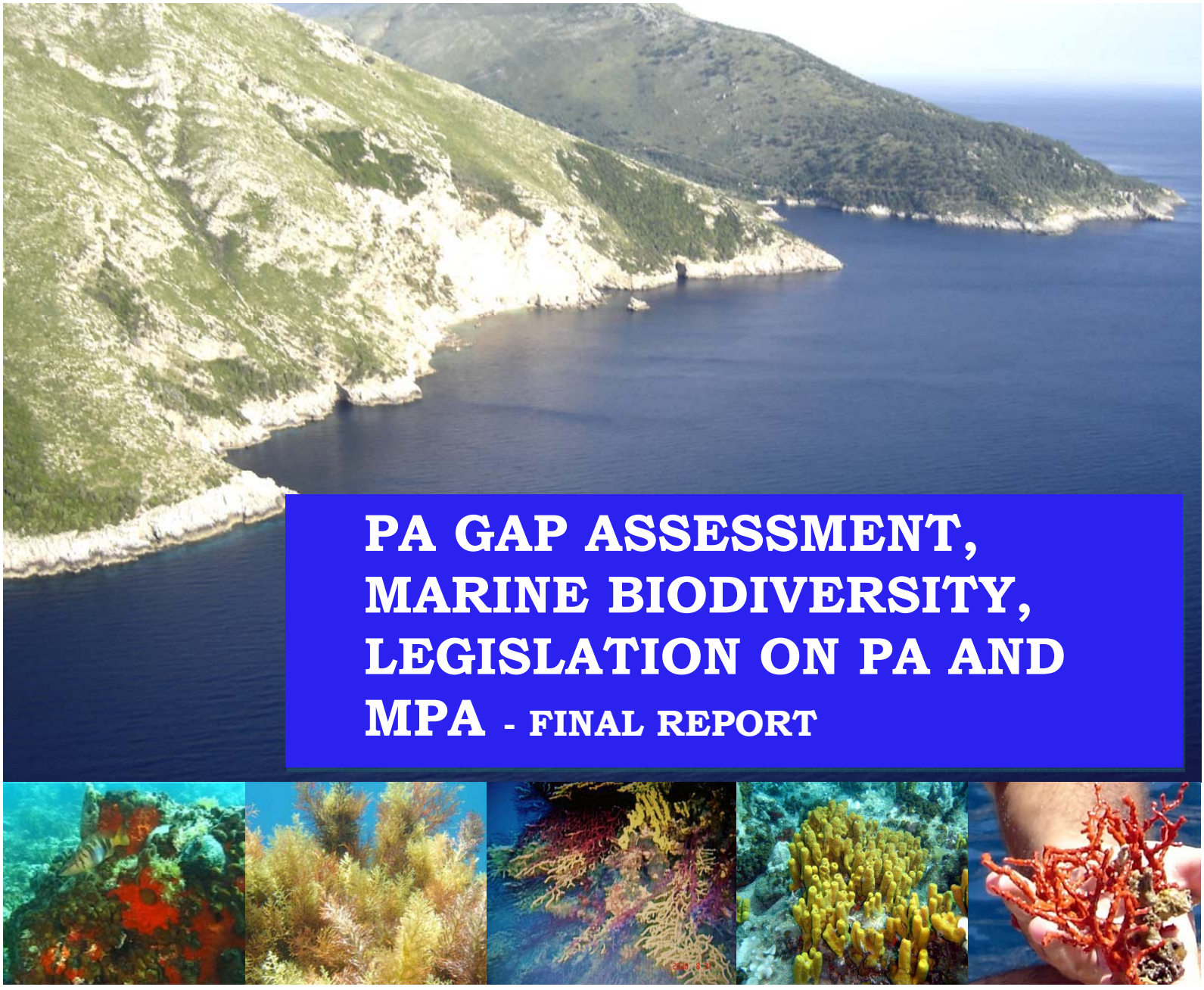
Protected Areas Gap Assessment and
Marine Protected Areas Development Project



PA GAP ASSESSMENT, MARINE BIODIVERSITY, LEGISLATION ON PA AND MPA - FINAL REPORT

Tirana
March 2010

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Consolidated Report

Prepared by Lefter Kashta

Tirana

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Acronyms and Abbreviations

AL	Albania
BSAP	Biodiversity Strategy and Action Plan
ASCI	Areas of Special Conservation Interest
AULEDA	Aulona Local Economic Development Agency
BIO SAP	Biodiversity-Strategic Action Plan for Marine and Coastal Biodiversity
BRI	Biological Research Institute
CAMP	Coastal Area Management Program
CBD	Convention on Biological Diversity
CITES	Convention for International Trade in Endangered Species
CHM	Clearing House Mechanisms
CNPPA	Commission on National Parks and Protected Areas
CoM	Council of Ministers
COP	Conference of the Parties
CTAAR	Council of Territorial Adjustment of the Albanian Republic
CZMP	Coastal Zone Management Plan
DCM	Decision of Council of Ministers
DFS	District Forest Service
DNPP	Directorate of Nature Protection Policies
EA	Ecosystem Approach
ECNC	European Commission National Conservation
EEA	European Environmental Agency
EECONET	European Ecological Network
EEZ	Exclusive economic zone
EIA	Environmental Impact Assessment
EU	European Union
FRI	Fishery Research Institute
FYROM	Former Yugoslav Republic of Macedonia
FAO	Food and Agriculture Organization of the United Nations
FD	Fishery Directorate
GBS	Global Biodiversity Strategy
GDFP	General Directorate of Forests and Pastures
GDP	Gross Domestic Product
GEF	Global Environmental Facility
GEF/SGP	Global Environmental Facility/Small Grant Programme
GES	good environmental status
GIS	Geographic Information System
GNP	Gross National Product
GoA:	Government of Albania
GPA	Global Program of Action for Protection of the Marine Environment from Land Based Activities
ICZM	Integrated coastal zone management
IFPR	Institute of Forests and Pastures Research

IHM	Institute of Hydrometeorology
IMO	International Maritime Organisation of the United Nations
IUCN	International Union for Conservation of Nature
K-V-MPA	Karaburuni-Vlora Marine Protected Area
LAC	Limits of Acceptable Change
LG	Local Government
LOSC	United Nations Convention on the Law of the Sea
LPA	Landscape Protected Area
MAP	Mediterranean Action Plan
MAFPC	Ministry of Agriculture, Food and Protection of Consumers
MARPOL	Convention on Prevention of Pollution from Ships
MB	Management Boards
MDGs	Millennium Development Goals
MEFWA	Ministry of Environment, Forest and Water Administration
METAP	Mediterranean Action Plan
MKOE	MillieuKontakt Ost Europa
MNS	Museum of Natural Sciences
MN	Montenegro
MoAF	Ministry of Agriculture and Food
MoE	Ministry of Environment
MoLG	Ministry of Local Government
MoTA&T	Ministry of Territorial Adjustment and and Tourism
MP	Management Plan
MPA	Marine Protected Area
NBSAP	National Biodiversity Strategy and Action Plan
NCNB	National Council for Nature and Biodiversity
NCSA	National Capacity Self-Assessment
NCTA	National Council of Territorial Adjustment
NGO	Non Governmental Organisation
NSSED	National Strategy for Socio-Economic Development
PA	Protected Area
PAMU	Protected Area Management Unit
PEEN	Pan-European Ecological Network
PESBLD	Pan-European Strategy on Biological and Landscape Diversity
PLPA	Proposed Landscape Protected Area
PoWPA	Program of Work on Protected Areas
PSSA	Particularly sensitive sea area
REA	Regional Environmental Agency
REC	Regional Environmental Centre
RFU	Regional Facilitation Unit
RNPA	Representative Network of Protected Areas
SB	State Budget
SPA	Specially Protected Areas

SPA/RAC	Specially Protected Areas/Regional Activity Center
TOR	Terms of Reference
UNCED	United Nations Conference on Environment and Development
UNFCCC	United Nations Framework Convention on Climatic Changes
UNDP	United Nations Development Program
UNEP	United Nations Environmental Program
UNESCO	United Nations Education and Scientific Cooperation Organization
VC	Visitor Centre
WFD	Water Framework Directive
WTO	World Tourism Organisation

Preface

The objective of this project is to implement some of key recommendations relating to country's participation in the Programme of Work on Protected Areas (PoWPA) which included the need for a comprehensive ecological gap assessment for the Protected Area (PA) system, and establishment of a policy environment and knowledge on marine protected areas.

Despite the sea presence, there is no Marine Protected Area (MPA) in Albania, only national parks considering mainly terrestrial ecosystems. Marine protected areas are a practical way of conserving marine biodiversity, maintaining the productivity of marine ecosystems and contributing to the economic and social welfare of human communities. Establishment of MPAs and no-take zones will be beneficial for fisheries management as it will seek to make fisheries sustainable in the long term. In addition, ecotourism development and local economy would benefit in the short and long run (this will include cost benefit analysis and monitoring).

The project addresses the key gaps of the PA system in Albania in general (by identifying and planning to cover the key biological gaps), and more specifically marine areas (as this has been the weakest element of the PA system so far). The efforts will also elaborate the key priority actions related to the working program on PA that Albanian environment authorities have identified.

