, scientists, local residents);
- The institutions, associations, individuals and the groups stakeholders who have an interest in the conservation (for example: the state authorities, environmental NGOs) and the use (state authorities, users' associations (e.g. FMO), the owners, touristic businesses) of the biodiversity and nature resources inside and around MNR Shkodra Lake.

4. Determine the special values and objectives of the nature conservation for the MNR Shkodra Lake

- (What are the ecosystems, the habitats and the umbrella types/groups of the main terrestrial and aquatic habitats, which determine the need for the protection of this area? What are the main environmental protected area services, the ecological and abiotic values of the protected area that determine the needs for protection? What should be done to ensure or to improve their conservation? Where are the regions specifically in need of conservation, within the area, the regions to be ensured with environmental services in respect to their abiotic values?), etc.

5. Review and evaluate the existing zoning and assess the efficiency of its implementation

- (Do you consider the existing zoning appropriate and sufficient with regard to the design, where are the planned areas and what are their objectives? Is its implementation appropriate (drafting, the official designation and raising the awareness of the public, the control and the implementation of the rules)? What gaps are there? What options for the improvement of the situation would you suggest? Has the existing zoning been carried out based on sufficient knowledge? What knowledge

gaps from the past do you find from the earlier and current zoning? Have the stakeholders been involved sufficiently in the process of the existing zoning?).

6. Collect the missing information or the updated one by analyzing analysis of the existing data

- (What sources of data can be used, where are those and who has them? How can we get existing information or data which are not available for the working group? Who should we ask? What resources are necessary? What observations in the field are necessary? What resources are necessary? What resources are necessary for the make these observations in the field? Where, when and against what threats is the conservation of the special values of the area more essential and effective? What restrictions appear from the landscape or other ecological factors (for example: difficulties for the designation of the lake borders)? What are the main practices of use and interests of the residents and of the local communities? What might be the conflicts of interest with the main groups of users such as people involved in commercial fishing, touristic use, etc.? How can these potential conflicts be solved or minimized? What uses may be allowed, at what level and extent, where and when, without threatening the needs for the conservation of nature and for meeting the objectives of the protected area management?).

7. Determine the infrastructure and constructions that have a direct or indirect impact on the nature values and the conservation objectives of the MNR:

- Make a logical list taking into consideration all the infrastructure and the existing formal or informal constructions and the ones that are potentially planned within the territory (on the land and water) or outside the territory of the MNR, which have or might have a direct or indirect impact on the nature values and the conservation objectives of MNR, using the following table (which is filled in with some examples, just as a model, in red), and
- Find all these infrastructures and constructions drawing them on a printed map of the MNR.

8. Determine the activities and the resources of land use that have a direct or indirect impact on the nature values and on the conservation objectives of MNR :

- Make a logical and appropriate list of all existing and potential, formal or informal activities and land uses within the territory (on land and water) or outside the territory of the MNR, which have or might have a direct or indirect impact on the nature values and the conservation objectives of MNR, using the following table
- Find these activities as much as they can be localized drawing them on a printed map of MNR.

9. Establish a working group for the Zoning Plan of the Managed Nature Reserve of Shkodra Lake

The international expert, Mr. Gunther, prepared a concept paper on guiding the rezoning of a protected area based on the IUCN standards and best international experiences, which were

taken into consideration during the process for determining the Rezoning system of the MNR Shkodra Lake.

The following general theoretical information on PA zoning was extracted from the IUCN Directives on Planning the Protected Areas Management (2003) with some changes and shortenings

The management plans on the protected areas might identify different “management zones” to fulfill the management objectives. The management subzones are a territorial part of a Protected Area where strengthened management is implemented and the level of usage is separated. Strict protection regime on the one hand and tolerated interventions of the use on the other might be determined in special subzones with changes in management within a protected area. Zoning is a widely and long-time used method and it feeds the information system and the well-orientation of structured management.

“Zoning determines what can and cannot happen in different subzones of a PA, in terms of nature and cultural resource management, human use, profiting, exploitation form and experience of visitors, approach, facilities, development, maintenance and achievements of the PA. Limits of acceptable development and use in a PA are determined through the zoning management”. (Young and Young, 1993).

Zoning identifies where the different strategies for the management and the use shall carry out the management objectives better in order to reach the desirable future for the PA. Within each zone, the management directives should be reasonable but they might change in type or intensity form the others applied in other zones for the implementation of several objectives. The zoning is usually used:

- to ensure the protection of the critical or representative habitats, ecosystems and ecological processes;
- to separate the human contradictory activities;
- to protect the natural and/or cultural qualities allowing for a reasonable spectrum of human activity and
- to enable the restoration and the improvement of the damaged areas.

Zoning might be determined from the timeframes, the times the safe management is implemented. Thus, the zone may be used on a temporary basis, managed in compliance with the time of the day, the days of the week or the months of the year in order to allow for the cultural events and to recognize the seasonal changes, etc.

Zoning is a widely-used and useful tool ensuring the control on the zones designed to achieve the conservation and use for different objectives. However, the zoning of the protected area is not always necessary. Zoning should simplify and not complicate the management of the protected areas.

We should be careful not to create a complicated zoning model. The use of several subzones with small distinctions among them might be confusing for the public and the management, as well.

Management objectives should be accomplished by designating a minimal number of necessary areas. When the zoning is used, the subzone should be identified easily by the land users and they have to be provided with the information about the subzone they belong to and the reasons these restrictions are applied.

Special situations might require special attention in terms of the use and modification of subzones, for example the “Time-and-Place” zoning. This might include the seasonal considerations, the circulation of vehicles, sailing, etc.

There is not one single formula for the identification of the management subzones. Planners should start with the relevant management objectives for the subzone and within the scope of the developed options. The subzones are identified using the best available information and the professional considerations of the multidisciplinary planning team. Some factors to be taken into consideration include:

- Protection of resources with special values.
- Limitations determined by the landscape and other ecological determinants, for example the type of land, hydrology, and landscape values.
- Ensuring various experiences from visitors.
- Elimination or reduction of mismanagement and other activities that damage PA; or of unnecessary obstacles hampering the PA management.
- Capability of the PA to support different types of the desired good management and development.
- Outputs from participatory consultations.
- Government policy and decisions in relation to the landuse; and
- Use of the practices and interests of the local population and communities.

Types of the management subzones of the protected areas management for IUCN Categories I-IV:

Various different types of nominations of the management subzone have been used in the protected areas. However, some common types used in the IUCN categories I-IV of for the protected areas might be identified.

- **Special zone or zone with unique values:** This subzone must contain special or unique and obvious values, for example important nature areas such as the wetlands, the estuaries or the main marine areas, etc with protection as main priority. Those parts of the protected areas, with special values shall be protected through zoning which recognizes these special qualities and limits or excludes undesirable visits.

- **Wildlife zone:** The roads and the development of infrastructure in this zone are excluded, whereas diverting managing techniques are banned. The nature processes prevail in this zone. Under normal conditions camping might be permitted by the quiet nature, with strictly controlled numbers and the extent. Sometimes, these zones are called “main zones”, as they conserve the natural values.
- **Zones with limited development:** The limited development may be permitted in this zone, but it must not be harmful for the special and unique values of the protected area. An important purpose in this zone is to look after the type of recreation, and mitigate the pressures on the wildlife zones. In all cases, the development should have minimal influence and should apply only in the designated zone.
- **Zones with intensive development:** In several strict protected areas, this would be inappropriate. The purpose of intensive development is the adjustment of streets, main hotels, accommodation and the service facilities. Our aim should be to avoid the designation of such zones inside or near the zones that contain special ecosystem values. In several protected areas, the current trend is that intensive development moves outside the borders of the zone. Even though this may increase the service expenses in the protected area, the experience has shown that:
 - It facilitates the time of management and resources.
 - It is usually less harmful for the natural values of the protected area.
 - It avoids the establishment of medium industry services or activities within the protected area.

The arguments in favor of the more intensive development permitted within the protected areas might be based well, particularly when the protected areas are big. This includes:

- have stronger control on the projection, use and positioning of facilities and their influence;
 - allow visitors to extend their stay in the PA;
 - provide for better extension and recreational uses for visitors;
 - increase profits from the visitors’ fees.
- **Zone for traditional users:** Many protected areas provide opportunities for use by the traditional users. When appropriate, the limited use might happen to ensure fundamental benefits for the traditional users.

Types of management zones, IUCN Category V and VI :

Within the protected landscapes and the zones for use, it is possible for the zoning to provide the adaptation of the economic, cultural and services.

The zoning in the Category V will usually be achieved by using the land use plans which reflect the geographically based policies for different parts of the landscape or seascape. Therefore, a part of the zone might be designed for the economic and other activities concerned for the protection of the nature values.

In order to have a successful zoning plan it is necessary to ensure that the appropriate public consultation is undertaken during the development of the plans and the results are accepted by the affected parties. The processes to consider the applications for development and the regulatory measures implemented should be taken into consideration in the zones where is determined what is and is not permitted within.

Zoning is a fundamental tool for planning the manifold use, Category VI. Zoning determines the borders for the permitted activities within the protected area and as such, it determines the different models of use. The zones and the policies implemented should be described in full details in the Management Plan.

In the several uses of the PA, this part of the Management Plan is critically important because it reflects the activities that might be undertaken, for example commercial fishing, tourism and relevant activities and research.

The methodology and the information collected pursuant to this methodology have been discussed with the working group and some of the main identified local stakeholders, who have specific interests in the protection of nature and biodiversity, in the multifunctional and integrated governance of the nature resources associated with Shkodra Lake, with due respect to the international standards of co-management of the Shkodra Lakenature ecosystem, which at the moment has two standards: National Park, for the Montenegrin part and MNR, for the Albanian part.

4. MISCELLANEOUS INFORMATION ABOUT SHKODRA LAKENATURAL SYSTEM

Shkodra Lake is part of the Mediterranean Subregion. It is the largest lake in the Balkan Peninsula. It is formed by the geo-tectonic developments of a wider region and its strong karstic developments.

Shkodra Lake Watershed's surface area is 5490 km². It is a field lake and lies at the endpoint of Zeta-Shkodra Plain and its surface area 165 km². On the West, from the source point of the Buna River to the Cape of Radusha, the lakeshore is generally rocky. There are many bays, capes and isles interesting from the geological, geographical and ecological point of view. Seasonal water level fluctuations are common for the Lake and they may at times reach 5m. Shallowness is a typical feature of the Lake. The Lake is simply considered litoral environment and is closely connected to the sediment biota.

The Zeta-Shkodra Plain (the whole Shkodra lake Watershed) is part of the geo-tectonic unit Deep Karst Area. The Plain is bordered with the mountain mass of Bjeshket e Namuna, Prokletije in the East and Northeast. In this area, the axis of the Dinaric structure shifts from Northwest-Southeast to West-East and Southeast-Northeast.

The soil formation of the entire Shkodra Lake Watershed consists of limestone combined with Eocene Epoch dolomites of Upper Crete, paleogene deposits of clay, pumice, conglomerates and flysch. The Northeastern and Easter parts are covered with rocks from the

geo-tectonic unit of Cukali Area. In the southern Zeta Plain, under the Quaternary sediments, pumice and sandstone layers are located varying from 1-700m thick. Quaternary sediments in Shkodra Lake consist of glacial, glacio-lacustrine, fluvial-glacial, alluvial and diluvial sediments. Shkodra Lake consists of lacustrine, estuarine and delta sediments. The current landscape is the output of slow, eroding processes of the water over the limestone rocks (in millennia).

The average above sea level of Shkodra Lake Watershed is 770m. The altitude is considerable and indicates that the Lake is supplied with water from the mountain where the precipitation rate is 2500-3100mm rain/year. Shkodra Lake Watershed is quite complex. The Zeta-Shkodra Plain consists of Bjellopavlic Plain, Zeta Plain and Upper-Shkodra Plain that reach down to the Lake. Zeta-Shkodra Plain and Shkodra Lake are surrounded by the Lovçen, Sozine, Sutorman, Rumije Mountains and Albanian Alps.

Upper-Shkodra Plain lies along the eastern shore of Shkodra Lake, from the town of Shkodra to the village of Brigje with a surface area of 390 km² and altitude 5-80m. It is bordered by the Postribe, Reçi dhe Kastrati hills. It has an irregular relief and in the North consists of carbonate steep rocks reaching the water and on the Mokseti hills, rocks have sharp slopes. The Quaternary alluvial-proluvial deposits lie on a Mesozoic carbonate foundation and partly on the pliocene clay deposits in Cezme of Koplikut and Reç. In the Upper-Shkodra Plain there is no groundwater flowing.

The Watershed shore, from South (Buna) to the North (Gornje Blato) is limestone-rocky. In many spots, the maximum altitude is marked near the water such as in Shiroka (140m), Ostrosi (387m), Curjan, Sierça dhe Kërnica (237m), near Radusha (265m), Obida (171m), Ploça (172m) and Gogash (197m). The shoreline from Prevlaka to Podhum consists of fields and marshes. The Northeast consists of vast marshes, mainly dominated by the marshes of Matagushi-Hug, Zhar-Ruda and Grabovnicës. The extreme part of Hoti Bay is low. Almost the entire rocky-hilly area near the Eastern shore, from Hoti to Gashaj is covered with forest vegetation (forests-shrubs). The shoreline from Gashaj to Shkodra is mainly field. Two segments Gashaj-Ubica and Gril-Shkodra are marshland. In Flaka, there are aquatic trees.

The Perroi i Thate (Dry Stream) Valley lies between the ranges of Rabë-Biga of Gimajt-Kunora of Lohes, to the East, and the ranges of Radohinë-Veleçik, to the West. From Okoli of Bogato Ducaj, Përroi i Thatë flows through a crescent valley with slopes more than 1300m deep. In Ducaj it connects with the Troshani, its most important creeks. After crossing the village of Gradec, it flows through the Upper-Shkodra Plain before draining into the Lake.

The Moraça River is 97km long. It originates from the karstic source of Koka e Moraças. The Zeta and Cemi Rivers are Moraça creeks. The Cemi River is 58,8km long, with 26,5km in Albania and 32,3 km in Montenegro. The Cemi River consists of two creeks, Cemi i Vuklit and Cemi i Selcës, that connect at the exit of Tamara. The Cemi River drains into Moraça in the lower Zeta.

Shkodra Lake, the Moraça the Buna, the Kiri and the Drin and some interconnected rivers and streams form a unique complex system and are hydrologically and ecologically interdependent.

The following rivers drain in Shkodra Lake and cause water regime fluctuations: in Montenegro: Seljanshtica, Shegrtica, Plavnica, Gostiljska Pjavnik, Macro Mreka and Micro Mreka, Zhalica, Zbelj (Grabovica), Urelja, etc.' in Albania: Përroi i Thatë, Rrjoll, Banushi, Vraka, etc.