The working group of national and international experts: Violeta Zuna (team leader), Eno Dodbiba, Saimir Beqiraj, Genti Kromidha, Lefter Kashta, Ermira Koçu, Albana Zotaj, Virginie Tilot and Nienke van der Burgt (with contribution from Paul Goriup, Stephen Hodgson).

The inputs from thematic study reports cover PAs/MPAs, relevant legal, marine biodiversity and mapping issues, specifically such as:

- The gap assessment of the system of PAs in Albania (Genti Kromidha);
- The assessment of marine biodiversity and potential MPAs (Lefter Kashta & Sajmir Beqiraj);
- Proposal for a Marine Protected Area in Albania (Virginie Tilot);
- The legislation framework for PA and marine conservation (Ermira Koçu and Nienke van der Burgt with contribution from Paul Goriup and Stephen Hodgson);
- The accompanying maps have been compiled by Albana Zotaj.

The following document represents a Consolidated Report (prepared by Lefter Kashta), which integrates in a more practical way the contributions of the project team that are mentioned above and more concretely it:

- Evidences the highlighted issues related to gap assessment of the PA system in Albania;
- Describes the situation on marine biodiversity conservation and MPAs in Albania;
- Describes the biodiversity, natural and cultural values of the proposed potential MPAs and illustrates the fulfillment of the relevant criteria for MPA proclamation;
- Evidences the highlighted issues related to the proposal for the first MPA in Albania;

- Evidences the gaps of legislation related to marine conservation and highlights the proposals for improvement and approach to the relevant European legislation.

Acknowledgement

This publication was accomplished with assistance and support of GEF,d UNDP Albania and MoEFWA of Albania.

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Introduction

Albania is endowed with a natural heritage as rich as its cultural heritage. The country's future is dependent on the wise use of its natural resources. The government of Albania is committed to the conservation of the country's renewal and non-renewable natural heritage, for the benefit of present and future generations. The establishment of a National Protected Areas network aims at maintaining the diversity and viability of the various components of Albanian's natural heritage, and to insure the sustainable utilization of the natural resources within them.

The objective of the project is, building on the recent WB study on the protected area system in Albania, to implement some of its key recommendations relating to country's participation in the Programme of Work on Protected Areas. These included a need for a comprehensive ecological gap assessment for the protected area system, and a need for establishment of a policy environment and knowledge on marine protected areas.

In order to strengthen the implementation of the National action plan on CBD Programme of Work on Protected Areas (Annex 3), Memorandum of Understanding between WWF European Policy Programme International Ass. Rome Branch and the Ministry of Environment, Forests and Waters Administration was signed in 2007, on cooperation in developing common actions in support of the CBD PoWPA implementation in Albania, in the context of the wider Dinaric Arc Ecoregion. The general objectives of this collaboration are those identified in Protected Areas for a Living Planet - Dinaric Arc Ecoregion Project (Slovenia, Croatia, Bosnia and Herzegovina, Montenegro, and Albania), including supporting data and inventory needs, institutional capacity building, creating an enabling policy framework, ensuring financial sustainability of protected areas and national system of protected areas, assessing management effectiveness of existing PAs, developing management plans that would preserve "favorable conservation status" of habitats and species of European importance, developing an effective system for monitoring of biodiversity, ensuring that governmental and non-governmental stakeholders contribute to the implementation of the activities under this MoU, establishing and strengthening regional networks and trans-boundary protected areas, and other forms of collaboration between neighboring protected areas across national boundaries, within the Dinaric Arc Ecoregion.

Although there are protected areas and different projects are being run, Albania has not yet drawn up a comprehensive inventory of biodiversity data that could be used for further protected areas planning. Apart from the Global Environment Facility (GEF) grant that assisted the development of the national strategy and action plan for biological and landscape diversity conservation, as well as the preparation of the Coastal Zone Management Project, Albania received very little international assistance to protect biodiversity and marine, coastal ecosystems.

Despite the sea presence, there is no Marine Protected Area (MPA) in Albania, only national parks considering mainly terrestrial ecosystems. The Albanian coastal region, with a total length of about 429 km, in general is preserved more or less in its natural state. But on the other hand it is a fact that the uncontrolled human activity has damaged extensively the ecological values of the coastal area of Albania.

Marine waters of Albania, in spite of being very scanty and poorly studied and surveyed so far, are distinguished for their high level of biological diversity and very well developed littoral and benthic communities (Anonymous, 2002).

Large, meadow-forming species of *Posidonia oceanica is* the dominant seagrass species on Albanian coast in terms of cover/abundance. The *Posidonia oceanica* beds in the Adriatic coast of Albania are rare and isolated. This seems to be linked to the effect of freshwater flows and high values of suspended materials coming down from the rivers.

Well developed Posidonia meadows are found along the littoral of Cape Rodoni, near Porto Romano and Vlora bay. Extensive *Posidonia oceanica* meadows cover the shallow waters of all Ionian south of Vlora. Their state is considered as normal according to their density, leaves production and rhizome growth rate (Kashta *et al*., 2005; 2007)

In some localities with subnormal low density values must have been object of human activity impacts, creating regressions phenomenon until "matte" *morte* or dead "matte".

An international project aimed at mapping (GIS) Posidonia meadows along the Albanian coast, collect scientific information on the meadows and, through bottom-up-approach, promoting the protection of *Posidonia oceanica,* is coming to the end.

The marine environment along the Adriatic Coast is affected by the considerable pollution of the last 30 years, both by discharge into the sea of polluted river water and by direct discharge of untreated urban and industrial wastewater (Anonymous, 2002).

The intensive agricultural activity, developed in this area, represent another source (nutrients and pollutants) that impact seagrass beds.

Another factor of the last ten years that is having significant impacts on the marine and coastal ecosystems is the creation of new resident areas and enlargement of the existing ones along the coast, including the construction and housing along the beach and seashore. The presence of an increasing number of people in the coastal area is accompanied by an increase of water pollution (Anonymous, 2002).

The lagoons and their surrounding areas are of very present in the coastal area and of special concern, particularly for the avifauna. In 3% of the territory that covers the coastal wetlands are present more then 70% of the country biodiversity value. The most important wetlands for the wintering birds along the Albania's coast are Karavasta, Narta and Kune-Vaini lagoons. These wetlands serve as a haven for more than 6% of the wintering individuals of the European population of the Dalmatian Pelican *Pelecanus crispus*. Dolphins' *Delphinus delphis* and *Tursiops truncatus* visit the marine and coastal waters of Albania, while *Stenella coeruleoalba* is an occasional visitor. *Delphinus delphis* is a vulnerable species, whereas *Tursiops truncatus* is a rare species. The Mediterranean seal *Monachus monachus*, a species threatened with extinction is also a very rare, occasional visitor to the Albanian coastal waters.

Establishment of MPAs and no-take zones will be beneficial for fisheries management as it will seek to make fisheries sustainable in the long term. These activities will be based on the involvement and participation of fishermen in this process who would become owners and 'caretakers' of no-take zones and MPAs. In addition, ecotourism development and local economy would benefit in the short and long run (this will include cost benefit analysis and

monitoring). For example, with this approach fish will be provided by locals from their sustainable fisheries and sustainable mariculture farms (need for certification). In addition, local restaurants and hotels can become part of this initiative establishing special seafood festivals, educating tourists about the sea food species that are sustainably managed, and are not endangered and threatened by fishing, pollution etc. ('greening of fisheries industry').

Establishment of MPA and no-take zones will increase scientific understanding, and enhance non-extractive human activities related to tourism and recreation.

The present project (i) addresses the key gaps of the protected areas system in Albania in general (by identifying and planning to cover the key biological gaps), and (ii) marine areas more specifically (as this has been the weakest element of the protected area system so far). This addresses the key priority actions for PoWPA identified by Albania.

1. Gap assessment of the system of PAs in Albania

1.1. *Background*

Albania is distinguished for its rich biological and landscape diversity. This diversity is attributable to the country's geographic position as well as geological, hydrological, climatic, soil and relief characteristics. The mountainous terrain combined with steep cliffs creates ideal conditions for maintaining and protecting a large number of ancient species, some of which are endemic or sub-endemic. The high diversity of ecosystems and habitats (marine and coastal ecosystems, wetlands, river deltas, sand dunes, lakes, rivers, Mediterranean shrubs, broadleaf, conifers and mixed forests, alpine and sub-alpine pastures and meadows, and high mountain ecosystems) offers rich habitats for a variety of plants and animals. There are around 3,200 species of vascular plants and 756 vertebrate species. There are 27 endemic and 160 sub-endemic species of vascular plants. Approximately 30% of all European floras occur in Albania. The high Albanian forests maintain communities of large mammals such as wolf, bear, lynx, and wild goat, and also characteristic bird communities.

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

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

In spite of the fact that a low number of species has become extinct during the past century in Albania, the rate of loss of country's biodiversity during the last 50-60 years is believed to be increasingly high. Moreover, insufficient knowledge and studies on a wide range of flora and fauna limit an accurate historical evaluation of the biodiversity status of Albania. Four species of mammals have become extinct; and meanwhile 17 bird species no longer nest in the country's territory. During the last 25 years, approximately 122 species of vertebrates (27 mammals, 89 birds, and 6 fish) and four species of plants are expected to have lost more than 50% of their population. The number of rare and endangered species of plants and animals is high and expected to increase if appropriate conservation measures are not taken.