With regard to sources, there are no complete studies on the location of all sources in the Lake floor, their exact number, origin, depth, geological formation, hydrology, water regime, physical and chemical properties. Their contribution to the Lake might be 30 m³/sec.

In the Southeastern shore the deepest sources of the Lake reach tens of meters under the sea level. There are 14 sources located in this segment and the most important ones are Radush, whose measured depth was over 80m but now it is deemed more than 100m; Mërçiluka 22,5m deep; Bljaca 18,6m deep; Curjani 19m deep; Topuhana 24m deep and Bisaçi 22,5m deep.

In the Northwestern shore more than 40 sources are located and the most interesting ones are Modra 12m deep; Macro Eye and Karuni 28m deep; Kallugjeri 18m deep; Vola 28m deep and Black Eye 26,5m deep.

In the Northern shore the following sources are found Ploça 19,4m deep and narrow sources of Koshare.

In the Eastern and Southeastern shore the most important sources are Hurdhanat e Kosanit, Shegani, Viri, Black Eye, Kripça, Ushtari, Gjoni and Llazo.

Artesian waters are located in the sandstone fluvial-glacial sediment. Their outflow occurs when the lake is calm in the North and maybe in the Southeastern part of the Lake out of the shallow floors under the mean or maximum water level.

The water reserves found in the Mesozoic era layers are located in profound depth but little is known about them.

The mean air temperatures in the region around Shkodra Lake reach 14-16°C annually. The average highest temperature is from June to September. In July it is 24,6-25,9°C in Shkodra, and 20,9-27°C in Virpazar; in August it is 21,4-27,5°C (in Shkodra) and 20,1-29°C (in Virpazar). The average lowest temperature is in December 6,4-6,9°C in Shkodra and 1,7-8°C in Virpazar; in January it is 5,0- 6,5°C in Shkdora and 0,6-6,7°C in Virpazar and in February it is 6,5-8,8°C in Shkodra and 0,5-9,4°C in Virpazar.

The mean precipitation in the Lake is 1750-2500mm/year. It rains mostly in the West and South of the Lake in autumn and winter. The average annual rainfall in Shkodrais 2065mm, and 2466mm in Virpazar. The rains the least in July (inShkodra 42mm and in Virpazar 46mm). Rainfalls are mostly present in October (230-232mm), November (274-349mm), December (280-344mm), January (243-331mm), February (200-261mm), March (180-

242mm) and April (174-213mm). In Shkodra Lake Watershed precipitation may reach 3250mm/year.

In Shkodra winds blowing from the East are dominant with a mean speed of 4,7m/sec; from the Southeast 4,4m/sec; from the South 4,8m/sec and the West 3,3 m/sec. In Virpazar winds blowing from the Northeast and Southwest are dominant. There are around 15 periodic and local winds blowing on the Shkodra Lake. The most conspicuous ones are Murlani and Shiroku.

Shkodra Lake is composed of three habitat systems: (i) the lacustrine system comprising the limnetic and litoral habitats; (ii) the palustrine system comprising habitats distinguished by vegetation and presence or absence of water; (iii) the riverine system comprising ever-inundated or occasionally inundated habitats.

Shkodra Lake develops season-related habitats transforming from lake habitats to lake-marsh habitats with multiple ecologic niches. During the warm season, the litoral sub-system area of the Lake shifts deep and is replaced by marsh habitats.

Shkodra Lake falls under category 8 in the 10-gradient naturalness system. High naturalness is a unique feature of the Lake's ecosystem. Generally, no extra material flows into the Lake, there is no alternation of the physical geomorphology or availability of physical elements. The lake dynamics are natural. The habitat fragmentation level is moderate.

Artificial elements such as digging out sand; constructing buildings, docks, roads although are not prevailing in the lake landscape, their chaotic and unstable development is concerning. Sewage and waste water, aluminum facility wastes (MNE), fertilizers/pesticides are processed by the system and may hamper its resilience. The high sustainability is a feature of the Shkodra Lake ecosystem which is a shallow lake with clear waters.

5. LEGAL FRAMEWORK FOR PROTECTED AREAS IN ALBANIA

Shkodra Lake is a cross-border lake divided between Montenegro (2/3 of the general surface) and Albania (1/3 of its surface). There are different legal provisions established on both sides of this ecosystem, such as by-legal acts, regulations, administration plans and spatial planning with an impact on the organization of protection, management and use of the natural ecosystem.

The management of protected areas in Albania is based on Law no. 8906, dated 06/06/2002 "On Protected Areas", amended. The categorization of the areas, the status and level of protection for each area is based on the IUCN criteria. Protected areas are considered as important tools for the management of the ecosystem, habitats and species.

Table of comparison and definition of categories of management for protected areas

Categories of management	According to IUCN/CNPPA	According to the Albanian legislation
Category I. Strict Nature Reserve / Scientific Reserve	To protect the nature and preserve the natural processes in an undisturbed status, in order to have ecologically representative examples of the natural	Territories no smaller than 50 ha, with special natural values, formed of natural ecosystems or easily changeable, that represent biocentres and biocorridors of

	environment for scientific studies, environmental monitoring, education, and preservation of genetic resources in a dynamic and evolutionary condition.	national and regional significance are designated as strict nature reserves.
Category II. <i>National Park</i>	To protect natural areas of a specific scenic beauty, of national and international significance, for scientific, education and recreational purposes (relaxation and entertainment). National parks are large natural areas materially unchanged from human activities, where the extraction of resources is not allowed.	Large territories, normally no smaller than 1000 ha, unique for their national and international values, large parts of which are natural ecosystems little affected by the human activity, where plants and animals, and the natural and physical environment are of special scientific and educative relevance, are designated as NPs.
Category III. <i>Natural Monument</i>	To protect and preserve natural features of national significance, due to special interests and their unique characteristics (unrepeatable). They are relatively small areas focused on the protection of special features.	Natural formations (including special trees), with a surface up to 50 ha, special geological and geomorphological formation, mineral deposits or rare and threatened types of habitats or habitats of special scientific and aesthetic significance and value are designated as natural monuments.
Category IV. <i>Habitat/Species Management Area /Managed Nature Reserve</i>	To provide the necessary natural conditions to protect species, groups of species and biotic communities of national importance or physical characteristics which require special human manipulation. A controlled use of some resources may be allowed.	Territories representing biocentres and biocorridors of regional and local importance or particularly protected areas of plants, animals, minerals and paleontological findings, or areas that are being used for study, educative and cultural purposes are designated as managed nature reserves (habitats and species management area).
Category V. <i>Protected landscape and seascape</i>	To protect natural landscapes of national importance which are characteristic of a harmonic interaction between people, land and environment, during their use for tourism, relaxation, and recreational activities, within a normal living stile and economic activities in these areas. Areas included in this category are mixed cultural and natural landscapes of high scenic values, where traditional uses of the land are conserved.	Territories larger than 1000 ha, with a harmonic and well-formed landscape, with a developed characteristic relief, a variety of ecosystems or land, and historical monuments are designated as protected landscapes.
Category VI. <i>Protected area with sustainable use of natural resources</i>	To protect the natural resources of the area for future use and prevent development activities that may damage the resources. This is a temporary category which is used until a permanent classification is done.	Areas that include vast, relatively isolated and uninhabited territories, difficult to enter to or regions that are still less populated and under constant pressure to be populated and used, which transformation for intensive use is unclear or inappropriate are designated as protected areas of managed resources.

According to the law, terrestrial, marine and coastal territories designated to protect the biological diversity and associated natural and cultural assets, which are legally managed

with modern scientific methods and for which the adapted IUCN categories apply, are declared “protected areas”.

Law no. 9868, dated 04/02/2008, “On some additions and amendments to Law no. 8906, dated 06/06/2002 “On Protected Areas”, stipulates:...The territory of the protected areas is divided in subzones, according to the significance of the habitats and ecosystems therein. The internal zoning may include a core area, a recreation area, a traditional use area, a sustainable development area, as well as other subzones that fit the territory. In addition, the zoning process reconciles the protection level to the characteristics of the subzone, considering the nature of the area, the types of human activities that take place in that area and their impact on the nature.

The Decision of the CoM approving the protected area defines the denomination, surface and level of protection of the subzones. Equally important is: RAPA no. 267, dated 24/4/2003, “On procedures of proposal and designation of protected and buffer areas”, that completes the legal framework on the designation, administration, management and sustainable use of protected areas and natural biological resources and DCM no. 897, dated 21/12/2011, “On the approval of rules on the designation of special areas of conservation” (SACs), in the framework of the network Natura 2000, where SACs are declared territories included within the PAs, located within the network representing the PAs, as well as ecosystems, habitats and landscapes outside this network.

Nature protection and sustainable use of natural resources is one of the key priorities of the Albanian Government. Restriction of environment degradation, loss of great natural values, the high level of air pollution in urban and industrial centres, massive land erosions, forest damages, pollution of underground and surface waters and protected areas, etc., are some of the key issues in the long-term development path of the country. Nature protection, within the PAs system is increasingly being considered as a key instrument to protect the highest biodiversity values in the country.

Nature protection is one of the priority domains related to the *acquis communautaire* in the environment field. As stipulated by the SAA (articles 70/3, 108), the approximation of the Albanian legislation to the *acquis* for the environment sector is directly related to the environmental standards and the critical duty to fight environment degradation in order to promote environmental sustainability. This objective has been included in sectoral strategic documents, such as: the Cross-Sectoral Environment Strategy (C-SES) and the Biodiversity Strategy and Action Plan (BSAP).

As concerns nature protection, the process of approximation to the European Union (EU) key directives is already at an advanced phase, such as the case of the Directive of Birds and Habitats.

The new management concepts for PAs are based on coordinated actions to protect natural values through the sustainable use of natural resources from local inhabitants and interested actors. These new management concepts see the inhabitants and users of the natural resources as a very important component of the PAs integrated management process.

Legal provisions oblige state institutions to provide their contribution concerning the protection and management of the protected areas, implementing their legal obligations on environment and protected areas in particular, including the CM, MoE, line ministries, NAPA, RAPA, and central, local and municipality government units which play a unique role in safeguarding the protected areas within the territory of their activity, implementing the legal requirements in force and their organic laws. In addition, responsibilities and obligations of individuals, social groups, businesses and other actors related to PAs administration, properties and businesses included within the PAs network should be clearly and precisely established within the legal framework.

Law no. 8906, dated 06/06/20202 “On Protected Areas”, amended. The aim of the law is to provide special protection to many key components of the natural areas, biodiversity and nature, through the establishment of a network of protected areas based on IUCN category system. In addition, the law provides measures on the development of the ecotourism and other economic profits, sharing information and educating the public.

Law no. 9587, dated 20/7/2006 “On Protection of Biodiversity”, amended. It aims to protect and conserve the biological diversity, and regulate the sustainable use of its components through the integration of the key elements of biodiversity in strategies, plans, programs and decision-taking at all levels.

Law no. 9867, dated 31/01/2008 “On Protection of the Wild Fauna”, amended. It aims to protect, to manage and control the wild fauna in order to preserve the species, populations and habitats, their migration ways, as well as provide for their requirements for food, shelter and breeding.

Law no. 10253, dated 11/02/2010 “On Hunting”, amended. The law establishes rules and requirements on hunting as a traditional, sportive, relaxing and touristic activity, and hunting sustainable management, considering the wild fauna as a national asset administered and protected by law.

Law no. 10431, dated 9/6/2011 “On Environment Protection”. The law aims to protect the environment at a high level, conserve and improve it, to prevent and reduce risks against human life and health, guarantee and improve the quality of life to the benefit of the present and future generations and provide conditions for the sustainable development of the country. The law defines the principles, requirements, responsibilities, rules and general procedures to ensure a high level protection of the environment in the Republic of Albania.

Law no. 9385, dated 4/5/2005 “On forests and forestry service”, amended. The aim of this law is to define equal rules on the relationships, duties, rights and responsibilities of the state institutions, local government units, non-profit organizations, private and business owners concerning the protection, administration, management and use of the national forest fund, forest lands and their natural and biological resources. The law regulates the protective, social, eco-touristic and economic activities that take place in the national forest fund and other forest and non-forest resources, based on the principles of sustainable and multifunctional breeding, as reflected in the Strategy and development policies for the forest

and pasture sector. The Law regulates the organization and functioning scheme of the administration of the Albanian Forestry Service, its juridical relations, responsibilities and duties in order to create a reliable and professional forestry service.

Law no. 10120, dated 23/4/2009 “On protection of medicinal, ethereal and tanifer natural plants fund”, amended. The law aims, inter alia, to: a) ensure the sustainable development of the territory through the rational use of the land and natural resources; b) evaluate the current and perspective potential for the territorial development at national and local level, based on the principle of balancing natural resources, economic and human needs, and public and private interests.

Law no. 64, dated 31/05/2012 “On Fishing”, amended. It regulates the fishing activity in general and its management, ensuring protection to sea creatures and internal waters through the promotion of sustainable development of activities in the marine space and internal waters of the Republic of Albania.

Law no. 111/2012 “On the integrated management of water resources”, amended. It aims to protect and improve the aquatic environment, temporary and permanent surface waters, internal marine and territorial waters, the exclusive economic zones, the continental shelf, cross-border waters, underground waters and their status.

Law no. 107/2014, dated 31/07/2014 "On territorial planning and development", amended. The main objective of the law is to provide a sustainable development of the territory through the rational use of the land and natural resources, ensure an efficient functioning of the system through public involvement in the decision-making process and develop territorial monitoring plans.

Law no. 93/2015, dated 05/10/2015 “On Tourism”, amended. The objective of the law is to promote Albania as an attractive tourist destination for national and foreign visitors, supporting the development of sustainable tourism and making sure that tourist service operators fulfil the requirements of tourists in a healthy and safe environment, while respecting the needs of the present host communities and future generations.

Directive of the Council 92/43/EEC “On the conservation of natural habitats and of wild fauna and flora”. The main aim of the Directive is to protect biodiversity in Europe and create special protected areas.

Directive of the Council 2009/147/EC “On protection of wild birds”. It aims to create a full protection scheme for all types of wild birds within the territory of the European Union. Creates special protected areas.

EU Water Frame Directive 2000/60/EC. Establishes a framework of activities in the water policy area and aims to achieve a better quantitative and qualitative status of the entire aquatic body (including marine waters up to several kilometres from shore).

The Directive defines the “surface water status” as the general expression of the status of a body of surface water, determined by the poorer of its ecological status and its chemical status. Thus to achieve "a good surface water status" means the status achieved by a surface

water body when both its ecological status and its chemical status are at least “good”. The ecological status refers to the quality of the structure and functioning of aquatic ecosystems associated with surface waters. Water is a key aspect of the entire life and the water frame directive establishes standards that guarantee the use of such source.

Convention on Biological Diversity. Seeks to establish a system of protected areas and use their management to support the protection, sustainable use and equal division of benefits. The Convention recognizes the Protected Areas as economic institutions that play a key role to relieve poverty and protect the critical vital systems of the population.

Convention of Berne "On the conservation of the European wildlife and natural habitats". The objective is to guarantee the conservation of the wild flora and fauna and their natural habitats.

Convention of Bonn "On the conservation of the migratory species of wild animals". It aims to conserve all the sea, land and water migratory species in migratory zones.

Ramsar Convention “On wetlands of international significance as habitats of waterfowls”. Its objective is to urge joint responsibilities of signatory countries to protect the wetlands which are important for the water birds, as permanent inhabitants, and promote the wise use of the wetland ecosystems. The implementation of these responsibilities is carried out in the ecosystems included in the list of wetlands of international significance, in particular as habitats for the water birds.

Convention on Protection and Use of Transboundary Watercourses and International Lakes. The Convention is a key international regional agreement in this field. It emphasizes that cooperation among member states concerning protection and use of transboundary watercourses should mainly apply through agreements among countries bordered by the same waters, in particular when such agreements exist. The Convention establishes significant obligations to prevent, control and reduce transboundary impacts and ensure the sustainable management of waters; ensures that transboundary waters are used for sound ecological purposes and a rational management, protects water resources and environment through bilateral agreements and multilateral cooperation, consulting and monitoring, etc.

In addition to the above-mentioned laws, acts and by-legal acts, there are other key strategic documents concerning the protection, use and management of Shkodra Lake. The main planning document for the area of Shkodra Lake is the General Development Territorial Plan (GDTP) that includes MNR Shkodra Lake.

MNR Shkodra Lake Management Plan remains an equally important document that unfortunately has yet to be implemented.

Other relevant documents concerning the natural ecosystem of Shkodra Lake include:

- The National Plan for European Integration (NPEI), until 2020;
- The Cross-Sectoral Environmental Strategy, until 2002 (draft);
- Strategic Policy Document on protection of biodiversity, until 2020;
- The Strategy for Tourism Development in Albania, until 2002;

- The National Strategy on Agriculture and Rural Development.

Shkodra Lake is the most relevant transboundary ecosystem between Albania and Montenegro. Cooperation between the two governments on environmental issues in Shkodra Lake has intensively initiated after 1990.

In 1994 a cooperation protocol was signed between universities in Shkodra and Montenegro for scientific research in Shkodra Lake. As a consequence of the cooperation, Shkodra Lake Joint Forum (SHLJF) was established, aiming to address issues related to the Lake under a bilateral angle.

The cooperation has also materialized in the implementation of several small projects and cross-boundary activities from non-profit organizations, as well as the local and central governments of both countries, supported by international organizations.

In May 2003, the Ministers of Environment signed the Memorandum of Understanding on protection and sustainable development of common resources. Both countries are committed to protect the natural resources of Shkodra Lake in a coordinated and integrated manner, as well as improve the national regulatory level and institutional capacities. Both governments showed their will to cooperate in order to improve, protect and manage Shkodra Lake and its resources.

In June 2010 the memorandum was revised based on new developments and current situation in both countries.

The cooperation continued with activities in the framework of the project for the integrated management of Shkodra Lake ecosystem. For this purpose, a cooperation agreement was signed in 2008 and a Bilateral Secretariat and joint working groups were established, focused on the following topics: Shkodra Lake management, promotion and tourism, legislation and planning, monitoring and research.

The working groups are composed of local representatives from the academic community, administrative and leading structures, policy-makers from the local and central government, as well as non-profit environmental organizations. The Secretariat organizes periodical meetings between the respective Albanian and Montenegro groups in order to integrate the research and scientific issues related to the aspects of Shkodra Lake protection, administration and management.

The experience of the recent years indicates that the principles and objectives of PAs network management should be clearly defined; as well as selection criteria and approval of specific categories; permitted or prohibited activities or activities that require special permission through internal zoning and territorial planning of PAs; definition of the structure and methodologies to draft and implement the management plan; establishing of management structures and committees, their duties and responsibilities concerning the administration, supervision and implementation of programs and management plans, scientific research and monitoring, as well as issues related to communication, awareness raising and education.

6. AN ANALYSIS OF THE KEY STAKEHOLDERS AND THEIR ROLES TO PROTECT, MANAGE AND USE SHKODRA LAKE

The organization and functioning of the government bodies is based on the Constitution. The highest executive power and decision-making body is the Council of Ministers (CoM) composed of the Prime Minister, the Deputy Prime Minister and the ministers. The CoM exercises every state function that has not been bestowed to other organs of state power or local government. The CoM establishes the directions of the general state policy. In case of need and emergency, under its own responsibility, the CoM may issue normative acts on temporary measures, which have the effect of a law. In addition, the CoM appoints the prefects as its representatives in every region.

The CoM approves the current secondary legislation for protected areas, such as rules on declaring the protected areas; it declares protected areas, changes the protected area status and defines the responsibilities of managing institutions. The CoM approves the key environment documents for the work of the managing structures, such as: a. the National Strategy for the Management of Protected Areas and the National Action Plan for its implementation; b. The Government Program for the enlargement of protected areas, including the establishing of transboundary protected areas; c. The National Monitoring Program for Protected Areas; d. the Financial Support Plan (budget) for investments, detailed for each protected area.

The MoE has a key policy-making and supervisory role related to protected areas in Albania. The main duties of the MoE are as follows:

- Proposes to the CoM the approval of protected areas and their management plans;
- Approves and announces protected areas management plans, protection programs for types of plants and animals particularly at risk, water resources and natural and artificial lakes in these areas;
- Coordinates the work with the respective ministers for PAs protection and prevention of negative impacts of activities in these areas;
- Coordinates the work to establish a system of protected areas and ecological network, approving the network administration plans;
- Approves the directive on the management of Protected Areas Network (PAN) and drafting of PAs management plans;
- Drafts and publishes a plan of the areas to be designated as protected areas, based on the opinion of the local government units;
- Issues public notifications on the approved PAs, natural monuments, types of particularly protected plants and animals, mineral and paleontological findings, detailing their terms of protection;
- Follows up the ongoing monitoring of the management and action plan for habitats and species.

The Department of Biodiversity and Protected Areas (DBPA) composed of the Biodiversity Sector and the Protected Areas Sector, under the structure and organizational chart of the

MoE, is the technical responsible unit for drafting national strategies, policies and programs for the administration and management of biodiversity in protected areas.

The National Agency of Protected Areas (NAPA) was established with DCM no. 102, dated 04/02/2015. NAPA is the central institution, subordinated to the Minister, responsible for managing, controlling, zoning, administering and increasing the surface of PAs all over the territory of the country. NAPA functions, competences, responsibilities, duties and obligations, as a central organ specialized on PAs, are provided by the provisions of the law “On Protected Areas”, as well as the secondary legislation approved by the CoM.

APA concrete duties are established in the “Internal regulation on the organization and functioning of the National Agency of Protected Areas and the Regional Administration of Protected Areas”, approved by the minister responsible for protected areas. According to the legal provisions in force the responsible authority for the management and administration of Shkodra Lake is the Administration of Protected Areas (APA) of Shkodra region, subordinated to NAPA.

State institutions offer their contribution to protect and manage protected areas, implementing their legal obligations on environment issues and protected areas in particular. The line ministries, according to their mission, harmonize the activities of the Ministry links and structures, maintaining a direct relationship between their functions and objectives and the local and national strategies, policies and programs for a better management of the PAs network and a balanced governance of the associated PAs natural resources.

MINISTRY OF URBAN DEVELOPMENT (MUD) is the responsible authority for the modernization and implementation of the legal framework in the field of planning and urban development, housing, legalization and integration of informal buildings.

MINISTRY OF CULTURE (MoC) is responsible for developing national cultural policies, cultural, material and spiritual heritage policies, as well managing the national archaeological parks and museums.

MINISTRY OF AGRICULTURE, RURAL DEVELOPMENT AND WATER ADMINISTRATION (MARDWA) is responsible for the sustainable and effective management of agricultural land, irrigation and drainage systems, and flood protection; it regulates fishing activities in general and its management, provides protection to species and internal waters; drafts and implements rural development strategies, and is responsible for issues related to the quality and safety of food and beverages.

- The Department of Agriculture and Food guarantees the sustainability of agricultural and farming activities, drafting and implementing appropriate projects and activities (such as, protection of the ecological balance and environment related to agriculture, protection and development of pastures, landscape protection, etc.).
- The Water Basin Council (WBC) is the responsible organ for the integrated management of water resources in the respective basin, at local level.
- **Fishing Inspectorate** collects and processes statistical information on fishing, controls and monitors the fishing activity, etc.

MINISTRY OF TRANSPORT AND INFRASTRUCTURE (MTI) is responsible for the implementation of the general transport sector and infrastructure policy; responsible for drafting development policies for the transport sector, infrastructure, water supply and sewerage systems, and urban waste infrastructure; responsible for landfills; road maintenance and new touristic road investments, maritime transport and civil aviation development.

MINISTRY OF ECONOMIC DEVELOPMENT, TOURISM, TRADE AND ENTREPRENEURSHIP (MEDTTE), drafts and implements government policies related to economic, tourism, trade and entrepreneurship sectors, aiming the economic growth; implements integrated economic policies in key sectors of the economy, tourism, and social-economic convergence of regions; improves the service climate for businesses and entrepreneurship; drafts, implements and monitors the National Strategy of Tourism, the general legal framework for tourism development, the respective planning and development process, supports the regional administration and organization of tourism at national, regional and local level.

LOCAL GOVERNMENT UNITS. Play a unique role in safeguarding the protected areas under their territory of activity, implementing the requirements of the Law “On Protected Areas” and their organic laws. In addition, the local government units are entitled to declare and manage regional natural parks (RNP), which according to legal and by-legal acts in force are approved by the Regional Council (RC). The local government units are composed of municipalities and regions. The administrative and territorial divisions of the local government units are established by law, based on common needs, economic interests and historical tradition.

Regions are composed of a number of local government units with traditional, economic and social relations and shared interests. A region is a unit where regional policies are drafted, implemented and harmonized with the state policy. The representative body of the Region is the RC. Mayors are always RC members.

Municipalities are the basic units of local government. They perform self-governance duties, exercised through their local representative organs. The representative organs of the local government units are the Municipal Councils (MCs), which are elected every three years. MCs duties include, among others: a) independent regulation and administration of local issues within their jurisdiction; b) exercise property rights and independently manage the generated income, and entitled to exercise economic activities; c) they are entitled to establish, according to the law, local taxes and their level; d) establish rules on their own organization and functioning, according to the law; e) take initiatives on local issues before specific organs established by law. In addition, the local government units may issue decrees, decisions and orders.

OTHER INSTITUTIONS RELATED TO PAs: a) the National Territory Council (NTC); b) the National Agency of Territorial Planning (NATP); c) the National Water Council (NWC); d) the Technical Secretariat of the National Water Council (TSNWC); dh) the Water Basin Council (WBC); e) the National Environment Agency (NEA); f) the Regional Environment Agency (REA); g) the State Inspectorate of Environment and Forestry (SIEF);

h) the National Inspectorate for Territorial Protection (NITP), i) the National Agency of Natural Resources (NANR), etc.

OTHER STAKEHOLDERS. They play roles and have responsibilities related to the protection, good management and sustainable use of natural resources within the protected areas. The involvement of the stakeholders is a largely known mechanism that effectively assists the protection and management of protected areas. A cooperative relationship between the managing authorities of the area and the local stakeholders may significantly contribute to solve complicated planning and management issues.

A large number of stakeholders are present at the area of Shkodra Lake. They have different levels of competencies, interests and impact on the protection and management of Shkodra Lake. The main issues of interest for the stakeholders concerning the management of Shkodra Lake may be summarized as follows:

- There is an intertwining of competences among key stakeholders at Shkodra Lake. This occurrence weakens the implementation of the law, representing an obstacle for the efficient management of protected area. Cooperation among parties is not at the required level of management.

- There is a lack of consideration of management and sustainable development studies and actions. Therefore, the management and implementation of programs, the use of natural resources and territorial development plans are not based on data monitoring and realistic situation of protected areas, thus affecting, in some cases, the status and objectives of management.

- Great work has been done on several studies and monitoring, saving information and data on biodiversity and water quality in Shkodra Lake, but the respective information, monitoring and database systems are still weak as concerns the management of the environment, which creates serious deficiencies for appropriate decision-taking. A unified methodology is needed for fishing activities and use of natural resources.

- Scientific studies are not continuous, they are minimalist and unsystematic. Old and outdated data are used to draft policies, and development and management plans. In addition, protected areas managers and decision-taking institutions lack studies and monitoring data; they remain generally unpublished.

- Some of the users (local population, fishermen, businesses, self-employed individuals, tourist operators, etc.) have not been involved and appropriately consulted; they are not part of the decision-making process and administration of the ecosystem, although they have an active role, as their work and lives are linked to the use of the natural resources of Shkodra Lake.

- It is often said that coordination among interested parties is key for planning and managing, but the reality speaks differently. There is real cooperation among involved actors during the project implementation phase, but once a project has terminated there is no more continuity. For example, meetings with interested parties have indicated that the Joint Secretariat established for Shkodra Lake has stopped functioning.

EDUCATION, SCIENTIFIC AND MONITORING INSTITUTIONS. Education and



scientific organs involved in Shkodra Lake environment protection and preservation are: Academy of Sciences, University of Shkodra, University of Tirana, Museum of Natural Sciences, Regional Education Department (municipalities of Shkodra and Malësi e Madhe), and the High Forestry School, Shkodra. The National Agency of Environment is the responsible institution authorised by law to monitor, collect and process data.

These institutions play a key role, considering the fact that they implement various research projects, organize scientific meetings and conferences, publish relevant works and promote the values of Shkodra Lake. Thus they improve the general knowledge and increase the capacities of employees and specialists that work in the nature protection system, including MNR Shkodra Lake.

ENVIRONMENTAL ORGANIZATIONS FROM THE CIVIL SOCIETY. They play an active role related to protection, integrated management and promotion of natural and eco-touristic values of Shkodra Lake. They also implement environmental education projects, raise awareness and educate the community and school students on knowing and implementing the best management practices through the sustainable use of natural and traditional resources and ecosystem services, as well as promote cultural and spiritual values. These projects have a positive impact on the comprehensive protection and management of Shkodra Lake.

LOCAL POPULATION AND SMALL BUSINESSES. Are mainly interested in using the natural resources of Shkodra Lake. The major industrial activities in the area of Shkodra Lake are located in Shkodra and Malësi e Madhe municipalities. Some of these activities contribute to the general pollution of the surface and underground waters. Untreated discharges of wastewater and used waters are particularly significant as pollution sources.