The international community concerned with increasing rate of biodiversity loss started to address the challenge through various processes. One of the most important events was the United Nations Conference on Environment and Development (Earth Summit) held in 1992 in Rio de Janeiro. The Earth Summit resulted in a set of documents, including Agenda 21 and Rio Declaration that laid down principles of and rules for a global environmental management. The UNCED process has also produced important additions to international law including the Convention on Biological Diversity (CBD), the United Nations Framework Convention on Climate Change (UNFCCC), and the Convention to Combat Desertification in Those Countries Experiencing Serious Droughts and/or Desertification, Particularly in Africa, often referred to as the Rio Conventions.

The Convention on Biological Diversity (CBD) was approved by the Albanian Government in January 1994. The Focal Point for the convention is the Minister of Environment, Forests and Water Administration. Since then and on Albania has undertaken a series of actions to meet with its obligations to implement CBD.

The establishment of the Emerald Network of Areas of Special Conservation Interest (ASCI) to Europe supports the implementation of the Convention on the Conservation of European Wildlife and Natural Habitats known as the Bern Convention 1979 (Council of Europe 1997).

Albania signed the Convention on the Conservation of European Wildlife and Natural Habitats (Bern, 1979) on 31 October 1995 and ratified it on 2 March 1998. In 2001 the Council of Europe invited Albania to start the EMERALD Network project. The project started in April 2002, according to the contract signed in 25 February 2002 between the Ministry of the Environment of Albania and the Council of Europe. The project is already completed and it laid the basis for the development of EMERALD Network at the national level.

Several protected areas identified as areas of special conservation interest-ASCI are included in the Emerald Network in Albania. Some 19 sites along the coast have been identified since 1996 (under Coastal Area Management Program – CAMP (UNEP/MAP, 1996) and proposed to be given the status of specially protected areas — SPAs. Up to date there are not established marine protected areas. Various documents mention candidate sites such are Sazani, Karaburuni, Porto Palermo, Ksamili and Ftelia, but further action steps are not yet undertaken.

Albania is a party to other International treaties, such as the Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention); the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention); the Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention); the Convention on the Conservation of World Cultural and Natural Heritage (UNESCO).

The “in situ” nature preservation in Albania started some 50 years ago. But it took a stronger development after 1990. There are currently about 802 protected areas (including 750 Nature Monuments) in Albania, covering around 9.08 % of the total land surface of the country. There are no marine protected areas in Albania yet.

Ministry of Environment, Forests and Water Administration (MEFWA) is the main institution responsible for the protection of environmental values in Albania. According to the legal provisions, MEFWA identifies protected areas and approves management plans.

The administration and management of protected areas is based on Law No. 8906 dated 6 June 2002 “On Protected Areas”. The object of this law is the declaration, preservation, administration, management and use of protected areas and their natural and biological resources; the facilitation of conditions for the development of environmental tourism, for the information and education of the general public and for direct or indirect economic profits, by the local population, by the public and private sector.

This law regulates the protection of six categories of protected areas, applied in the territory of the Republic of Albania. The categorization of areas, the status, and level of protection for each area is based on the criteria of the World Centre of Nature Conservation (IUCN). The law pays special attention to forests, waters and other natural resources within protected areas that shall be excluded from classification as forests for utilization.

The legal framework for nature conservation does not take into consideration existing capacities and for this reason law enforcement is weak. The legal provisions are not sufficiently implemented in relation to damage to biological diversity and violation of national legislation (including the criminal code).

For the in-situ biodiversity conservation, responsibilities of individual organizations are not yet clearly defined. In addition, activities are not well coordinated among sectorial institutions, which manage and implement individual (particular) projects aimed at the in-situ conservation of biological diversity. The potential of project steering committees is not always used efficiently. It has happened that the achievements within a project life have been vanished after the project has ended up. Often institutions have not been able to adopt the project outputs as their sustainable assets.

Performance of individual institutions is limited by their capacities. Effectiveness of their performance is assessed through checking the success or failure to complete tasks within the approved annual work plan, and possibly through assessing the effectiveness of funds spent. There is no feedback on the effectiveness of institutional performance on the biodiversity status and development.

1.2. *PA gap analysis and establishment of MPA project*

1.2.1. What is gap analysis?

At its simplest, a gap analysis is an assessment of the extent to which a protected area system meets protection goals set by a nation or region to represent its biological diversity.

Gap analyses can vary from simple exercises based on a spatial comparison of biodiversity with existing protected areas to complex studies that need detailed data gathering and analysis, mapping and use of software decision packages. All gap analyses should consider a range of different "gaps" in a protected area network:

- ***Representation gaps*:** either no representations of a particular species or ecosystem in any protected area, or not enough examples of the species or ecosystem represented to ensure long-term protection.
- ***Ecological gaps*:** while the species or ecosystem occurs in the protected area system, occurrence is either of inadequate ecological condition, or the protected area(s) fail to address species" movements or specific ecological conditions needed for long-term survival or ecosystem functioning.
- ***Management gaps*:** protected areas exist but management regimes (management objectives, governance types, or management effectiveness) do not provide full security for particular species or ecosystems given local conditions.

1.2.2. Principles of Gap Analysis

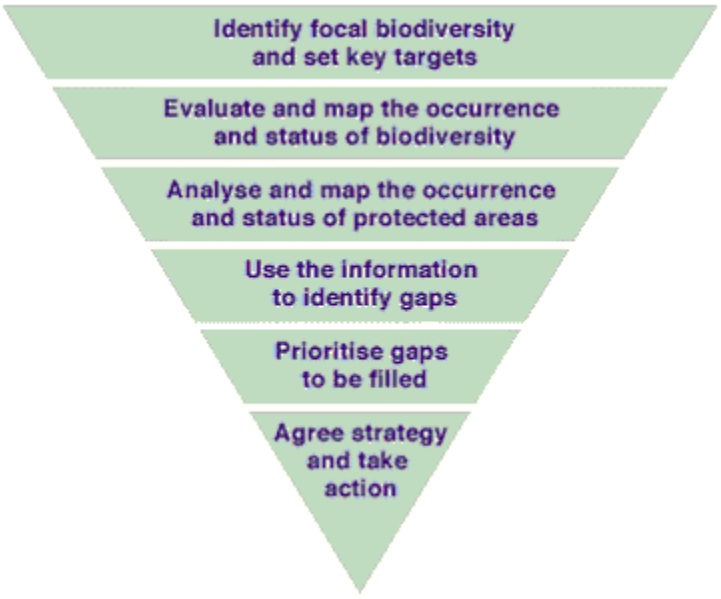
Gap analyses should be driven by a series of scientific, social and political principles. Representation: choose focal biodiversity across biological scales (species and ecosystems) and realms (terrestrial, freshwater, and marine) for the gap analysis to capture the full array of biodiversity in the protected area system.

- **Redundancy:** include sufficient examples of species and ecosystems in a protected area network to capture genetic variation and protect against unexpected losses.
- **Resilience:** design protected area systems to withstand stresses and changes, including future changes such as global warming.
- **Different types of gaps:** analyze representation gaps (biodiversity not found in any protected area), ecological gaps (biodiversity ecological needs not adequately addressed in protected areas) and management gaps (inadequate management or purpose).
- **A participatory approach:** collaborate with key stakeholders in decisions about protected areas. The CBD demands participation, in particular by directly affected communities, including indigenous and traditional peoples.
- **An iterative process:** review and improve the gap analysis as knowledge grows and environmental conditions change

1.2.3. Carrying out a gap analysis

However simple or complicated, cheap or expensive, all gap analyses should follow the same basic steps outlined below

Steps in conducting a gap analysis



Identify Key Targets

Most gap analyses focus on a representative sub-set of biodiversity as both indicators for the analysis and targets for measuring conservation success.

These **focal biodiversity elements (targets)** define species, communities and ecosystem to be evaluated (see Identify and map status and threats to biodiversity for more on indicators). They can range from simple targets relating to the area protected to more sophisticated targets of representation or endangerment, e.g.:

Area targets: most simply, agreeing an overall national area to be protected, such as the target of 10% of terrestrial area, developed by IUCN The World Conservation Union.

Coarse filter targets: protection of broad land or water types, such as ecosystems or their components (e.g. communities).

Fine filter targets: usually species of particularly threatened or endemic species that would not be captured by ecosystem targets. For example the European Union has used the concept of favorable conservation status of species and habitats. Targets ideally touch on both the **quantity** of land or water to be protected (to ensure sufficient populations or spatial extent of biodiversity) and its **distribution**, to ensure capturing the ecological and genetic diversity of a species or ecosystem. A simple target can be a decision to protect a stated proportion of remaining ecosystems or to maintain species. More sophisticated targets identify in detail what needs to be protected.

Status and Threats

Data, which are gathered to compare protected areas with species needing protection, ideally should include current distribution and biodiversity status and trends. Mapping all species is impossible so analysis relies on data for well-known species (e.g., birds); species representing particular habitats; and ecosystems. Mapping can be "coarse filter" (ecosystems, habitats) or "fine filter" (species and specialized habitats). Studies involve consolidating diverse data sets; using GIS; standardizing habitat classification; and predictive models. Indicators should represent as much of the total biodiversity as possible; provide adequate data; and be sympathetic to other stakeholders.