The Fisheries Management Organization (FMO) is functional around the lake area. FMO protects the interests of fishermen and promotes the fast development of the sector. From the legal point of view, FMO is a private subject established according to the Civil Code that exercises its activity in the fishing sector. FMO has an independent budget, based on membership fees, contributions from members and non-members, donations and income generated from its own economic activity, as defined by law. FMO manages the fishing ports and harbourages and participates in the joint management of fishing resources.

Other small local activities are those related to agriculture, farming, grazing, agribusiness, individual and sport fishing, collection and cultivation of medicinal and ethereal oil plants, secondary forest products; agroforestry, handicrafts, trade, hotels; recreational and cultural activities, sports services and nature promenades, etc.

Tourist agencies represent small businesses that intensively use the resources of Shkodra Lake, offering excursions at the Lake area, including small boat transportation. Tourist agencies develop and promote local tourism, including protected areas in their touristic tours.

MEDIA. Electronic and written, local and national media always dedicate attention to the protection and management of Shkodra Lake. However, few of them deal with studies and analysis concerning the problems faced by MNR Shkodra Lake and the responsible

institutions at all levels. MNR needs a more active approach from the media for every event, in particular as concerns the fight against corruption, the information of the public in due time and in an accountable manner, as well as an increased contribution to enable a better management and protection of this ecosystem.

7. NATURAL AND BIODIVERSITY VALUES OF SHKODRA LAKE

The natural ecosystem of Shkodra Lake is characterized by land diversity, mild climate with sufficient seasonal rainfalls, available freshwater sources and rich biodiversity. Apart from that, this ecosystem, positioned in the largest valley of the region, which due to the regular tide of the lake water is fertilized regularly, presents a real rareness in the karstic terrains of the Dinaric Mountain Range. A series of the above-mentioned factors lead to favorable conditions for the settlement of people in this region.

The tracks of our predecessors in this region lead to prehistory. So, there is an early tradition of the interaction among man and this ecosystem. The exploitation of the biodiversity and of the ecosystem services were/are crucial for the survival and the prosperity of the local communities and they continue to play the essential role even in the contemporary society around this natural ecosystem. Shkodra Lake has manifold values. Lots of studies have provided among other elements even an approximate evaluation to the economic value of the ecosystem services within the protected areas, including Shkodra Lake.

Shkodra Lake represents a vast, very interesting, unique and complex habitat. In the watershed of the lake several types of habitats have been detected, where several plant associations are found, whose number and dominant species vary prominently. However, the habitat systems of the Lake vary even in time, depending on the development of the biotic or abiotic components, due to the seasonal changes. Even the capacity and the high productivity of the fish and birds of the lake, addressed in this book, relate to these facts. The lake is a significant component, with an obvious role in the biogeographical consortiums.

The ornitologic potential of a continental importance has a generating role not only for the fact that it collects and spreads birds in long distances, not only because it shelters and preserves a certain capacity of birds but even because it enriches this capacity through the nesting and colonization in this lake.

The biodiversity, the capacity and the high productivity are related to a much wider variety of ecological niches: habitat niches, trophic niches and reproductive niches.

The flora of Shkodra Lake is composed of 236 species. Among them, 10 are Charophyta, 1 Bryofit, 8 Pteridofits (5 from the Equisetum variety) 3 Nymphaeaceae, 103 Mesangiospermae (the most widely-spread families Apiaceae, Asteraceae, Brassicaceae, Polygonaceae, Lamiaceae, Plantaginaceae, Salicaceae, Lythraceae and Ranunculaceae), and 111 Monocotyledoneae (with the most widely-spread families Potamogetonaceae (14),

Cyperaceous (36), Juncaceous (10), Phocaea (21). Out of the total species, 60 are aquatic species out of which 16 are hydrophytes with the roots stabilized at the bottom or floating and the rest are under the water. The rest are species live in alternated water conditions.

The associations of the plants of Shkodra Lake are divided in three groups: underwater (Potamion), floating (Nympheion) and emergent (Phragmitetalia). As Shkodra Lake has littoral characteristics, the emergent and underwater macrophytes prevail. The biomass and productivity are higher for the emergent community. The macrophytes submerged under water play an important role in the cycling of the lake nutritional materials, in the sheltering of the small fish, macro-zooplanktons and bentic intervertebrals, carnivore fish and as substratum for the micro-flora and micro-fauna.

Microphytes are grown from the seaside to deep waters starting with the emergent associations dominated by *Phragmites australis* and *Schoenoplectus lacustris*, continuing with the floating associations, which grow in muddy waters dominated by *Nuphar luteum*, *Nymphaea alba* and *Trapa natans*. If we go deeper, there are the associations submerged under water which are represented by *Myriophyllum spicatum*, *Ceratophyllum demersum*, *Potamogeton lucens*, *Potamogeton perfoliatus*, *Potamogeton crispus* and *Ranunculus aquatilis*. The last associations are the ones of *Vallisneria spiralis*, *Najas marina* and *Charophyta*. Sometimes, an intervention of the high biomass *Myriophyllum* in the last association prevents the growth of *Vallisneria*.

The area Makie-Shbljak is located 400-500 metres above the sea level. The most spread woods and shrubs in this area are: *Pistacia terebinthus*, *Punica granatum*, *Carpinus orientalis*, *Crataegus monogyna*, *Rubus ulmifolius*, *Periploca graeca*, *Cotinus coggygia*, *Paliurus spina-cristi*, *Quercus robur*, *Acer campestre*, *Cornus sanguinea*, *Celtis australis*, *Ulmus laevis*, *Ulmus minor*, *Amorpha fruticosa*, *Genista hassertiana*, *Fraxinus angustifolius*, *Fraxinus ornus*, *Populus alba*, *Populus nigra*, *Salix alba*, *Salix elaeagnos*, *Salix purpurea*, *Alnus glutinosa*, *Ficus carica* etc.

63 species of molluscs are found in Shkodra Lake. 51 of them are Gastropoda and 12 are Bivalvia. 20 species are Pulmonata and 31 are Prosobranchia, 14 of which (mainly endemics) belong to the Hydrobidae family, which is mostly found in the springs of Montenegro. Only *Anagastina scutarica* and *Orientalina lacustris* live in the lake. Unionidae in the lake are represented by 8 species of major interest, particularly the four species of *Unio* Genus.

10 species Anelides are foundfound in Shkodra Lake, out of which 6 species of Hirudinea and 4 species of Oligochaeta.

101 species of crabs are foundfound, out of which 25 are Malacostraca. Among Malacostraca 18 species are Amphypodes, 13 out of which are found in underground waters of the watershed. 9 other species, 7 out of which belong to the category Niophargus, are endemic. The decapods are represented by 5 species: *Astacus astacus*, *Austropotamobius torrentium*, *Atyaephyra desmaresti*, *Palaemonetes antennarius*, *Potamon fluviatile*. Branciopods are the richest group with about 36 species, 22 of which are from Eurycercidae family, 22 species of Ostracoda are also recognized, 11 of which are Candonidae.

Insects make up a very important group of Shkodra Lake. The major part is represented by species which are in the bentic or water larvae phase. Chironomidae (Diptera) with 17 species is the group with the highest number of larvae in the Lake. Other species are from Odonata (45 species, Hemiptera (5 species) and Coleoptera (8 species) which live in an image-like form. No full study has been carried out so far regarding the insects of the watershed of Shkodra Lake.

Shkodra Lake has got 56 species of fish out of which 3 belong to the Agnatha family, 25 (45%) to the Cyprinidae family and 8 species (14%) to the Salmonidae family. Based on these values, Shkodra Lake is characterized as a cyprinid lake. Out of the total number of the species, 17 (30%) are native. Among the 17 species, 9 are alien species, which were introduced in the lake by man during the last 4 decades through the reproduction of different kinds. 10 of these species are migratory, including sturgeon (*Acipenser*), which have are almost extinct in the Lake (*Alosa agone*), sea bass (*Dicentrarchus labrax*), eels (*Anguilla anguilla*), mullet (*Mugil, Liza*) and flatfish (*Platichthys flesus*).

10 species of amphibians are found in Shkodra Lake and in its surroundings. 41 of these species belong to the Raniodae family (*Pelophylax kurtmuelleri*, *P. ridibunda*, *P. shqiperic* and *Rana dalmatina*), 2 species from the Bufo family (*B. bufo* and *B. viridis*), *Bombina variegata*, *Hyla arborea* and 2 amphibious have a tail (*Lissotriton vulgaris* and *Salamandra salamandra*). In the watershed of the Lake, there are 4 other species: 2 Rana (*R. temporaria* and *R. graeca*) and 2 amphibious with a tail (*Triturus karelini* and *Mesotriton alpestris*).

28 species of reptiles are found in Shkodra Lake and in the watershed, 3 out of which belong to Chelonia, 2 species are in the lake (*Emys orbicularis* and *Mauremys rivulata*). 13 other species are Ophidia where 2 of which belong to the Vipera category, 1 species to the Typhlops category and 9 species to the Colubridae family. 2 species of this family live in the Lake (*Natrix natrix* and *Natrix tessellata*).

Shkodra Lake houses 282 species of birds which make up about 55% of the general number of the birds in Europe. Among them, 112 are aquatic species. The orders with the highest number of the species are Passeriforme (107) especially with the families of Sylviidae (20), Turdidae (15), Fringillidae (10) dhe Motacillidae (9); Charadriiforme (46) (19); Anseriforme (29), Accipitriforme (21), Ciconiiforme (14), Gruiforme (10) etc. 178 (63 %) are winter species, where 68 are water birds (24,1 % of the general number of the species). Almost all the species migrate in the spring and autumn (including the usual, unusual and rare migration).

Migration is clearly expressed at the aquatic species, especially among ciconiiformes and anseriformes 189 (67%) are breeding species (including the usual, unusual and rare breeding). 46 of the breeding species are aquatic species (16,3% of the total number of the species). the breeding species endangered at world level *Pelecanus crispus* is also found at Shkodra Lake (only at the Montenegrin part).

57 species of mammals are found at Shkodra Lake and its watershed. The Chiropteran order is famous for the high number of the species (20), 12 species are Rodentia (rodents) and 11

species are Carnivore. Only three of them are aquatic species among which *Lutra lutra* is the most important species which is found at the Albanian part of the Lake.

According to the most recent information, the different types of biodiversity display the following characteristics:

High number of species (main groups):

Main groups	Number of species
Algae	about 1100 in all the lake
Higher plants	726 types – for all the region of Shkodra Lake 1,900 types in all the region of the watershed
Aquatic microphytes	164 types – for all the area of Shkodra Lake
Intervertebral	257 species, among which:
Mollusc	54 species (Lake waters and its depression)
Copepoda	18 species
Fish	57 (in the entire area of the watershed)
Amphibious	15 (in the entire area of the watershed)
Reptiles	30 (in the entire area of the watershed)
Birds	271 (in the entire area of the watershed)
Mammals	7 (in the entire area of the watershed)
<i>Source: Kashta L., Dhora Dh. & Sokoli F</i>	

Endemic species

Main groups	Number of species
Microalgae	2(<i>Cyclotella scadariensis</i> , <i>Cymbella scutariana</i>)
Oligochaeta	1 (<i>Peloscolex scodranensis</i>)
Molluscs	9 (2 in the lake)
Aquatic plants	1 (<i>Trapa longicarpa</i> subsp. <i>scutariensis</i>)
Fish	2 (<i>Pachychilon pictum</i> , <i>Salmothymus obtusirostris zetensis</i>)
Amphibian	1 (<i>Rana shqiperica</i>)
Land plants	Most of them are local and Balkan endemic types

Shkodra Lake is popular for the variety of the habitats with a lot of plant associations. As the habitat system varies in space and time, depending on the biotic and abiotic factors and seasons, the real number of the habitats of Shkodra Lake is higher. Shkodra Lake and its watershed represent habitats complexity with high diversity of the living organisms. These characteristics are related to the water regime which changes with the seasons and with the volume fluctuation. These plants associations are included in the Red List of Albania:

Trapetum natantis, Nymphoidetum peltatae, Leucojo-Fraxinetum angustifoliae, Potamo-Vallisnerietum, Potameto-Najdetum and Myriophyllo-Nupharetum.

The following habitats are of a special importance due to their ecological sensitivity, the presence of the rare and endangered plant and animal species as well as of the human influence:

Microphytes floating area in Gashaj is the most important area of the floating microphytes in the Albanian side threatened by the sailing in the lake. This area is a nesting habitat for *Chlidonias hybridus*, which is included in Ramsar as well as for *Ardeola raloides* and *Aythya ferina*.

- 18 springs or “eyes” and the artesian waters along the eastern shore of the lake. They are potentially threatened by the pollution in the watershed of the lake with a direct impact on the lake as they communicate through underground ways with it.
- The reeds, forests and marshes in the region Shkodra-Gril.
- Lakeshore area in Flaka (Water shore), particularly important for the forest and aquatic plants and for the birds.
- The forest area at Taraboshi Mountain is interesting from the floristic prospective.
- The forest area of Zogaj-Tarabosh, very interesting from the floristic prospective.
- The western shore of the lake where the alborella (*Alburnus scoranza*) is reproduced in spring.
- Lakeshore waters with gravel bed along the segment Shiroka-Zogaj, as reproduction habitats for *Chondrostoma nasus*.
- Shiroka shore, an important habitat for the sheltering of alborella *Alburnus scoranza* during winter.
- The shallow waters along almost the entire eastern shore, with strong beds, where some species are bred during the spring, such as the crap *Cyprinus carpio* and *Carassius gibelio*.
- The waters at the streams gorge at the eastern shore, where *Chondrostoma nasus* breeds.
- The flooded areas of the lake, along with the final parts of the drainage collectors which discharge the waters to the lake;
- The downstream and the delta of Perroi i Thate (Dry Stream).
- Steppe area in Postopoja, with very interesting plants, also important for the medicinal plants.

8. REGIONAL SOCIO-ECONOMIC SITUATION OF THE NATURE COMPLEX OF SHKODRA LAKE

AGRICULTURE AND LIVESTOCK BREEDING: 51,000 hectares of agricultural land cover the lowland of the Shkodra Lake Watershed. The highest percentage of the lands is meadowbrownsoil, but there are also mix of brown meadowsoil and marsh meadowland. The arable land, almost in all the villages, is in the form of small patches of land, mainly due to the topography, the characteristics of individual property and their spread along the lakeshore. Generally, these lands are exploited for grain, corn, vineyards, tobacco, vegetables,

foragers and medicinal and aromatic plants. Taking into consideration the settlements located inside the borders of the MNR, it is noticed that there is not intensive agricultural production, but there is production mainly for family demands. At the moment, most of the productivity comes from the small plots of land, where vegetables are planted for personal use or salesale in the local markets (Shkodra, Malesia e Madhe, in restaurants or in other tourist areas).

The vineyards grow in lots of places especially in the areas in Shkodra and Koplík District. Many families produce local wine and raki for personal consumption and sale. In some villages, some small canteens have been built for wine and raki production by the locals. Olives have been planted in some areas. They are convenient production for the inhabitants and the farmers.

Even the development of agriculture is present. The local population still keeps cows, sheep, goats, horses, bees, poultry, pigs, etc. This kind of agriculture is considered necessary for their living. In this region there are even complexes for the growth of birds and reservoirs for the cultivation of fish.

The territory of Shkodra Lake has the acceptable conditions even for the cultivation of beekeeping and honey production. There are some workshops for the processing of the agricultural products (dairy) and medicinal plants.

The traditional cuisine consists of several dishes with meat and baked fish, fresh cream and vegetables matched with raki and home-made wine.

The perspective of the economic development of this region is related to the sustainable use of the nature resources and the organic agricultural production.

The natural basic potential of the territory of the Lake are the lands, water, gravels and sandstones, clays, silt and peats. With their exploitation, the basis for the development of this territory might open, without damaging the living environment and the other values of the territory. Therefore, for any case, it is required the drafting of some technologies which ensure rational uses free of environmental distress.

The traditional production might be a potential factor of the economic development in general. In this region, the following productions are popular: the production of silk, leathers and leather items, carpets and different wool items, mats and objects made of birch and bulrush, food production such as fruits of the native varieties, drinks, cheeses and dried meats, of a traditional very original and qualitative technology.

The Watershed of Shkodra Lake is the real garner of the agricultural productions. It is suitable for the agricultural-organic production, vineyards, corn, tobacco, productions in greenhouses, agricultural complexes, etc.

Fishing: It has an important place in the economy of the population around the Lake. Shkodra Lake is suitable for the development of the fish community with regard to the variety of the species and with regard to the productivity. It has relatively significant measures of the watershed and of the water body. The primary trading fish species are the carp and scald and secondary are, twaite shad (Kubla), eel and gudgeon. The productivity of the fish of Shkodra

Lake accounts for 18.500 quintals/year. This production annual capacity is the renewable resource, which might be fished in proportion to the condition of the population of the most important species that are fished.

The number of professional fishermen in this region is about 300, with about 120 boats that carry out the activity in Shkodra Lake. However, there are even fishermen who do not have a fishing license. About 80% of fishing (particularly of carp) is sold in the local or informal markets. Nonetheless, the local as well as the international status for the protection of the Lake (Ramsar site) requires the strict control of fishing including the coordination between both countries.

There are no data about the incomes from illegal fishing, but the nonofficial information indicates that they might be significant, even some times higher than the incomes from regular fishing, through the FMO. Most of the illegal fishermen live around the protected area and fishing is the main source of their incomes.

Tourism: Is one of the most important perspectives of the region development. The nature and cultural values are the special motives of the development of ecotourism.

The high mountainous range next to the lake lies on the slope of the Tarabosh Mountain. The amazing views, with wide horizons might be seen from the Crest of Tarabosh. Lots of the shores of the lakes are suitable for beaches. Shkodra, Kolik and some beautiful and attracting villages or neighbourhoods lie close to and around the Lake; among them we may mention Shiroka, Zogaj, Fllakaj, etc.

The heritage of the natural and cultural values, the geographical position and the mild climate provide very convenient conditions for the development of tourism in Shkodra Lake. The lake has all the preconditions for the organisation of the activities and the excursions by the touristic centres at the beach and mountainous areas. The touristic offers in the Lake area consist of various sports such as sailing with small boats, walking, riding bicycles, kayaking, bird watching, visiting restaurants which offer the local cuisine etc.

The history and the culture of the region are potential factors of tourism. The town and the castle of Shkodra are located at the furthest south end of the shore of the Lake, precisely where the Buna River springs.

The town of Shkodra was established in the 4th century B.C. on the hills around the castle, it was the centre of the clan of Labeats and during the reign of Gent, it became the centre of the Illyrian state. In the 17th century and later on it became an important centre of the entire region with the development of trade, craftsmanship, etc.

Shkodra has got streets, houses and objects of historical and cultural importance. It has a university, lots of schools of different categories, hospitals, theatres, museums and nice restaurants. The castle of Shkodra is magnificent in the entire European continent; it dates back to the 4th century B.C and it is known as the safest fortress of the clan of Lebeats. The castle got its fundamental form in the second half of the 14th century, when the Balshaj were reigning, it got its full long form during the Venetian invasion, in the first half of the

15th century and it was completed later during the Ottoman invasion. The castle of Shkodra has three courts, with a general surface area of 4 hectares. In the castle, fragments of the Illyrian walls as well as of a later period are found; there is the St. Stefan's church constructed by the end of the 13th century, water tanks, the warehouse, the prison, the commander's post, the watch tower, the system of underground passages, etc.

Despite this, with regard to the aspect of sustainability and the control of the quality of these activities, some problems still exist. Among them it is the lack of the trained guides and interpreters, the supporting services and the culture in hospitality, the marketing and the promotion, the insufficient respect towards nature, the low awareness and knowledge about the natural resources and the ecology of the lake, etc.

Public Sector: The economic activities with an influence on the environment consist of the trading, hospitality services, construction, tourism, the production lines in light industry and agriprocessing.

The transport is well developed. It comprises the Shkodra-Hani i Hotit and Shkodra-Lezha-Tirana railway; the primary lines and the secondary lines of the motorway transport such as Shkodra-Lezha-Tirana and Shkodra-Kolik-Podgorica. In addition, almost all the inhabited centres and villages within and around the ecosystem are connected with secondary communication routes. The communication infrastructure and of the mobile telephony is good.

A good opportunity and assistance will be provided by the development of water transport, which we think will be one of the perspectives of the Lake. Its development will shorten the communication distances, will increase the people's mobility and will be a factor for the increase of tourism. The improvement of railway transport will also increase the people's mobility within and outside this region.

The urban development of the towns and villages around the lake with the consequences of the construction, the movement and the waste have a considerable impact in the area of the lake. The developments in the future, the increasing constructions, the movement and the presence of tourism in the protected area are sensitive issues which must be carefully addressed.

The constructions by the lakeshore and the by-pass of Shkodra are still a problem. The implementation of the above-mentioned study as the basis for the development and preparation of the planning instruments aligned with the law on territory planning is a priority that must be carefully addressed in the development of the general territory plan for both municipalities: Shkodra and Malesia e Madhe.

The infrastructure of the waste water systems supported completely by donors' projects will help in eliminating the influence of polluted waters in the environment for Shkodra and the region of Shiroka-Zogaj, but the waste is a persistent problem in other areas, too.

Waste treatment and collection of waste from the waste containers is carried out regularly by the municipality but the situation along the shore still remains a problem.

WATER USE: is the abiotic component of the ecosystem of Shkodra Lake. It keeps alive the entire community of organisms. The lake has a crucial role in the hydrology, water quality and biota of the Buna River and the Adriatic Sea. The Lake comprises a vast water reserve that can be better exploited for baths and water sports, for utility needs, for agriculture, transport etc. The exploitation of this water richness comprises a development prospective in the region and at large. The waters might be used as drinking water once chlorinated. Shkodra is supplied from the underground waters of Dobrac, with about 1100 litre/sec, meanwhile Malesia e Madhe is supplied from the other sources of Mbishkodra of over 100 litre/sec.

ECOSYSTEM SERVICES: The presence of certain ecosystems provides some services which the people use directly or indirectly, but which affect their wellbeing and security. The volume and the value of these services has recently attracted the attention at the global level, meanwhile in Albania there is a lack of the studies on how these services might contribute on the wellbeing at national and local level.

The use of fertilizers, chemicals and pesticides has increased. They unavoidably penetrate to the depth of the land and in the underground waters. The vegetation of the remote areas presents a natural filter for pollutions, because the plants absorb the nutrients and preserve them in their tissues, therefore eliminating them from the water. The northern parts of the Lakeshore are the agricultural lands which are worked intensively by the residents and the farmers. Of course, the marshes of the Lake serve as filters for these substances and they help to prevent the eutrophication of the Lake waters.

Some elements of the biodiversity and nature are exploited directly and provide economic profits for the population. The main socio-economic activity in the region of Shkodra Lake is fishing. Out of 50 species of fish living in the lake, most are fished such as the carp, eel, twaite shad (Kubla) and scald fish with a significant economic importance. The local population mainly deals with fishing for family consumption and salesale.

Other species from the nature ecosystem of the lake which are exploited by the local population directly from the nature, for consumption or sale, are the medicinal or aromatic plants, forest fruits and mushrooms; the wild animals and birds (mainly the water one, the hare, mountain partridge, frogs), etc. The forests around the lake, which are mostly comprised of oak, alder, willows, etc. are exploited by the local population for heating, timber, for fences, for basket weaving, for sculpting, for the construction of the water exvhnage canals between the lagoons and the sear for traditional fishing, etc.

The local population has always exploited the reed for the coverage of house ceilings, for handicrafts and other family needs. Areas/meadows for livestock herding and grass mowing have also been exploited.

There are no data regarding all the cases of the use of the biodiversity elements by the local population or small businesses, despite the quantity and quality, there are no data on the economic profits by their exploitation.

Due to the size and the hydrological characteristics, the Lake and its richness represent important sources of freshwater for the local population (who generally drill wells for the extraction of water) and not only. The regional water supply was constructed to extract freshwater from the springs of the Lake and to supply the population of the towns, villages and to meet the needs of business operators and industry.

The landscape of the Lake is composed of three very different elements: marsh lowlands of the northern shores with rich water vegetation, with a rich diversity of animals including many water birds species and of natural and cultural landscape, thus, it has high recreational, esthetic and historic-spiritual values.

Besides these, there are threatened types of habitats and species with values for the European community and researches, and part of the natural heritage, such as: pelicans or other species from the Red List, including migratory species which are a part of the global ecosystems.

The diversity of the landscape provides a unique esthetic experience which characterizes all the ecosystem of the Lake, which can be exploited through ecotourism. The visits by boats or by sailboats of low capacity, kayaks may be of common use by national and foreign visitors. In addition to these activities, the watershed of the Lake is suitable in some areas for hiking, cycling, sportive fishing, bird watching as a special kind of ecotourism related directly to the esthetic and recreational values of the biodiversity.

The area of the lake with its own resources of the landscape provides the conditions for cultural tourism, too. The history is strongly linked with this ecosystem. Thus, cultural heritage is very present ensuring even the indirect value. However, the hospitality, information and supporting services infrastructure have to be established.

9. CONSIDERATION AND ASSESSMENT OF CONCERNS

While reviewing the documentation, projects and social, economic, construction, infrastructure and touristic developments occurred in the ecosystems of Shkodra Lake, consideration of some of anthropogenic effects proves to be crucial. These effects include various forms of pollution, destruction of habitats, abandonment of the traditional method of land use, deforestation, fires, changes in the irrigation and drainage system, infrastructure or uncontrolled introduction of new species and other ecological concerns.

Water pollution is considered as one of the main ecological concerns of the Lake. It includes pollution deriving from organic sources, such as untreated waste water discharged in the non-inhabited territory or lake and inorganic waters from industrial facilities or farming establishments of any type and size.

Urban and non-urban waste presents a very serious concern in the ecosystem of Shkodra Lake. The size of illegal waste dumping, especially along the streams and lake shore and near villages and localities, bring considerable amount of solid waste (mainly of plastic) or gravels from streams into the Lake. Studies on their impact on human health, flora, fauna and habitats are not comprehensive, however esthetic pollution is caused, of which the visitors complain and it may have a negative impact on ecotourism development.

During last decades in the surroundings of Shkodra Lake the abandonment of traditional methods of land cultivation and use (such as small-scale agricultural production, farming, viticulture etc) was noticed. There are cases where the main destination of agricultural land and natural habitats has changed, turning them into construction land for touristic facilities, construction of settlements and cafes, sports tracks or infrastructure facilities. This practice has resulted in the loss of natural habitats, biodiversity, environmental pollution and distorted esthetic values.

Forest tree cutting along the lake shore and in areas with forest vegetation and shrubs is not of high concern and is mainly related to the provision of firewood, fencing, barn building, and pickets for gardens and vineyards in small quantities; residents are engaged in the uncontrolled collection of some secondary forest products, medicinal plants and cattle grazing. However, it is noticed that some of the forests situated near villages are generally degraded and fragmented, thus causing the direct loss of biodiversity and habitat fragmentation.

Rich vegetation grows at the lake and especially along its shores in the hot season. Submerged macrophytes play a key role in the lake chemistry. They are the main lake producers and the main food basis of herbivorous fish. A very rich micro-flora and micro-fauna is developed on and between these plants. The shoreline vegetation is essential because it is a vital environment for the reproduction of a number of important fish species. As noted, the damage of this vegetation brings major negative consequences on plant species and plant associations, and on the whole living organisms of the Lake, which we better understand when we refer to fishes. The biomass of many species will be even more threatened with the development of water transport, recreation, fishing etc, however, flowerless plants (*Chara*) and those with subaqueous pollination (*Ceratophyllum*) will be less threatened.

The damage of vegetation such as cutting of reeds, “zhavar”, “frysës”, and trees in the forests of the Lake shore, destroys the habitats of many species that live and reproduce there, which we can more clearly understand in terms of water birds.

It is well known that hunting has influenced, more than anything else, the poor situation of bird populations, although considering the MNR status Shkodra Lake is designated to, hunting of animals and wild birds is prohibited. Illegal hunting takes place along the Lake shores and in many cases it is not authorized by permits. The decreased number of birds is a serious, completely devastating consequence of this hunting. This is proven by the fact that migratory birds sought by hunters, such as ducks, are in minimum numbers. On the other hand, non-migratory species of low values for hunting such as pygmy cormorant (*Phalacrocorax pygmaeus*) etc, have maintained the previous high figures. The area of Shkodra Lake is not adequately assessed regarding the control of hunting, impact on endangered species, trend analysis, hunting in prohibited areas, hunting at the time of reproduction, monitoring of hunting birds, number of birds allowed for hunting etc.

The legal prohibition of hunting through the implementation of moratorium on prohibition of hunting within the territory of the Republic of Albania and measures taken for the overall management, strengthening of control by the protected area administration is likely to

contribute in improving the situation. Yet, some cases of illegal hunting show that the issue is rather complex because it is linked with the change of mentality, economic-social developments, especially rural ones and strengthening of the management and law-enforcement institution.

Fishing is a main economic activity in the Lake ecosystem. Accordingly, the exploitation of different kinds of fishes concurrently represents another main ecological concern. One of the most sensitive problems regarding fishing is the uncontrolled blocking of migratory routes, especially for eel, sturgeon, shad and many other species, between the lake and rivers Drin, Kir, Buna and the Adriatic Sea. This trend influences the direct separation of individuals from the groups of fishes and causes disturbances for the groups of fishes and wildlife, especially in winter when the large flocks of migratory birds exploit the Lake surfaces for rest and food. Although the cases of alien species introduced to the ecosystem of Shkodra Lake are well known, both for the types of fish or plants and other animals, the ecological consequences of the introduction of these alien species to the population of local species or for the ecosystem in general have not been examined yet.