Asses and Map

A map of protected areas is needed to compare with maps of biodiversity. Basic data on protected areas are usually available at national level although spatial data and information on protected areas in other governance systems (e.g. private protected areas) may be lacking. Information about status of protected areas is generally less available, although studies and data on these are starting to emerge. Ideally, three pieces of information are helpful:

- **Distribution**
- **Protection status**
- **Management effectiveness status**

1.2.4. Identify Gaps

Various options exist for using data to identify gaps in protected areas networks.

- ***How to do the analysis***: there are three general options, depending on data quality and technical capacity:

    - **Without maps**: a lot of information can be obtained just by listing all the biodiversity elements not adequately represented in a protected area network is itself very useful.
    - **With maps**: more analysis is possible, including presence or absence from the protected area network and issues such as proximity, proportion of the population protected, and information about filling gaps.
    - **With maps plus software**: systematic, algorithm based approaches to selecting new protected areas have developed rapidly in the last few years.

- ***What to look for***: two key issues are important:

    - **What type of gap exists?** – i.e. whether gaps are complete (representation gaps) partial (ecological) or are gaps in objectives, governance types or effectiveness (management gaps). In management gaps, a protected area itself appears as a "gap" if it has not been implemented or well managed.
    - **What is the extent of the gap?** – i.e. are whole new protected areas necessary, or would a corridor between existing protected areas or an extension of an existing park be sufficient to address the representation or ecological gap? These questions are central to prioritizing what is needed most.

1.2.5. Prioritize Gaps

A gap analysis does not produce a precise plan, but rather a set of options that must be reconciled with other wants and needs. A good gap analysis will outline the priorities to be addressed and suggestions for action. Identification of ***priorities*** involves a number of different assessment steps:

- **Pressures and threats**: to existing protected areas and unprotected ecosystems – to identify urgent action and threats to the protected area network. Many threat assessment methodologies exist.
- **Opportunities for new protected areas**: some places may already be proposed protected areas or have a designation that could be converted into full protection status. Some community areas may be suitable as protected areas if supported by local stakeholders

- **Other opportunities for effective protection**: some gaps may be better filled by other sympathetic management than by creating protected areas in places where they are resisted or difficult to achieve.
- **Capacity to implement an expanded protected area network**: big plans are pointless without the capacity to make them happen. The CBD calls for national capacity assessment for managing protected area systems, including finance, resources, legal and policy framework, partners and skills

1.2.6. Agree Strategy

Once priorities are set, the gap analysis is complete. But it is only worth doing if it leads to developing one or more scenarios for expansion of the protected area network taking into account:

- **Size and location of new protected areas**: possibly with linking habitats (corridors and buffer zones). Decisions will be made on the basis of priorities, opportunities and capacity.
- **Management objectives for protected areas**: varying from strict protection to cultural landscapes with human communities. All have their role, but are not equally applicable to all conservation needs. IUCN identifies six categories of management objectives that can help to plan protected area networks.
- **Governance structures for the protected areas**: who owns or manages the protected areas – can influence if communities support or oppose protection. Most governments still rely mainly on state-owned protected areas, but many other options exist, including various forms of co-management, private protected areas and community conserved areas.
- **Opportunities for conservation outside protected areas**: biodiversity may be conserved outside protected areas, if management is effective and secure.
- **Opportunities to use restoration as a tool**: sometimes this will just mean encouraging natural regeneration. In other cases active intervention is needed.

A gap analysis cannot be carried out according to a rigid formula, but needs to be developed and modified depending on need, data availability, expertise and the type of species or ecosystems being considered.

1.3. *PA gap assessment*

1.3.1. Background

Environment protection and sustainable use of nature resources is one of the priorities of Albanian Government. Halting environment degradation, prevent losing important nature values,

reducing air and water pollution, control of soil erosion, stopping illegal forest harvesting are some of the main concerns the government has to deal with. Strengthening and enlargement of protected areas system is also an important priority and an appropriate tool to guarantee not only the preservation of natural values and biodiversity but even the sustainable use and economical development of these areas and communities living within or around them.

The protected areas include some of the most important natural values of the country from both the ecologic and economic point of view. Restructuring and enlargement of the protected areas system, development of zoning concepts and management plans and building and strengthening management capacities are part of the policy and strategy of the Ministry of Environment, Forests and Water Administration to improve protected areas management and achieve European Union standards and Government commitments on nature protection.
Protected areas are one of the greatest legacies that humanity can leave for future generations to ensure that our descendants have access to nature and to the material and non-material benefits they provide.

Protected areas are important because they:

- help maintain the diversity of ecosystems, species, genetic varieties and ecological processes, which are vital for support of life on Earth;
- provide vital services and goods from nature that support peoples' livelihoods, including water, clean air, climate and biological control, and aesthetic and spiritual values;
- have important intrinsic values as representative of the world's wilderness, as repositories of outstanding areas of living richness, for conserving scenic and cultural values of significance;
- are often the home of people with traditional cultures and irreplaceable knowledge of nature;
- may be models of sustainable use of resources which can be applied elsewhere; and
- have immense scientific, educational, cultural, recreational and spiritual value.

The protected areas exist in a rapidly changing environment. There are many issues, which represent both opportunities and threats to protected areas, stemming from climate change, invasive species, and fragmentation of the natural landscape, increasing urbanization and growing demands upon natural resources.

The National Biodiversity Strategy and Action Plan, understanding and appreciating the importance of Protected Areas for the preservation of biodiversity, have recommended expanding Protected Areas and strengthening their management as high priority objectives for the country. Establishment of the Ecological Network is a long process which will be accompanied by a programme to help understand the Ecological Network, its planning and

establishment, and to promote public participation and local community involvement in this process.

1.3.2. International developments

The Convention on Biological Diversity (CBD), that was signed by Albania on January 5th, 1994, considers the establishment and management of Protected Areas as one of the main mechanisms for biodiversity protection and ecological management. The Global Biodiversity Strategy and the Pan- European Strategy on Biological and Landscape Diversity (PESBLD), initiatives where Albania is actively participating, understanding and appreciating the importance of Protected Areas for the preservation of biodiversity, have recommended expanding Protected Areas and strengthening their management as high priority objectives for every country.
A European initiative to establish and develop an ecological network known as EECONET aims to protect the structure and complex ecological relationships of Europe. EECONET at the same time is an instrument to develop the priorities for action for each country.

Protected Areas and Sustainability

Protected areas contribute to sustainable development by:

1. Conserving soil and water in erodible areas;
2. Regulating and purifying water flow, especially by protecting wetlands and forests;
3. Shielding people from natural disasters, such as floods or storm surges;
4. Maintaining important natural vegetation on soils of inherently low productivity;
5. Maintaining wild genetic resources important to medicine or for plant or animal breeding;
6. Protecting species that are highly sensitive to human disturbance;
7. Providing critical habitat for feeding, breeding or resting of species that are harvested;
8. Providing income and employment through tourism.

Source: *Action Plan for the Protected Areas in Europe* (IUCN, 1993)

The establishment of the ecological network requires four main elements: (i) core area or bio-center to preserve ecosystems, habitats, species, and landscapes; (ii) ecological corridors or bio-corridors to improve the coherence of the biological systems; (iii) rehabilitation areas where damaged elements of the ecosystems, habitats, and landscapes have the need for repair or full recovery; and (iv) buffer zones which support and protect the ecological network from external impacts. Core areas/bio-centers must include areas and main characteristics, which represent biological diversity and landscapes. Bio-corridors are necessary to secure the coherence and functioning of the ecological network because they facilitate spreading and migration of species between bio-centers.

The seventh meeting of the Conference of the Parties to the CBD (COP 7), confirming that efforts to establish and maintain systems of protected areas and areas where special measures need to be taken to conserve biological diversity in line with Article 8 on in situ conservation and other relevant articles of the Convention, are essential for achieving, in implementing the ecosystem approach, the three objectives of the Convention and thus contributing to achieving the 2010 target contained in the Strategic Plan of the Convention and in the Plan of Implementation of the World Summit on Sustainable Development, and to achieve sustainable development and the attainment of the Millennium Development Goals, approved a specific Program of Work on Protected Areas.

The overall purpose of the programme of work on protected areas is to support the establishment and maintenance by 2010 for terrestrial and by 2012 for marine areas of comprehensive, effectively managed, and ecologically representative national and regional systems of protected areas that collectively, inter-alias through a global network/ contribute to achieving the three objectives of the Convention and the 2010 target to significantly reduce the current rate of biodiversity loss at the global, regional, national and sub-national levels and contribute to poverty reduction and the pursuit of sustainable development, thereby supporting the objectives of the Strategic Plan of the Convention, the World Summit on Sustainable Development Plan of Implementation and the Millennium Development Goals.

The Convention's work on protected areas takes into account the ecosystem approach. The ecosystem approach is the primary framework for action under the Convention, and its application will help reach a balance between the three objectives of the Convention. Multiple-use protected areas applied in an ecosystem approach context can, for example, help meet specific goals relating to conservation, sustainable use and the fair and equitable sharing of benefits arising from the use of genetic resources. The ecosystem approach provides a framework within which the relationship of protected areas to the wider landscape and seascape can be understood, and the goods and services flowing from protected areas can be valued. In addition, the establishment and management of protected area systems in the context of the ecosystem approach should not simply be considered in national terms, but where the relevant ecosystem extends beyond national boundaries, in ecosystem or bioregional terms as well. This presents a strong argument for and adds complexity to the establishment of trans-boundary protected areas and protected areas in marine areas beyond the limits of national jurisdiction.

The programme of work consists of four interlinked elements intended to be mutually reinforcing and cross-cutting in their implementation. The first and most important element of the program of work requires parties to take direct actions for planning, selecting, establishing, strengthening, and managing, protected area systems and sites

The first goal under this programme element is "To establish and strengthen national and regional systems of protected areas integrated into a global network as a contribution to globally agreed goals" aiming to established by 2010, terrestrially and 2012 in the marine area, a global network of comprehensive, representative and effectively managed national and regional protected area system is as a contribution to (i) the goal of the Strategic Plan of the Convention and the World Summit on Sustainable Development of achieving a significant reduction in the rate of biodiversity loss by 2010; (ii) the Millennium Development Goals – particularly goal 7 on ensuring environmental sustainability; and (iii) the Global Strategy for Plant Conservation.

As a matter of urgency, the parties should by 2006, take action to establish or expand protected areas in any large, intact or relatively not fragmented or highly irreplaceable natural areas, or areas under high threat, as well as areas securing the most threatened species in the context of national priorities, and taking into consideration the conservation needs of migratory species.

1.3.3. State of the game

In fulfilling its commitments and obligations to the CBD Albania has prepared "The National Biodiversity Strategy and Action Plan" (BSAP), developed in 1999, during the Biodiversity Enabling Activity phase I. The BSAP proposed the establishment of A Representative Network of Protected areas (RNPA) which represents the first step for the creation of the country's Ecological Network. Approximately 14% of the country's territory is included in the proposal, and it consists of the most important and representative ecosystems, habitats, and landscapes of Albania.

The Government of Albania in cooperation with all other relevant stakeholder has taken several actions to establish or expand protected areas in any large, intact or relatively unfragmented or highly irreplaceable natural areas, or areas under high threat, as well as areas securing the most threatened species in the context of national priorities, and taking into consideration the conservation needs of migratory species. Efforts are made to complete protected area system gap analyses at national and regional levels based on the requirements for representative systems of protected areas that adequately conserve terrestrial, marine and inland water biodiversity and ecosystems. These efforts encourage the establishment of protected areas that benefit local communities, including by respecting, preserving, and maintaining their traditional knowledge.

Specific efforts are made to integrate protected areas into broader land- and seascapes and sectorial plans and strategies such as poverty reduction strategies. There are some attempts to develop tools of ecological connectivity, such as ecological corridors, linking together protected areas where necessary or beneficial as determined by national priorities for the conservation of biodiversity. Continuous measures are taken to rehabilitate and restore habitats and degraded ecosystems, as appropriate, as a contribution to building ecological networks, ecological corridors and/or buffer zones.

Albania has gained a good experience in promoting collaboration between protected areas across national boundaries. It has established new TBPAs (Shkodra Lake) with adjacent countries and strengthened effective collaborative management of existing TBPAs (Prespa Lake and Ohrid Lake).

Recently, Albania has started to develop new management plans for protected areas, to better achieve the three objectives of the Convention. Attempts are made to ensure that protected areas are effectively managed or supervised through staffs that are well-trained and skilled, properly and appropriately equipped, and supported, to carry out their fundamental role in the management and conservation of protected areas.

Legal provisions are made to apply timely environmental impact assessments to any plan or project with the potential to have effects on protected areas, and ensure timely information flow among all concerned parties to that end,

Several studies are conducted to assess key threats to protected areas and develop and implement strategies to prevent and/or mitigate such threats and establish and implement measures for the rehabilitation and restoration of the ecological integrity of protected areas.

Government of Albania has made several efforts to develop policies, improve governance, and ensure enforcement of urgent measures that can halt the illegal exploitation of resources from protected areas, taking into account sustainable customary resource use of local communities.

There have been some efforts to establish policies and institutional mechanisms with full participation of local communities, to facilitate the legal recognition and effective management of local community conserved areas (communal forestry) in a manner consistent with the goals of conserving biodiversity and the knowledge, innovations and practices of local communities. Continuous efforts are made to engage local communities and relevant stakeholders in participatory planning and governance, recalling the principles of the ecosystem approach.

The government in cooperation with the local NGO community has continuously promoted an enabling environment (legislation, policies, capacities, and resources) for the involvement of local communities and relevant stakeholders in decision making, and the development of their capacities and opportunities to establish and manage protected areas, including community-conserved protected areas.

The NGO community has implemented specific plans and initiatives to effectively involve local communities, with respect for their rights consistent with national legislation and applicable international obligations, and stakeholders at all levels of protected areas planning, establishment, governance and management, with particular emphasis on identifying and removing barriers preventing adequate participation.

In recent years a lot of work has been done to identify legislative and institutional gaps and barriers that impede the effective establishment and management of protected areas, and harmonize sectorial policies and laws to ensure that they support the conservation and effective management of the protected area system.

There have been some efforts to identify and foster economic opportunities and markets at local, national and international levels for goods and services produced by protected areas and/or reliant on the ecosystem services that protected areas provide, consistent with protected area objectives and promote the equitable sharing of the benefits.

In the framework of the National Capacity Self-Assessment Programme (NCSA), Albania is completing national protected-area capacity needs assessments, and establishing capacity-building programmes on the basis of these assessments including the creation of curricula, resources and programs for the sustained delivery of protected areas management training. Efforts are made to establish effective mechanisms to document existing knowledge and experiences on protected area management, including traditional knowledge and identify knowledge and skills gaps as well as exchange lessons learnt, information and capacity-building experiences with other countries and relevant organizations, through the Clearing-house Mechanisms and other means.

The NCSA is also assessing needs for relevant technologies for protected area management involving local communities and stakeholders such as the, research institutions, non-governmental organizations and the private sector, and encouraging development and use of appropriate technology, including technologies of local communities, for habitat rehabilitation

and restoration, resource mapping, biological inventory, and rapid assessment of biodiversity, monitoring, in-situ and ex-situ conservation, sustainable use, etc.

As part of its obligations, Albania provides regular information on protected areas financing to relevant institutions and mechanisms, including through national reports under the Convention on Biological Diversity, and to the World Database on Protected Areas. Since 1993, Albania is benefiting from international funding programmes to support implementation of national systems of protected areas in developing countries and countries with economies in transition.

After 1990s, there have been many efforts to establish and strengthen strategies and programmes of education and public awareness on the importance of protected areas in terms of their role in biodiversity conservation and sustainable socio-economic development, and targeted towards all stakeholders.

Efforts are made to develop mechanisms for constructive dialogue and exchange of information and experiences among protected-area managers, and between protected area managers and local communities and their organizations and other environment educators and actors. Recently there is a high pressure to incorporate the subject of protected areas as an integral component of the school curricula as well as in informal education.

Since some years, the Ministry of Environment, Forests and Water Administration in close collaboration with specialized institutions is implementing a national programme to monitor and assess the status and trends of biodiversity within protected area systems and sites.

Albania participates in the World Database on Protected Areas maintained by UNEP-WCMC, and the United Nations List of Protected Areas and the State of the World's Protected Areas assessment process.

The Government of Albania is promoting interdisciplinary research, to improve understanding of the ecological social and economic aspects of protected areas, including methods and techniques for valuation of goods and services from protected areas, and encouraging studies to improve the knowledge of the distribution, status and trends of biological diversity.

Efforts are made to promote the dissemination of, and facilitate access to, scientific information from and on protected areas including through the clearing-house mechanism, and develop and strengthen working partnerships with appropriate organizations and institutions which undertake research studies leading to an improved understanding of biodiversity in protected areas.

1.3.4. Recent developments

The nature protection inside the PA's system is being evaluated as an important instrument to preserve the biodiversity values in the country. The strengthening and enlargement of the protected areas system, as the basis of the Ecologic Network of the country, is considered as one of the most important objectives of the Program of Work and Action plans of the Ministry of Environment, Forest and Water Administration,. In this framework it is aimed, as a short term objectives that the protected areas will cover 15 % of the territory (doubling their actual size) and a long term objectives (year 2015) about 20 % of the overall country's surface. The bases for the enlargement of the protected area system are the proposals made in the BSAP refined and improved by considering recent developments and natural processes.

So, on November 2005, the Council of Ministers approved three Decisions related to the enlargement of the protected areas system: the enlargement of "Butrinti's National park, the designation of Nature Managed Reserve "Shkodra Lake" and the designation of the Protected Landscape "Buna River -Velipojë", National park "Mali i Dajtit", Protected Landscape "Mali me Gropa-Bize-Martanesh", National Park "Divjake-Karavasta" and National Park "Shebenik-Jabllanice", increasing significantly the size of protected areas in Albania.