The demands for fishing in Shkodra Lake are constantly increased upon the increase of population, economic level, infrastructure, transport etc. Fishing has often faced such pressure and the relevant criteria were not respected. Fish was once caught by trolling techniques. Both parties, Albanian and Montenegrin ones, did not have any agreements on fishing. During the two-three last decades, fishing in the Lake has been out of control. From time to time fishermen applied exterminating tools, without any licenses or criteria. Often and for a long time, fish was caught without considering future years, not to mention the fate of the Lake as a natural asset.

Fishing at the time of reproduction, catching of small fish, and damaging the shores are the main factor with negative impact on the development of the fish community. The main task for the management of sustainable fishing should be the identification of quantities to be caught per each species based on the Lake producing capacity. With a view of renewal of fishing resources, the criteria of fish size and catching time, should be applied in fishing.

The long failure to apply these criteria has unbalanced energy transfers, structures of food chains and fish populations and led to the distortion of the structure of fish resources in favor of non-qualitative fish and decrease of production in general.

After the construction of hydropower plants in the region bordering the ecosystem of Shkodra Lake, its water regime was distorted, namely the average and maximum level of the lake descended. The significant and frequent oscillations cause difficulties in the life of shoreline population, render many qualitative lands unproductive, bring instability and frequent interchange of habitats, especially cyclical environmental developments with large dry surfaces.

The issue to be addressed is that the lake should not have so many oscillations. For this purpose some researchers believe that the maximum level should be reduced to some degree and be approximated to the minimum level, which probably has to remain more or less

constant. It would be appropriate the Lake level be merely influenced by flows and that the amount of water flowing into the Lake be acceptably proportionate with the amount discharged through via the Buna River. Given that water regime is the main factor of this ecosystem, the decisions for resolving concerns should be taken on the basis of complex, ecologist-centered studies by groups of experts

Shore waters have an increased level of trophy. Human activity has increased and continues to increase the transfer of nitrogen from the earth and atmosphere into the water. A significant increase of nitrate in the earth is reported even in its deep layers, thus endangering their passage across water bearing layers.

There is no full knowledge if the chains of fish food network and market fish flesh have contents of pesticides, heavy metals or other toxic substances, except for some periodic data not strongly scientifically confirming their content in carp and eel.

There are still no accurate data to estimate the lindane and DDT wastes (widely and long used in agriculture) in the lands around the Lake, water and Lake fish. The substances identified are believed to enter the waters of Shkodra Lake via incompletely treated waste water from Shkodra, Koplík, Shiroka, and other inhabited centers around the Lake both in Albania and Montenegro in which there is a high content of detergents and probably other toxic substances.

Prevention of pollution is a concern for the whole Lake Watershed. In particular, we stress the major importance of the prevention of pollution of watershed surfaces because its karstic formation allows the pollution of karstic sources of drinking waters that supply the whole population of the region.

In the region of Shkodra Lake, especially in the Albanian part, in particular during the recent years and decades, an intensive, plain-focused, Lake shore and urban center-oriented demographic movement developed. Around 30 % of the population of Shkodra town moved after 1990.

Urban planning, which mainly presumes demographic movements to urban areas, in the context Albania and many other surrounding areas, is a positive trend. Nevertheless, based on the conditions of Lake area, this trend has its own specificities. In the perspective of the socio-economic conditions of urban areas, there is a need for focused approach to this trend because it gives rise to urban planning related concerns, implying problems in the framework of urban eco-systems.

Local population was to some degree discouraged to work in the field of agriculture. Rural poverty and unemployment were the main causes of spatial movement of the population in the form of internal migration, but also poverty in general and eagerness for rapid development, led to an overuse and destruction of natural resources of the Lake and its watershed in general.

During this period fishing in the Lake, forest management, construction in general and around the lake in particular, infrastructure and transport in general and other related

components were intensified and uncontrolled. All these direct and indirect factors led to the distortion of water quality, damage or loss of forests, destruction of fish populations, change of the structure of populations of species demanded in the market, and decreased number of birds etc. All these developments show that during transition the environmental, demographic and rural policies were not paid due attention within the regional development policies .

In the framework of future developments, we notice that the Lake will have problems due to the increased population, unstudied urban sprawl, tourism and trade, communication, agriculture and economic growth in general.

10. CROSS-BORDER COOPERATION

The cross-border cooperation between Montenegro and Albania was first formalized with a Memorandum of Understanding, which was signed in 2003 by both respective ministries, in terms of environmental protection and implementation of sustainable development principles. Both countries are committed to conserving the natural resources of the Lake in a coordinated and integrated manner in order to improve national regulatory and institutional capacities.

In addition, the Memorandum of Understanding has shown an expression of the will of both governments to cooperate in the improvement and management of the Lake and its resources. This created a political framework for bilateral cooperation between Montenegro and Albania, in terms of common natural resources, and paved the way for the establishment of a platform for the advancement of Shkodra Lake management, giving powers to other institutions of both countries to work jointly in conserving and promoting bilateral values of Shkodra Lake.

Taking advantage of this opportunity, the Cross-Border Forum for Shkodra Lake was also established, which brought together representatives of various relevant institutions from both countries for the management and protection of Shkodra Lake (Ministries, administrations of protected areas, local authorities, NGOs, nature conservation agencies, educational institutions, etc.). In addition, through several projects and activities conducted various in this area, many other forms of cooperation between the various stakeholders have been established.

Cooperation between both countries continued with activities on the project “Integrated Ecosystem Management of Shkodra Lake (LSIEMP)”. Pursuant to the project and according to the agreement signed between both relevant ministries, the Shkodra Lake Joint Commission was established.

The Commission meets twice a year in order to discuss all major issues related to the management and protection of Shkodra Lake. The Commission has also formed four technical bilateral working groups on specific issues such as: water management, monitoring, research, communication and promotion of tourism and legal harmonization.

However, it is regrettably observed that the continuation of these cooperations and the implementation of recommendations concluded from the projects developed or the operation of the Shkodra Lake Joint Secretariat is improper, not to say that this cooperation has

discontinued.

11. MANAGEMENT OF THE PROTECTED AREA

11.1 Management Strategy

The Montenegrin part of the Lake, along with about 12,500 hectares of land from the Watershed of the Lake was designated National Park in 1983. In 1995 this part adhered to the Ramsar Convention as a wetland of international importance.

In the Albanian part of the Lake, the current protection status is “Managed Nature Reserve” (IUCN- Category IV), according to the Decision no. 684, dated 02.11.2005, of the Albanian government. In addition, it was designated as a Ramsar site together with the Buna river and surrounding wetland territories (Ramsar Convention, On wetlands of international importance, especially as waterfowl habitats), with the Decision no. 683, dated 02.11.2005.

Current results of studies, experience and problems have opened many windows to see the future clearly. In this regard, the most skilled specialists formulated the vision of its future: Shkodra Lake and its watershed is a well-maintained and well-managed ecological unit a cross-border ecosystem.

The Lake provides the international standards of the environmental situation in general, water quality and biodiversity. The Lake is used by ensuring the harmonization of the different interests of the local community and conserving the naturalness, offering the possibility of sustainable development of agriculture, livestock breeding, tourism, fishing, food safety, medicinal plants, clean water utilization, etc. At the same time, the Lake is managed through cross-border cooperation, where development policies and decision making are scientifically based with the large participation of stakeholders.

In today's environmental and economic situation, we should choose an option that allows for the integration of protected areas into wider landscapes, conducting research, monitoring and education, which promotes sustainable development in the area. In this regard, we can decide on two options: The designation of Shkodra Lake by both governments as a Cross-Border Biosphere Reserve (RBN), which fully meets the above criteria.

The Biosphere reserve fulfills 3 basic functions: (i) conservation function – to contribute for the conservation of landscapes, ecosystems, species and genetic diversity; (ii) development function – to promote economic and social development, so as to be stable from the socio-cultural and ecological aspects; (iii) logistic function - to provide support for research, monitoring, education and exchange of information related to local, national and global issues for conservation and development.

Biosphere reserves are organized in 3 subzones: a) the core area that requires legal protection, which can correspond to an existing protected area, such as nature reserve or national park; b) buffer zone, where activities that do not hinder the conservation objectives are carried out; and c) the transition area, where the practices of sustainable resource management are promoted and developed through cooperation programs, involving the local community and other stakeholders. In some cases, it includes farm or urban developments.

Zoning is a standard procedure for each protected area and part of the management plan. Zoning is realized in present day's conditions, too. Zoning is applied in different ways, in accordance with geographical, socio-cultural conditions, legal protection measures, etc. This flexibility is realized independently and it is one of the strengths in the Biosphere Reserve concept.

At present, despite the efforts, the Biosphere Reserve concept has not yet been accepted by the Montenegrin party. However, the Albanian party has not taken any specific action yet, regardless the positivity displayed. Both sides should cooperate more organically, with the concept of ecosystem's protection as a whole.

Shkodra Lake will have the National Park status and similarly to the global level, where lakes are national parks, they are used for fishing, too. Shkodra Lake will be the largest and the most important park in the entire Western Balkans, with an area of more than 70,000 ha, in addition to another very important protected area, called Buna, almost 50,000 ha.

The opinion of some specialists, as revealed occasionally, regarding the status of the Albanian part of Shkodra Lake as a National Park, has encountered many objections due to the fact that between both parts, no parallelism should be made, as the conditions of environment, biodiversity, use of natural resources, social, economic and tourist developments, infrastructure and coefficient of the territory utilization, through urbanization and proximity to major cities near the shores of the Lake are utterly different.

The Albanian part is the most affected one, with more problems and it does not meet the IUCN criteria for the designation of National Parks. These were also discussed along the drafting of the management plan, which includes a myriad of concepts related to the Biosphere Reserve, with the intention of establishing a National Park and the current situation of the "Managed Nature Reserve" status.

11.2 Analysis of the types of habitats and species for MNR Shkodra Lake

This analysis was based on the study carried out by Prof. Dr. Dhimitër Dhora (Characteristics of lake, habitats, fishes and other animals), Prof. ass. Dr. Marash Rakaj (Habitats, species and associations of rooted macrophytes) dhe Prof. ass. Dr. Rrok Smajlaj (Habitats, birds), and annex attached.

11.3 Analysis of the current zoning of MNR Shkodra Lake management plan

The Albanian territory of Shkodra Lake, with a total surface area of 26,535 hectares, pursuant to the Decision of Council of Ministers no. 684, dated 02.11.2002 was designated "Managed Nature Reserve", pursuant to article 100 of the Constitution and articles 4, letter", 13, paragraph 1 and 23 of the law no. 8906, dated 06.06.2002 "On protected areas", amended. At the same time, this wetland and lake complex along with the zone of Lake Buna and its surroundings, by DCM no. 683, dated 02.11.2005, are designated specially protected natural areas and are included in the "Ramsar Convention" list of waterfowl habitats.

According to government decision, the territory of managed nature reserve of Shkodra Lake is divided into subzones as below:

a) **Core Area** (marked in the map with “1/a”), composed of the lake shore from the western extreme of Zogaj village up to the border of the Republic of Albania with Montenegro and the mountain side of Tarabosh from 494 m height in the south up to 200 m at the depth of the lake waters in the north, within the segment Zogaj-Albanian-Montenegrin border. The second protection level applies to this zone.

b) **Habitat management area** (marked in the map with “2/a”), composed of the entire water surface of the lake, except the one included in area “1/a”, mentioned in letter “a”; western shore of Albanian part from the Buna bridge in the east to the village of Zogaj in the west (in the border with zone “1/a”, mentioned in letter “a” of this paragraph), including the total width of this segment up to the height of 300 m on the side of Tarabosh mountain in the south. The third protection level applies to this zone.

c) **Traditional development area** (marked in the map with “3”) composed of the total surface in the eastern part of the lake, bordered in the west with area “2/a” mentioned in the letter “b”, of this paragraph, up to the highway Shkodër-Hani i Hotit, in the east and the city of Shkodra on the southeast side. The fourth protection level is applied to this area.

Furthermore, the decision assigns the Ministry of Environment, Forests and Water Administration (MEFWA), that in cooperation with local authority, non-profit organizations, representatives of community and scientific institutions, to draft the administration regulation, management plan and natural reserve monitoring program of Shkodra Lake.

The management and conservation of Shkodra Lake is a key issue of the national policies on environment. It is a key issue of bilateral cooperation between Albania and Montenegro upon a number of previous projects related to the conservation aspects and management of Shkodra Lake implemented by the Albanian government, local authorities, international organizations, research institutions, national and local NGOs.

After roughly 7 years from the approval date of MNR the project “Integrated management of the Ecosystem of Shkodra Lake”(IMESHL) was implemented. This project was supported by MEFWA, GEF and World Bank, with the aim to prepare a 10-year Management Plan for MNR of Shkodra Lake (Albanian side), considering this plan as one of the most important ones for the project itself, but also for the integration and coordination of efforts of all stakeholders in an inter-institutional and crosscutting approach.

The objective was to develop a plan as a tool to guide management and use of resources, staffing, provision of funds, equipment and necessary programs to sustain this management.

Moreover, based on a vision and long-term prospective, the actions to be taken on conservation and management of MNR, based on principles of sustainable development and intelligent use of natural resources, using territory sub zoning were determined. These actions are mainly pointed to the accomplishment of needs and interests of local communities as principal beneficiaries, as well as interests of other stakeholders in order to conserve a balance between the use of natural resources and Lake Conservation.

The management plan of MNR Shkodra Lake has been approved upon the order of the Minister of Environment, Forests and Water Administration no.815, dated 21.11.2012. The

management plan claims to have developed a new zoning concept aimed at addressing the most important and interesting habitats pursuant to several protection categories with special status. This zoning concept mainly attends to the concept of UNESCO Biosphere Reserves, aimed at sustainable integration and management of the area for an intelligent use of natural resources. This concept has been proposed by project experts and widely discussed (according to them) with stakeholders. Although the plan and respective zoning (although contested) were approved 5 years ago, there are no data on its monitoring and implementation especially on the zoning system.

The zoning system is explained for each protection category and shown on the maps. The identification and/or marking of the subzones of the zoning system was not accomplished and it is very hard to do according to proposed subdivisions.

Therefore, this zoning system is inapplicable. It is also hard for the administration of the protected area and less valuable and understandable for the local population and/or other stakeholders who have interests in use this ecosystem.

The consultation process found that it is highly difficult to identify zoning of subzones.

The study of the following habitats is of particular importance due to their ecologic sensitivity, presence of rare and threatened flora and fauna species, suitability for shelter, nesting and food for birds and human influence.

- The floating macrophyte zone in Gashaj, the most important zone of floating macrophytes on the Albanian side, threatened by navigation in the lake. This zone is a nesting habitat for *Chlidonias hybridus*, which has been included in Ramsar, as well as for *Ardeola raloides* and *Aythya ferina*; (123.29 ha);
- 18 resources or “eyes” and artesian waters along the eastern shore of the lake. They are potentially threatened by water pollution in the lake watershed with direct impact in the lake, given the with underground sections;
- Reeds, forests and marshland in the Shkodër-Gril area; (500.18 ha);
- The lakeshore zone in Flakë (Buzë Uji), particularly important for forest, aquatic vegetation and birds (124.98 ha);
- The forest zone “Fshati i Paqes” in Tarabosh Mountain, interesting from the floristic viewpoint;
- The forest zone Zogaj in Tarabosh, very interesting from the floristic viewpoint (331.52 ha);
- The western lakeshore, where alborella (*Alburnus scoranza*) is reproduced in spring (153.8ha);
- The lakeshore waters with gravel bed along the Shirokë – Zogaj segment, as reproduction habitats for *Chondrostoma nasus* (50.62 ha);
- The shore of Shirokë, important habitat for the shelter of alborella *Alburnus scoranza* during winter (277.29 ha);
- The Zogaj shore, important habitat for the shelter of alborella *Alburnus scoranza* during winter (153.8 ha);

- The shallow waters along almost the entire eastern shore with solid beds where several species reproduce in spring such as carp *Cyprinus carpio* and *Carassius gibelio* (103 ha);
- Waters in stream gorges in the eastern shore where *Chondrostoma nasus* reproduces (418.41 ha);
- The inundated areas of the lake together with end points of drainage collectors discharging water in the lake (154.95 ha);
- The Upper Stream and the Delta of Përroi i Thatë (154.95 ha);
- The Steppe Zone in Postopojë, with a very interesting vegetation, important for medicinal plants as well (191.26 ha).

The Core Area (CA), a strictly protected area (in need of legal protection), has been divided into two other subzones: **CAa**, no human access and use is allowed (454.81 ha): Zone of floating macrophytes in Gashaj, as habitat for water birds *Chlidonias hybridus*, *Ardeola ralloides* and *Aythya ferina*; The forest zone of Zogaj in Tarabosh Mountain, very interesting from floristic viewpoint. **CAb**, zone with little impact from traditional use (navigation, fishing, agriculture, tourism etc.), (3066.04 ha): 18 resources or “eyes” and artesian waters along the eastern lakeshore; reeds, forests and marshland in Shkodra-Gril area, renowned for their vegetation and birds; Zones in Buzë Uji, particularly renowned for inundated forest vegetation and birds; Forest surface in (Peace Village), very interesting from the floristic viewpoint; Waters in the western shore where *Alburnus scoranza* and *Chondrostoma nasus* reproduce themselves during spring; The shore of Shirokë, important habitat for the shelter of alborella *Alburnus scoranza* during winter; Shore of Zogaj, important habitat for the shelter of alborella *Alburnus scoranza* during winter; the elliptic zone along the upper state border, where the migratory *Alosa agone* reproduces during spring; the shallow waters along almost entire eastern shore, where *Cyprinus carpio*, *Carassius gibelio*, *Alosa agone* (non-migratory) and *Chondrostoma nasus* reproduce themselves.

Buffer Zone (BZ), activities compliant with protection objectives may be carried out : **BZ a**, semi natural habitats, cultural zone and landscape (14907.15 ha); area of the lake, except the areas mentioned above, as an important habitat for birds and fish; the inundated zones around the lake and endpoints of drainage collectors , such as interesting boggy ground and grassland; the terminal segment of Përroi I Thatë, as an interesting landscape and corridor Liqen-Tëthore; Zone of Postopojë, as an interesting steppe for numerous medicinal plants; Villages around the lake: Shiroka, Zogaj, Buzë Uji, for cultural heritage and traditional products; Zones of cultural heritage outside the core area. **BZ b**, managed protected areas (6346.51 ha): agriculture land within the borders of the protected area; Tarabosh Mountain, for garrigue and other plants as well as Bunë-Rumije corridor.

Transition Area (TA), where management practices of sustainable resources are promoted (82762.09 ha): urban areas, Shkodër and Koplík; with are areas of intensive use around the protected area.

During the analysis, after consultations with field experts and comparison with legal provisions in force, it was found that the proposal for territory zoning pursuant to the Biosphere Reserve concept was ungrounded on the law on protected areas.

This concept was developed in view of an implemented project by Green Home (Montenegro) and INCA (Albania) on promotion of cross border cooperation on protection and sustainable use of land and water ecosystems in the Southeastern European region, based on basic knowledge and concepts of UNESCO's program "Man and Biosphere" and on the preparation of material on the designation of the natural lake ecosystem of Shkodra Lake as "Biosphere Reserve".

This proposal has not been accepted by Montenegro yet; consequently, Albania failed to pursue further approval steps. The analysis brings into attention that the proposed zoning in the management plan is not compatible with ToR, which require a management plan for MNR and not for Biosphere Reserve, given that MNR is still lacking the of Biosphere Reserve status.

The presented process of territory zoning likewise has failed to consider the provisions of the law no. 8906, dated 06.06.2002 "On protected areas", amended, namely articles 4, 4/1, 4/2, 9, 13, 14, 15 and 16, related to the approved practice and terminology on territory zoning of protected areas and protection scale of subzones. The division of subzones lacks a genuine logic of their definition, the rationale of its establishment and the permitted and banned activities for each subzone and justification for the protection scale are not provided.

Based on the presented zoning the Core subzone is divided into two parts: **CA a**, where no human access and use is allowed, (more acceptable,) and **CA b**, little impact from traditional use (navigation, fishing, agriculture, tourism etc). These foreseen activities are inconsistent with the concept of **CA**, which must be focused entirely on the protection of biodiversity of threatened species and their habitats and/or special and unique landscape values.

Therefore, **CA b** fails to accomplish the criterion for **CA**, given that core subzone prioritizes strict protection of biodiversity and only scientific research can be allowed. We believe that the allowed activities in the management plan such as navigation, fishing, agriculture, tourism etc, must not be included in **CA**, but they must be part of subzones of sustainable, traditional or recreational development.

The concept of **Buffer Zone** is not very clear in the management plan. This proposal is contrary to provisions of the law "On protected areas", amended, namely article 9, paragraph 4, which stipulates: Buffer zone of the habitats and species management area, may be designated the territory around it with 50 m radius from the border of the zone.

Thus, in the management plan (referring also to the map) the **Buffer Zone (BZ)** is large. Likewise, the division into two parts is unclear and meaningless: **BZ a**, semi natural habitats, cultural zone and landscape and **BZ b**, managed protected areas.

In the management plan, apart from legal disapproval, there is no accurate and technically argued explanation on what the **Transition Area (TA)** is, in which management practices of

sustainable resources are promoted. We think that this concept would rather be compatible with the sustainable development subzone.

Under these circumstances it is essential to remark the territory zoning, taking into consideration the provisions of the law “On protected areas”, amended, to conduct in-depth studies in order to determine the types of habitats according to the Natyra 2000, of Community interest and, threatened and endangered species classifications; designation of natural values, monuments of nature, unique and highly scenic landscape; designation of cultural and historical assets; tourism, infrastructure, intensive development of agriculture, fishing, extension of urban and rural centers; a list of activities carried out inside the MNR and their subsequent division according to sub zoning, banned activities, based on and compliant with the vision and long-term and short-term management objectives of MNR, including the social, economic developments and the new administrative division. The total approved surface area for MNR may also be reviewed to demark the areas that fail to meet but seriously harm the criteria and status of this natural ecosystem.

MNR Shkodra Lake has appointed the management administration (after the creation of NAPA), it has a management plan (even though inconsistent with its status) as well as several funding resources. Nevertheless, regardless of that, the conflict between the protection of the ecosystem on one hand and use of natural resources on the other still exists. The latter, are mostly attributed to deficiencies in both levels.

At the planning level, the main problem rests on the fact that it does not take place as a widely participatory process, there is unclear sharing of the powers, among stakeholders, unclear sharing of responsibilities among local governing units, unclear sharing among the roles and responsibilities of stakeholders on the use of natural resources and waters of this ecosystem. Likewise in general, there is no coordination with other relevant institutions, therefore other strategic plans and documents are not only improperly tailored, but they are also not being implemented.

The second level is reflected in the current management for the implementation of planned activities. This problem partly consists of the lack of institutional capacities, which includes insufficient staffing, especially in management and monitoring, shortage of maintenance staff lack of technical equipment and often lack of financial resources. In addition, there are frequent conflict with users, who do not comply with the controlling rules over the territory which renders the implementation of protection activities and proper integrated sustainable management more complex.

In these four years of the adoption of the management plan, no monitoring has taken place to assess the environmental situation, the biodiversity and activities envisaged in the action plan, or to draw conclusions on the implementation of the management plan.

It is foreseen that based on the recommendations of the monitoring plan for a five-year period, the current status of the protected area will be redefined, provided it meets the requirements to designate it as a “National Park”, which it has failed so far.

12. RE-ZONING PROCESS AND SYSTEM OF SHKODRA LAKE TERRITORY

12.1 Analysis of zoning of MNR Shkodra Lake

The regulatory framework for MNR Shkodra Lake is mainly based on the provisions of Law no. 8906, dated 06.06.2002 "On protected areas", amended and the bylaws for its implementation. Article 4/2 of this law stipulates:

- The territory of protected area is divided into subzones as per importance of habitats and ecosystems participating therein.
- Internal zoning may include the core area, recreation area, area of traditional use, area of sustainable development and other subzones adapted to the territory.
- Zoning harmonizes the level of protection with the subzone specificities, taking into account the nature of the area, types of human activities taking place therein and their impact on nature.
- Further, the Decision of Council of Ministers declaring the protected area specifies the name, surface area and level of protection of its subzones.

The territory zoning strategy is the key step in the process of drafting and implementing the management plan as it aims to accomplish the vision, programs, objectives, action measures, activities scheduled for the use and protection of biodiversity, land, forests, pastures, waters, landscape and cultural heritage values, which are further elaborated and translated into local spatial instruments of the activities planned to be prohibited, activities planned to be developed based on the legal provisions and management plan standards, and activities excluded from the MNR territory.

The practical purpose of the zoning strategy is to help administrators, users and decision-makers to make their choice, according to any positive or negative effects, regarding any interventions required to be made at MNR.

The division of the surface area of the managed nature reserve into administration subzones, is considered a useful tool in improving the management, where the key priority remains the conservation of nature, biodiversity, water and landscape, recommended to be met by a protected area under the international standards. This is simultaneously based on the objectives set forth in IUCN instructions. Zoning is the most important and most sensitive part of the management plan, as it better clarifies and specifies certain rules and restrictions related to the modalities, effects and intensity of human activities.

Zoning manages to prevent conflicts between the administrators and users of natural resources. It ensures a compromise between the conservation measures and the need for social, economic, ecotourism, educational, entertaining, sports, cultural and spiritual use. In selecting the management subzones and their boundaries, the following considerations were taken into account:

- ecological vulnerabilities, state of nature and naturalness,
- biological values, types of habitats, primary threatened species and landscape,
- internal and external stakeholders with impact on management,

- conservation and sustainable use of species and their habitats as an obligation of policies, plans, programs and state decision-making at national and local level,
- conservation and sustainable use of species and their habitats, which are conditioned by the maintenance or restoration of the favorable status of conservation for the species in its own or primary habitat,
- existing management and infrastructure related to the territory protection and use,
- identification of the use and their compliance with the objectives of the conservation of biodiversity and management goals,
- identification and separation of incompatible uses from one another,
- present community and business livinghood,
- level of use of the area by visitors and other users (especially fishermen, the key stakeholders), without permanent harms to the natural and fish resources,
- present tourist infrastructure and service improvement,
- concept of sustainable use of natural resources, as well as the traditional use of fishing practices, traditional use of land, farming, forests, pastures, waters, medicinal plants etc,
- demands for new socio-economic activities and of auxiliary services, improvement or expansion of constructions, road infrastructure, telecommunication, waste management or treatment of sewage and wastewater,
- need for studies, scientific research and monitoring.

In addition, the distribution of management subzones is also based on the basic planning instruments (including policies, plans and regulations etc) of the territory of Albania. The General National Plan (GNP) consists of the establishment of a guiding platform and the legal safeguard required for sustainable urban, economic, social and environmental territorial development.

GNP guides the sustainable use and exploitation of sources and potentials of Albania. In this framework, special focus should be shifted to the re-evaluation of the assets of natural, fishing resources and cultural heritage, based on the following aspects as well:

1. Ensuring territory sustainable development through rational use of land, waters, forests, pastures and other natural resources.
2. Assessing the current and prospective potential for the territory development at national and local levels, based on the balance of natural resources, economic and human needs and public and private interests.
3. Encourageing proper actions for the protection, restoration and enhancement of the quality of natural and cultural heritage, in particular the conservation of landscape and biological diversity.
4. Enabling the right of property use and development, ensuring proper housing conditions, ensuring the application of construction regulations, use of green spaces; economic, social and ecotourism activities, consistent with the community interests, planning instruments and the legislation in force.

Management plans drawn up for protected areas should identify "management subzones" to meet management objectives. Management subzones are part of the geographical territory of a protected area, in which allowed levels of use or different uses should be applied.

These differentiated levels of protection regime on one hand and allowed interventions of use on the other, should identify the management of subzones within a protected area. Zoning determines what can and cannot occur in the subzones of a protected area, in terms of management of biodiversity, use of natural and cultural resources by people for profit, or operations of maintenance and rehabilitation of habitats, species and landscape. Within each subzone, management descriptions should be reasonable, but may differ in type or intensity from those used in other areas.

Sub-zoning should be usually applied:

- to ensure the protection of critical or representative habitats, ecosystems and ecological processes;
- to identify special human activities incompatible with nature and biodiversity;
- to conserve natural and cultural qualities, thus allowing for a reasonable range of use;
- to rehabilitate or involve the affected areas in order to restore them to their previous natural state.

Work to examine the information and especially to review the process of the territorial zoning system of MNR according to the information collected during that period, was one of the main objectives in the meetings organized with the working group and other stakeholders.

High level consultations helped in developing the territorial re-zoning, based on the legal provisions in force, the need to strengthen the conservation of nature and biodiversity, use of natural resources, in accordance with the principle of sustainability, security of and support to the needs of communities for development, ensuring income to improve the livelihood quality and strengthen the environment, without impacting critical levels of living organisms and natural resources.

In this process due care was paid so as not to create a complex model, with vast number of subzones within the territory of the protected area. Designation of multiple subzones with minor differences in between would be confusing to the public and the overall protected area management.

The aim should be to use the minimum number of required subzones, appropriate and acceptable for management and to achieve the specific objectives of the protected area. Zoning should be easily identifiable by users and visitors and informative of the subzones, rules of use and management, allowed and prohibited activities and the reasons of restrictions.