Considering their international significance, the Albanian Government, decided to propose to the Ramsar Convention to include the areas of "Shkodra Lake" and "Buna River" in the list of Ramsar sites, as internationally important areas, especially for the water birds. On the February 2nd, 2006 the Ramsar Convention's Secretariat delivered to the Ministry of Environment, Forests and Water Administration the respective certificate. The process has started already and is going on in some other areas.

The protected areas do not only preserve and protect biodiversity but they are also a source of living resources and incomes to local communities. The proposed strategy for strengthening and enlargement of protected areas system does not mean that the man and his interests are excluded from the 15% of the country's territory designated to be covered as Protected Areas. Rather than dictating the exclusion of economic, social, and recreation activities, Protected Areas are zones where this activity is sustainable and controlled, and developed in accordance with the needs for the protection of the ecological integrity of the ecosystems, habitats, landscapes, and survival of the plant and animal species.

As mentioned above, the MEFAW has already started the process of strengthening and enlargement of the PA's system and the establishment of the PA's Representative Network according to the proposals of the BSAP, international commitments and obligations and the requirements of the law on protected areas, relying on new concepts for their administration and management. The new concepts of management for the protected areas are based on the integration of nature protection measures with sustainable use of natural resources from local communities and all concerned stakeholders following the principle "Living in a protected area is not a limitation but an opportunity". These new concepts consider local communities and stakeholders as an important part of their integrated management process. According to these new concepts, the designation of new protected areas does not include only remote forest and pasture areas, that are difficult to access and where there is no human impact, but even settlements and development areas with a good tradition in the sustainable use of natural resources and important development activities that have contributed to shape special features of the natural landscape.

Recognizing the biodiversity ecological values and putting them under a protection status generates a new development for all the residents that live and develop their social-economic activities in these areas. Nowadays, differently from the past, when the "Protected Area" was considered as an "off limit" untouched area where everything was prohibited, by applying the zoning concept local stakeholders became important actors in the integrated protection and sustainable management of natural resources. The process of enlarging the protected areas system will be focused on re-viewing and improving designations for these main management categories: "National Park", "Managed Natural Reserve" and "Protected landscape". The process will consist in the enlargement of the existing areas for these categories and the integration of other protected areas into them by changing their protection status.

Preparation of the management plans for the Protected Areas of Albania is considered as a high priority; so far, only 4-5 Protected Areas have new management plans or plans under preparation. This should be a high priority activity not only for the responsible authorities such as the MEFWA and the administration of protected areas, but also for the scientific and research institutions and specialized NGOs in the country which have the necessary expertise for the preparation of the management plans.

Taking into account that Albania's Protected Areas are part of the European natural heritage, it is the responsibility and obligation of the international organizations to provide support for the preparation and implementation of the existing and proposed management plans. The MEFWA must help to create the conditions to attract more of these organizations to work in Albania.

Establishment of the Ecological Network is a long process which will be accompanied by a programme to help understand the Ecological Network, its planning and establishment, and to promote public participation and local community involvement in this process. The second step required for the establishment of the Ecological Network after RNPA approval will be the establishment of the bio-corridors for linking the various Protected Areas with each other. A long-term objective of this process is that Protected Areas cover 20% of the country's territory by 2020.

The establishment of the Ecological Network requires a functioning administration and management authority for protected areas. In line with the efforts to strengthen and enlarge the protected areas system measures must be taken to build and strengthen capacities of respective management structures to fulfill their duties and responsibilities.

1.3.5. Assessing the protected area system

On assessing the protected area system level design it is generally agreed that layout and configuration of the PA system optimizes the conservation of biodiversity. The PA system adequately protects against the extinction or extirpation of any species and it adequately represents the full diversity of ecosystems within the region. The PA system consists primarily of exemplary and intact ecosystems and it maintains natural processes at a landscape level. However, the system design need to be improved in order to address issues related to the protection of transition areas between ecosystems, sites of high biodiversity and high endemism and the full range of succession diversity.

Protected Areas policies clearly articulate a vision, goals, and objectives for the PA system and there is a demonstrated commitment to protecting a viable and representative PA network. PA managers agreed that there is ongoing research on critical PA-related issues and the PA system is periodically reviewed for gaps and weaknesses. However, they consider that there are no restoration targets for underrepresented and/or greatly diminished ecosystems. According to their judgment there is no comprehensive inventory of the biological diversity throughout the region and there is no assessment of the historical range of variability of ecosystem types in the region. Improvements should be made regarding issues like the adequate area of land protected to maintain natural processes at a landscape level, development and implementation of an effective training and capacity building programs for PA staff, and evaluation of PA management, including management effectiveness.

Regarding policy environment there is a general agreement that PA-related laws complement PA objectives and promote management effectiveness and national policies promote sustainable land management. National policies foster dialogue and participation with civic and environmental NGOs as well as a widespread environmental education at all levels. At the other hand, there is insufficient commitment and funding to effectively administer the PA system. Environmental protection goals are not fully incorporated into all aspects of policy development and there is a low level of communication between natural resource departments. Improvements should be made towards effective enforcement of PA-related laws and ordinances at all levels and adequate environmental training for governmental employees at all levels.

1.4. *Assessment of protected area management*

1.4.1. Background

Historically, the mandate for protected area management was within the Directorate General of Forestry and Pastures (DGFP). The new changes on the Government structures, after the general political elections of July 3rd, 2005, reallocated several responsibilities of the former DGFP to the new Ministry of Environment, Forests and Water Administration (MEFWA).

According to the Law No. 8906 dated 6 June 2002 "On Protected Areas", the management of forests and forest property, of waters and water property, as well as other properties in state ownership located inside a protected area shall be performed by the administration of the protected area.

Decree "On the administration of protected areas", defines that the State Authority for the administration of protected areas was DGFP (now with the new government structure it is the MEFWA (Directorate for Nature Protection Policies), which should establish separate administration for protected areas. The decree also defines the main duties and responsibilities of the administration. Following this decree the Directorate General of Forests and Pastures issued respective orders for the establishment of the separate administrations for 11 National Parks and 11 Managed Nature Reserves.

An important new part of the PAs Management structures is the Management Board, which is currently under development. It provides the setup for a participatory management approach including all relevant technical structures as well as governmental structures at regional and local level. Also other stakeholders such as non-governmental organizations and business associations are considered member of the board.

The existing administration of protected areas lacks in both number and capacities of personnel. All the staff working in protected areas management is with a background of forestry. Lack of competitive and advantageous salary conditions influences the quality of staff at the expert level. Staffing of posts in the public service is compromised and professional requirements have been reduced. The lack of experts in such field as economic and social aspects of biodiversity and related impacts, and incentives is a specific problem.

1.4.2. Assessment of management effectiveness of protected areas

The majority of protected areas is suffering from pressures and is under continuous threats in the future. The main pressures and threat include forest harvesting, illegal building or occupying of area, grazing, hunting, NTFP collection, tourism and recreation activities, waste disposal, semi natural processes (including mainly insects and diseases but also fires), costal erosion, waste water treatment, fires and mining.

The most problematic are Valbona NP, Lura NP, Velipoja PL, and Martanesh PL. The situation looks better in some areas like Tomori NP, Oroshi MR and Thethi NP but in general this situation is because these areas, mostly forest areas, are located in very remote areas difficult to access. Also the graph shows that the main threats are hunting and grazing followed by tourism activities and fires. Coastal erosion appears to be a severe threat for protected areas along the coast.

There was a general consensus in the discussions that some of the actual pressures (illegal harvesting, hunting, grazing, fires, etc) can be reduced in the future (threats) as result of a better performance of the protected area administration in controlling activities within protected areas and improving communication with local communities. But some other pressures (tourism and recreational activities, illegal building) will continue to threat the protected areas in the future since they could not be properly controlled.

Analyzing results of the different groups of protected areas we see some little difference in the severity and importance of pressures and threats.

Group 1, consisting of relatively large areas covering different type of ecosystems, has huge problems with hunting and grazing.

Group 2, consisting of relatively small forest protected areas, has problems not only with hunting and grazing but also with tourism activities and fires that are damaging their natural resources. For this group, the collection of NTFP is an important pressure and threat.

Group 3, consisting mainly of wetland ecosystems, apart having severe problems with coastal erosion, are suffering also from hunting, tourism activities (which in this case are not directly related to the protected area but to the beaches) and waste disposal.

The assessment about planning of protected areas shows that in general there is a secure legal protection for protected areas and the PA objectives, siting, layout and design of protected areas optimizes the conservation of biodiversity. Analyzing the results of answers given regarding planning in protected areas it is evident that there are severe problems with boundary demarcation and staffing of protected areas. Other problematic issues include support from local communities, disputes regarding land tenure and user rights, conflicts with local communities, zoning of protected areas and links with other protected areas.

The situation of inputs to protected area management seems really critical especially to infrastructure and finance inputs. Although the level of personnel is not adequate, their skills and performance is good and there are attempts to improve their capacities. There is a general lack of any kind of infrastructure including transportation and personnel facilities and equipments. Also, financing to protected areas seem to be an enormous problem since there are no secure funding for the future and proper financial practices are not in place. Last but not least, protected area personnel lack communication and information infrastructure, especially the means and tools necessary for data collection and processing.

There is a huge gap in management planning. Only 3 PA have a management plan and other 2 are working on it. The others have no management document. Also an analysis of, and strategy for addressing, PA threats and pressures is missing. There is no full inventory of natural and cultural resources in all protected areas. Protected areas administration units do not have a well detailed yearly working plan for reaching management objectives.

Research, monitoring and evaluation is not a priority for the PA managers and it is not in line with the protected area management objectives. Although PA managers dedicate a lot of time and efforts for accurately monitoring and recording the impact of legal and illegal uses of the PA, they feel that critical needs for scientific research and monitoring are not clearly identified and prioritized according to the PA management objectives. Access to scientific research and advice is mostly depending on personal connections. Generally the results of monitoring and scientific research are neither used nor included in the management planning.

The main task of PA managers is law enforcement and they spent a lot of time and resources in this regard. They also put some efforts on site restoration and provide information on the importance and values of PA natural and cultural resources. It is evident that in general PA managers do not deal with infrastructure development and research and monitoring. Also they have problems with resource inventory and planning as well as visitor management.

Although the main activity of PA managers is law enforcement, illegal activities within the PA are difficult to monitor since PA managers lack transportation infrastructure, especially in large PA. Generally PA managers are under pressure to unduly exploit PA resources which market value is high (tourism development, mining, grazing). Traditional uses of PA natural resources are not considered as considered as a factor of vulnerability to PA.

According to PA areas managers, protected areas and their natural and cultural resources vulnerability is influenced mostly by the following factors

- The areas are easily accessible for illegal activities.
- There is a strong demand for vulnerable PA resources (illegal harvesting of valuable trees, poaching, grazing)
- Recruitment and retention of employees is difficult considering difficult working conditions and not appropriate remuneration and some time employment is related to political changes

1.5. *Addressing gaps in protected areas*

1.5.1. Key issues

The assessment of protected areas in Albania has identified some key issues that are briefly summarized as follows.

- **Considerable progress has been made in the establishment of protected areas but significant gaps remain**

While the number of protected areas has tripled over the past 20 years there remain serious gaps in coverage of many important species and ecosystems. Marine biodiversity is of particular concern as marine protected areas cover only 0.5 % of the world's global marine surface (UNEP-WCMC and IUCN, 2003). Addressing these gaps requires the expansion of existing, and the strategic creation of new, protected areas while ensuring the connectivity of suitable habitat between them.

- **Protected Areas face many challenges and the management effectiveness of protected areas must be strengthened**

Protected areas face many challenges in the 21st century; particularly those associated with global change factors. These include: increased population growth often associated with increased demands for the use of natural resources; climate change; decentralization and democratization processes; and new forms of protected areas governance.

Managers of protected areas and other primary stakeholders often do not have sufficient knowledge, skills, capabilities and tools to effectively respond to the challenges posed by global change. Enhanced capacity building is essential to address this and is needed at a range of levels, including for protected areas agencies, park managers and key stakeholders. The skills and competencies now required are more specialized and broader than in the past requiring a range of innovative approaches.

The management of many protected areas is not effective, suffering particularly from inadequate financial resources and limited management capacity. Although a number of models have been developed for assessing management effectiveness, these need to be more widely applied and linked to field action.

- **Protected Areas play a vital role in biodiversity conservation and sustainable development**

Protected areas are vital for both biodiversity conservation and sustainable development. The importance of protected areas in contributing to Millennium Development goals, particularly those relating to environmental sustainability and poverty alleviation, is really high. There is a need for increased recognition of the crucial role of protected areas in achieving sustainable development objectives, particularly as many key stakeholders still see protected areas as a barrier to their activities and aspirations.

- **Local Communities have to be better involved in protected areas**

local communities have to be more effectively involved in protected areas and that, specifically, their rights have to be more appropriately respected. The involvement of local communities in protected area management has increased during the past decade but there is still a long way to go. This is particularly important as local communities live in most high biodiversity regions in the country. It is acknowledged their vital role in the achievement of sustainable development and is also recognized local communities knowledge as an important element in managing natural landscapes and resources, specific sites, species, cultural and traditional values.

- **There is a need to apply new and innovative approaches for protected areas, linked to broader agendas**

There is a need to consider and apply a range of models of protected areas, including those established by Local Communities (Community Conserved Areas), as well as those established and managed by the private sector. Protected areas are also increasingly being considered in the context of the wider landscape, ecological networks and trans-boundary protected areas. Such approaches are important as many protected areas have traditionally been cut off from the economic and social activities of the surrounding land and sea. Movement of species, nutrients and other environmental flows are not limited by protected area boundaries and socio-economic activities occur at the broader ecosystem level. Accordingly, there will be an increasing need to apply these models in the future. These initiatives also provide practical and important insights on how to apply the ecosystem management approach endorsed by the Convention on Biological Diversity.

- **Protected Areas require increased financial investment**

The financial resources available for protected areas are inadequate. Under-investment by government and others in protected areas means that these areas are often failing to meet their

conservation and social objectives. Inadequate human and financial resources result in many protected areas lacking effective protection and management. The challenge is to achieve a major boost in investment in protected areas and to develop more sustainable methods of protected area financing.

1.5.2. Actions addressing gaps in protected area system

The proposed actions for addressing gaps in protected areas system are based mainly on the proposals of the National Biodiversity Strategy and Action Plan and on many years of experience in the field of nature conservation in Albania and on a continuous participatory process of discussion and consultation with various experts. These actions aim to ensure adequate legal protection and appropriate management for the most valuable and representative natural and semi-natural ecosystems, habitats and landscapes in the country. These actions are important for building the Albania Ecological Network and fulfilling the commitments and obligations of the Albanian Government toward the Convention of Biological Diversity.

Actions for strengthening and enlargement of the protected areas system include the following:

- Review and reclassify a number of the existing protected areas based on the size of each protected area and its role and importance in a broader national and regional context. Changes in the management category and protection status should be applied to several existing protected areas.
- Reclassify existing Strict Nature Reserves (Category I). Actually they include some areas of important and untouched natural habitats. In order to provide for a better preservation of their natural values they should be included as core zones in areas designated to other management categories (National Parks or Protected Landscapes). So, the size of protected areas under this category (Category I) will decrease significantly till 2010. The establishment of the ecological network will require the designation of some additional areas as Strict Nature Reserves (For example, some Nature Monuments (Category III) are proposed to become Strict Nature Reserve (Category I).
- Significantly enlarge the size of National Parks (terrestrial and marine). Under this action, adjacent existing protected areas would be combined to include new areas recently identified as appropriate for protection under this category. Although the number of National Parks would decrease from 11 to 7, the total area designated under this category would increase significantly, going from 56’440 ha to 311’694 ha.
- Establish, for the first time in Albania, protected areas in our seas (Marine National Parks, Marine Nature Reserves, and Seascape Protected areas) as well as along rivers (Drini valley or Vjosa Valley).
- Extend the boundaries of existing Areas of Habitats and Species Management (Managed Nature Reserves) in order to improve their management and include other important habitats and ecosystems and improve species management and preservation. The size of areas designated under this category will slightly increase till 2010, from 41’128 ha to 52’935 ha.
- Expand the Landscape/Seascape Protected Areas (Category V). The number of protected areas under this category would increase from 3 to 17, with a total area under this category increasing from 49’611 ha to 119’088 ha.

- Greatly enrich the current system of protected areas in terms of ecosystems and habitats. The protected area system in Albania should include all types of habitats and ecosystems that represent our country's nature and biodiversity.
- Develop management plans for protected areas and strengthen capacities for their administration. In order to be successful and provide a better preservation and management of natural values and biodiversity, the process of strengthening and enlargement of protected areas system must be accompanied by the development of management plans for all the protected areas and strengthening the management capacities of the protected areas managers.

Table 1: Plans for improving the Protected Areas system in Albania

No	Protected Areas Management Categories	June 2005		2010		2015	
		Area Ha	Area %	Area Ha	Area %	Area Ha	Area %
1	Strict Natural Reserve	14500	0.51%	1800	0.06%	6900	0.24%
2	National Park	56440	1.96%	311694	10.84%	311694	10.84%
3	Natural Monument	3490	0.12%	200	0.01%	200	0.01%
4	Areas of Habitats and Species Management	41128	1.43%	52935	1.84%	64235	2.23%
5	Landscape/Seascape Protected Areas	49611	1.73%	119088	4.14%	187588	6.53%
6	Protected area with managed resources	18200	0.63%	18200	0.63%	18200	0.63%
	TOTAL	***183369***	***6.38%***	***503917***	***17.53%***	***588817***	***20.48%***

1.5.3. Recommendations for improving the situation

In order to improve the PA management it is necessary to further improve legal framework and national policies on nature conservation. There is a need to identify and allocate resources for the preparation of management plans for protected areas as well as strengthening the PA administration and building capacities. In order to face increasing challenges and shortcomings in financial resources the re is need to explore and establish economically sustainable models for protected areas management. Continuous efforts should be made to address issues like participatory management, involvement of local communities, environmental information and education and public awareness programs on the importance of PA.