In case of MNR Shkodra Lake, the subzones are identified by making use of the best available information and professional judgment of the planning team, which consisted of an inter-disciplinary composition. Additionally, it is based on the detailed analysis of the existing zoning set out by virtue of the DCM no. 684, dated 02.11.2005, as well as zoning

introduced in the Management Plan, approved by Order of the Minister of Environment no.815, dated 21.11.2012.

During the territorial zoning process, three stakeholders were identified: i) Group of researchers and various environmental NGOs, claiming the strict conservation of nature and biodiversity; ii) Group of resident residents, fishermen and business operators, who require sustainable development in harmony with nature; and iii) Group of several fishermen and mainly of the business community, who claim socio-economic development and tourism, without paying due attention to the nature conservation and ecosystem services.

12.2 Managed Subzones of MNR Shkodra Lake

The division of the surface area of the managed nature reserve in managed subzones was also based on the study of the types of habitats and vegetation cover. Territorial use is the determinant for the conservation of biodiversity, arrangement of social, economic and ecotourism activities or building infrastructure and supporting services.

Territorial use will enable a fair division of the managed subzones, determining the allowed, prohibited and permit-requiring activities, in harmony with the interests of the community and of sustainable development.

The following table indicates that the largest surface area of this reserve consists of water eco-systems, with 62.52% of the total surface area, followed by the agricultural land e,mixed with 18.53% of pasture and meadow land with 8.65% of the total surface area.

Table: Surface area according to the use of the territory in MNR Shkodra Lake

No	USE OF THE TERRITORY	AREA in HA	% of the TOTAL AREA
1.	Area of Forests, reforestations, rare forests, aquatic vegetation.	1,227.00	4.62
2.	Agricultural land, vineyard, orchards, and construction land.	4,917.20	18.53
3.	Natural pastures and stone meadows	2,295.00	8.65
4.	Wasteland, gravel area, rocky area and stream beds	1,408.90	5.31
5.	Water, marsh and lagoon area	16,588.70	62.52
6.	Urban area	98.50	0.37
	GENERAL AREA	26,535.30	100.00



Division of the territory in managed subzones is considered a hugely important process of compromise, between the interests and the best understanding of conservation of biodiversity aiming at improving the socio-economic development through balancing in the respect for the community and nature.

Based on the studies, the information collected and analyzed and the meetings held, it was found that 70% of participants agree to use the re-zoning system with three managed subzones, as the most appropriate system for to MNR Shkodra Lake:

- **Core Subzone (CA).**
- **Recreation Subzone (RA).**
- **Sustainable Development Subzone (SDA).**

Table: Area according to the subzone of MNR Shkodra Lake

No.	DESIGNATION OF SUBZONES	Surface area in ha	%/Total surface area
1.	Core Subzone (CA)	845.09	3.18
2.	Recreation Subzone (RA)	3,943.47	14.86
3.	Sustainable Development Subzone (SDA)	21,746.72	81.95
	TOTAL AREA	26,535.28	100.00

13. FUNCTIONS OF MANAGED SUBZONES

13.1. Functions of the core subzone (CA)

The Core Subzone aims at covering the overall biodiversity conservation and ensuring an undisturbed natural area. The subzone has a very high environmental performance and falls under the first degree of conservation . It lies in a surface area of **845.09ha** or 3.18% of the total area of the MNR.

It is a strictly protected natural conservation area, where no interventions are allowed and it serves as a reference site in terms of natural heritage, study and monitoring research. It consists of natural habitats of paramount importance, threatened or endangered species, reproduction areas of fish and birds protected by the national legislation, international conventions, EU directives or included in the Red Book (for plants, birds and wild animals). The following types habitats are special: Mediterranean shrubs; Rock mountains (in forested areas); Moist meadow/pasture moist; Willow-poplar-alder-birch wood; Willow-poplar woods; Willow softwood; Floating leaves dense; Reed cattail; Reed and Mediterranean wood.

Study and monitoring research are allowed in this subzone according to the predetermined programs.

Temporary recovering interventions, only in cases of natural disasters or caused by humans, fires, diseases, pests, disposal of solid waste, plastics, aggregates, etc. and the establishment of information infrastructure for visitors and tourists are allowed with special authorization by RAPA.

Social, economic and ecotourism activities are not allowed.

13.2. Functions of the recreation subzone (RA)

The subzone (MEF) has the primary function of conservation of biodiversity, and ensuring a natural area less concerned by ecotourism activities carried out through an effective management of visitors and supporting infrastructure.

The subzone includes several natural habitats and their respective species, which require special conservation measures in the management plan under the provisions of the law “On the protection of biodiversity”.

The subzone has also a high environmental performance and falls under the second degree of conservation . It lies in a surface area of **3,943.47ha** or 14.86% of the total MNR area.

An important part of the subzone consists of natural habitats and the respective species such as threatened or endangered plants, poulties and species of fish, which are protected by national legislation, international conventions, EU directives (for bird habitats) or included in the Red Book, which require special conservation measures, determined accurately in the management plan as in the provisions of the law “On the protection of biodiversity”.

The following types of habitats are special:

Mediterranean shrubs; Rock mountains (in forested areas); Willow-poplar-alder-birch wood; Reed and Mediterranean wood; Floating leaves scattered; Floating leaves dense.

In addition, it creates opportunities and facilities relevant to scientific research, education and awareness raising.

The subzone allows access for the public respecting the boundaries of the subzone, it allows the development of ecotourism, leisure, sports, spiritual activities and popular manifestations, in order to respect the functions, ecological values, natural – cultural landscape, however,

activities leading to occupation of the territory, disturbances, problems, pollution, degradation of waters and loud noise are prohibited.

This area is very suitable for ecologically sustainable recreation and it provides a less concerned natural area. Activities are carried out through effective management of visitors and supporting infrastructure.

Visitors are welcome, but they may also be a heavy burden, if they are not well managed and organized. Visitors are an important group to reach the objectives for environmental education and awareness raising. They are equally important for improving the economic situation and living conditions of the residents. Therefore, the local population and administration should have the same interests in attracting visitors.

Furthermore, it is essential to create opportunities to experience nature, cultural resources and hospitality of the local population, and therefore it is necessary to construct, conserve and maintain an appropriate and attractive infrastructure to visitors and tourists who can support the local economy.

At the same, in locations where visitors can experience the beauty of nature, the attractiveness of monitoring the biodiversity, bird watching, sightseeing and other relevant features of the MNR, RAPA should outline a specific infrastructure for visitors, attractive enough to keep them away from sensitive areas.

Construction of infrastructure (opening paths, posting signs, signboards) establishment of the necessary structures for the visitors' security in land lakeshore routes, temporary camping sites, simple and temporary sports and entertainment related facilities, interventions in water and underwater areas, in resources and "eyes" will be performed according to the preliminary technical projects of the management plan approved by the competent territorial planning authorities, in cooperation with the administration of the protected area.

The effectively managed subzone facilitates the sustainable and well controlled development of several social and economic activities of public interest indispensable for the residents' living.

It also allows for the collection of medicinal plants, secondary forest products, sport fishing, use of water for bathing and water sports, upon the consent of the MNR administration.

According to the rules set by NAPA, scientific research, studies, monitoring and promotional educational and awareness raising (not massive) activities, are allowed compliant with the functions of this subzone. Thus, it allows temporary recovering interventions, only in cases of natural disasters, disposal of solid waste, plastics, aggregates, and the establishment of infrastructure for the information of visitors and tourists.

13.3. Functions of the sustainable development subzone (SDA)

The function of this subzone is the conservation of nature and biodiversity in harmony with the development of social-economic activities and infrastructure for residents of the area and

the business community, in compliance with the vision, objectives, protection measures, development and management actions of the management plan.

The subzone has sufficient environmental performance and falls under the third degree of conservation. It lies in a surface area of **21,479.72ha** or 81.95% of the total MNR area.

Various types of natural habitats and their respective species are dominant in the area, which are also protected by the national legislation, international conventions, EU directives (for habitats and birds) or included in the Red Book. This subzone mainly includes: the water area of the lake; Dry meadow/pasture dry; Gravel steppe/pasture scattered; Dry grassland with hedgerow Mediterranean. succession including grassland on rocks; Extensive (small scale) agriculture incl. orchards; Slope meadows and hedgerows; Temporary streams (residual waters); Rocky beach; Greenhouse cultures; Canals; Settlement scattered; Single Houses/infrastructure/ruins; Main road; Small roads; Railway , etc.

The subzone must ensure that it does not affect the harmonious interaction of nature with culture through the protection of the landscape quality, continuous and controlled use of land, water, forests, pastures, medicinal plants and craft activities. In the meantime, any form of farming, livestock breeding, forestry, pasture and fishing, etc., is allowed in compliance with the local development plans and the management plan for the protected area.

The subzone includes the water surface area of the protected area, farmland and settlements area where construction and residential buildings of the inhabitants are located. Residents, fishermen and business operators may continue their livelihood, traditional and agro-tourism development practices, as well as social and cultural activities.

Private, public entities and each individual may carry out economic activities, under the monitoring of competent state bodies, administration and local government, only in compliance with the strategy of sustainable development, with all the rules of the MNR administration and planned control, which respect to the boundaries, zoning and subzoning status.

Establishment and expansion of urban areas, economic and commercial areas or infrastructure of services for the needs of residents, visitors and the business community, is based on development studies, spatial planning instruments, environmental bearing capacities, environmental impact assessments, including the construction or reconstruction of buildings for local residents, other facilities for visitors, tourists such as hotels and restaurants, etc.

It is necessary to provide for the maintenance of existing roads or to open new paths/trails, parking lots for vehicles; installation of sewage and waste water treatment plants, waste management, cleaning of the territory and water surface etc., based on the development projects approved by the National Council of Territory (NCT) of Albania.

The use of ground, underground waters and resources for urban, municipal, agricultural, aquaculture, fishing, industrial, commercial, ecotourism and for other purposes requires

approval by the relevant state bodies for projects that support the vision, objectives, management plan and MNR status. Projects should be well harmonized and least detrimental to the vegetation and landscape, have to be approved by the territorial planning and management authorities of the network of protected areas in the country.

The subzone allows for residents to continue their living style, traditional practices of using natural resources and Fisheries. It allows access for the public respecting the boundaries of the subzone, and traditional social activities. Visitors can enjoy the local products and landscape, get acquainted with the styles of living, culture and history of the residents and the coexistence of religious communities.

It also allows for scientific research, studies, monitoring and promotional, educational and awareness raising activities.

14. MANAGEMENT ACTIVITIES

The MNR rezoning system will undoubtedly bring some restrictions on activities within the territory. Similarly, internal zoning management will prohibit any human activities in the core area because nature and wildlife should develop and evolve beyond the influence of man and for some species, life would be impossible in conditions of human distress.

However, rather than imposing restrictions, rezoning aims at controlling, disciplining and allowing for the development of activities consistent with the management objectives of each subzone, so that conservation of nature and biodiversity does not hamper the need for development and improvement of the welfare of local residents, in full harmony with the conservation objectives.

In this context, it is very important to prepare preventive measures in man-nature conflicts. Ecotourism and mass sports, entertainment activities and camping might disturb wildlife and increase conflicts between man and wildlife, etc.

In the new zoning conditions of the MNR, local residents will benefit from the balanced use of natural resources, Fisheries, the significant growth of the number of national and foreign visitors, ecotourism activities and the duration of the tourist season. However, attention should be paid in order to protect the MNR by mass tourism development, because that would lead to serious problems in visitors' management in terms of the distress and left-over waste.

Management and planning measures applicable to each subzone should be sufficient to achieve the objectives of short and long term conservation and in particular they should take into account the threats posed to the MNR territory. They should provide the basis for assessing the adequacy of measures, efficiency of implementation of the plan and help in reviewing the management plan. Management actions are based on adequate knowledge of the elements of the natural terrestrial and aquatic environment and the social, economic and cultural stakeholders typical of each subzone.

Pursuant to the applicable rules of law, planning, supervision and monitoring should cover each subzone. Separation of management activities, under the managed subzones, every

opportunity for development in the future, a myriad of problems restricting the presence of natural resources should be taken into account. These are clearly indicated in the management operations for each component of the zoning system of what is allowed or prohibited within the MNR. We need to draft and implement action plans for MNR and natural resources protection and restoration

Integration of economic activities and especially of traditional ones in drafting protective measures takes into account the traditional livelihoods and cultural activities of the local population. There will be exceptions if needed in order to meet the residents' need, such as in cases of land use, fishing, grazing, timber and firewood, collections and processing of medicinal plants or secondary forest products, water for bathing and irrigation or construction of small reservoirs, certain natural resource-related crafts, expansion of housing sites or establishment of new businesses, and improvement or expansion of infrastructure, etc.

Ownership of land, forests, pastures and natural resources integrated in the management of reserves takes into account the interests of owners and their legal inheritors. The management plan shall take into consideration those properties that are not documented and registered, pursuant to the legal provisions in force. However, no exceptions will be applied because:

- They do not jeopardize conservation, destruction or damage of ecosystems, types of protected habitats and biological processes that contribute to their conservation;
- They do not cause the extinction or significant reduction in the number of individuals that constitute the population or the species of flora and fauna, the migratory or endemic endangered or threatened species, in particular.

Some social, economic and ecotourism activities, inappropriate for the protected area status, are discouraged from application, such as: alienation and degradation of land and water, overgrazing livestock breeding, irrational use of forestry and natural resources, occupation of territory, massive organized tourism, large hotels, trade malls, large holiday resorts, environmental - unfriendly infrastructure, extensive entertainment and sports facilities and services, noisy activities related to a significant number of people and vehicles in the same place and time that repeatedly disturb wildlife or damage and heavily pollute the environment of the reserve, etc.

The action plan supports the fulfillment of long-term and short-term programs and objectives for the MNR management, determines the relevant structures, timeframe of implementation, based on the managed subzones and related indicators. Planned activities that are undertaken in the action plan fulfill the implementation of programs and objectives, according to the immediate possibilities and the 10-year period for the implementation of the management plan.

The action plan also constitutes the basis of the assessment for the implementation of the management plan and the effectiveness of activities for the conservation of biodiversity and landscape, for the sustainable development of social, economic, ecotourism education and public awareness activities, based on the methodology set out in the management plan.



**CRITICAL ECOSYSTEM
PARTNERSHIP FUND**



The Action Plan also supports and guides the planning of the annual work program of RAPA and stakeholders involved in the management of the reserve.

The National Agency of Protected Areas and RAPA should use the action plan to plan the needs for funding, draft technical projects for the maintenance and rehabilitation of types of habitats and landscapes, establish and strengthen the managing and controlling structures of the management plan along with the required infrastructure and logistics in order to perform the relevant tasks.

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16. ANNEXES:

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