The recommendations given above, as well as all the result of the RAPPAM assessment will be further elaborated in cooperation with the MEFWA in order to prioritize recommendations, develop an action plan, and identify agencies or departments who will be responsible for implementing the changes, and ensuring that the financial, technical, administrative, and political support is sufficient to make these changes. MEFWA has already expressed their commitment to take actions for improving the effectiveness of protected area management.

2. The situation on marine biodiversity conservation and MPAs in Albania

2.1. *Background on marine conservation in Albania*

Albania is distinguished for its rich biological and landscape diversity. The high diversity of ecosystems and habitats offers rich habitats for a variety of plants and animals. Of the estimated 3,200 species of vascular plants, 27 are endemic and 160 sub-endemic species.

Coastal lagoons and large lakes inside the country are important areas especially for resident and wintering migratory birds. There are about 70 waterfowl and water bird species among which some are threatened such as the Dalmatian Pelican (*Pelecanus crispus*) and the Pygmy Cormorant (*Phalacrocorax pygmeus*).

There are few studies and surveys concerning the marine environment of Albania, but they show already the importance of seagrasses meadows in particular *Posidonia oceanica,* coralligenous formations and the presence of numerous benthic and pelagic species such as fish, invertebrates or marine mammals and occasionally the Mediterranean Monk Seal.

At the international level, Albania is signatory of numerous conventions and agreements, such as the Convention on Biological Diversity (CBD), the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention), the Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention), the Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention), the Convention on the Conservation of World Cultural and Natural Heritage (UNESCO) etc.

At the regional level, Albania is party to the Convention for the protection of the marine environment and the coastal region of the Mediterranean and participates to numerous programmes developed under the convention, such as the Coastal Area Management Program (CAMP of UNEP/MAP, 1996). This programme has assisted in the coastal zone management and identification of suitable sites for conservation such as Sazani, Karaburuni, Porto Palermo, Ksamili and Ftelia, but further action steps are not yet undertaken.

At the national level, the Ministry of Environment, Forests and Water Administration (MEFWA) is responsible for the protection of environmental values and in particular of protected areas. The law No. 8906 of 2002 regulates protected areas (declaration, preservation, administration and management) and activities in protected areas such as tourism information and education.

Albania includes about 13% of its territory under conservation status, but there are no marine protected areas (MPA).

The present report corresponds partially to the step 1 recommended by the CBD to develop a representative network of marine protected areas. The identification of sites of interests, even if based on an incomplete knowledge of the marine environment represents a first phase in the process.

At the present stage, the declaration as Marine Protected Areas of the most important of the selected sites is recommended, with the proper legislation, management team and budget.

2.2. *Existing coastal protected areas in Albania*

Currently, there are no marine protected areas in Albania. The existing coastal protected areas, including mainly coastal lagoons, river mouths and deltas are supposed to imply also marine habitats close to them, although these marine habitats have never been stated and managed as MPAs. Legally, they were subjects of the IUCN categorization, (accepted and applied in Albania) and they were supposed to be managed under the same categorization as stated for the coastal area.

Table 2: List of coastal Protected Areas in Albania

National PA Category	Name of PA	District	Approval	Area (ha.)
National Park (IUCN category II)	Butrinti	Saranda	VKM[7] nr. 693, datë 10.11.2005	8,591
	Divjakë-Karavasta	Lushnja	VKM[13] nr.687,datë 19.10.2007	22,230
Managed Nature Reserve (IUCN Category IV)	Kune	Lezha	07.07.1940, 1977-Rreg.MB**	800
	Vain	Lezha	07.07.1940, 1977-Rreg.MB**	1,500
	Karaburuni Peninsula	Vlora	Urdhër MB, 22.02.1968, 1977**	20,000
	Pishë Poro	Vlora	Urdhër MB, 1958, 1977-Rreg.MB**	1,500
	Patok-Fushë Kuqe	Kurbini	Urdhër MB, 1962, 1977-Rreg.MB**	2,200
	Rrushkull	Durresi	Rreg.MB 1977**,Urdhër MB nr.2,datë 26.12.1995	650
Protected Landscape Areas (IUCN Category (V)	Vjosë-Nartë	Vlora	VKM[6] nr.680,datë 22.10.2004	19,738
	River Buna-Velipojë	Shkodra	VKM[7] nr.682,datë 02.11.2005	23,027

Notes:
VKM - Decision of Ministerial Council
Rreg.MB - Regulation of the Ministry of Internal Affairs
Urdhër MB - Order of the Ministry of Internal Affairs

As of February 2010, there are no marine PAs; one MPA is in the process of being established with a draft decision for the proclamation of the Karaburuni Marine Protected Area having been submitted to the MEFWA. It is expected to be approved by the Council of Ministers.

Although a considerable coastal part of Albania is covered by the protected areas, the real status of protection is still week for most of them. Main reasons for this situation are related to the increased human impact through uncontrolled urbanization and tourism development, water pollution, deforestation, illegal and uncontrolled fishing and hunting etc. Week legal and institutional frame, inappropriate implementation of the environmental laws and regulations, law level of public awareness and unsolved land property problems are additional reasons for the inappropriate protection of coastal areas in Albania.

However, the strengthening and enlargement of the protected areas system is considered as one of the most important objectives of the Program of Work and Action Plans of the Ministry of Environment, Forest and Water Administration. In this framework it is aimed, as a short term objectives that the protected areas will cover 15% of the territory (currently about 10%) and a long term objectives (year 2015) about 20% of the overall country's surface. The bases for the enlargement of the protected area system are the proposals made in the BSAP refined and improved by considering recent developments and natural processes.

Claim and management of Marine Protected Areas fall under the objectives mentioned above. Aiming to join the EU structures, Albania would need to improve its environmental quality, too. Regarding coastal and marine protected areas, the implementation of Marine Strategy Framework Directive (2008/56/EC) and Water Framework Directive (2000/60/EC) would be important for meeting the international standards and requirements.

In the following there are some basic data about existing coastal protected areas in Albania.

Buna River - Velipoja

Status: Managed Nature Reserve and Ramsar Site
IUCN category: IV
Site ID: 11662
Year: 1958 (Velipoja reserve: 700 ha);
2005 (stated Ramsar site: Shkodra Lake - Buna River – Velipoja)
Total area: 23,027 ha

Kune - Vaini

Status: Managed Nature Reserve
IUCN category: IV
Site ID: 11661
Year: 1960 1940, 1977
Total area: 2300 ha

Patok – Fushe Kuqe

Status: Managed Nature Reserve
IUCN category: IV
Site ID: 11663
Year: 1962, 1977
Total area: 2200 ha

Rrushkulli

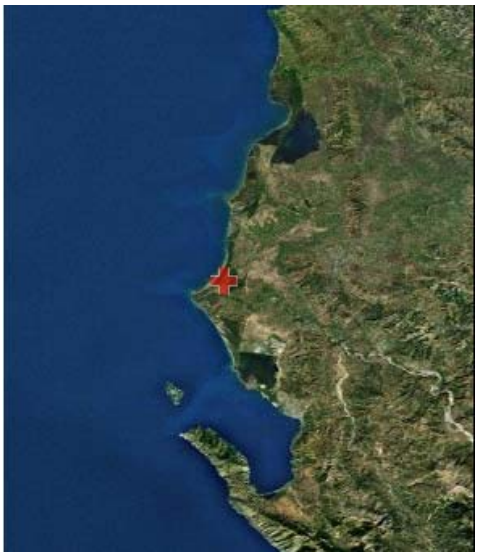
Status: Managed Nature Reserve
IUCN category: IV
Site ID: 11664
Year: 1955, 1977, 1995
Total area: 650 ha

Divjake - Karavasta

Status: National Park and Ramsar site
IUCN category: II
Site ID: 4679
Year: 1966, 2007 (Divjaka forest as National Park: 1250, ha 22.230 ha)
1995 (Wetland complex as Ramsar site 20,000)
Total area: 22.230 ha

Pishe Poro/ Fier

Status: Managed Nature Reserve
IUCN category: IV
Site ID: 11665
Year: 1958, 1977
Total area: 1500 ha



Vjosë – Nartë

Status: Protected Landscape
Year: 2004
Total area: 19,738

Narta Lagoon
Status: Managed Nature Reserve
IUCN category: IV
Year: 2004
Total area: 2900 ha

Karaburuni peninsula

Status: Managed Nature Reserve
IUCN category: IV
Site ID: 12446
Year: 1968, 1977
Total area: 20.000 ha

Butrinti

Status: National Park
IUCN category: II
Site ID: 181966
Year: 2005
Total area: 8.591 ha

3. Analyses of biodiversity, natural and cultural values of the proposed potential MPAs

3.1. *Synthesis of knowledge on biodiversity of coastal and marine areas of Albania*

The Albanian coastal area, in South-East of the Adriatic Sea and North-East of the Ionian Sea has a length about 470 km. Territorial waters extend 12 nautical miles offshore and include a wide range of water depths and substrate conditions.
River mouths and deltas, lagoons system, abandoned riverbeds, marshes, sandy beaches, dunes covered with vegetation and dense forests are present in the Albanian littoral.
According to geological studies, geomorphologic classification of the Albanian coastal area consists of two principal major zones:

a) Adriatic Coastline of Peri-Adriatic Depression in the central and northwestern part of Albania. Adriatic coastal line from Vlora in the south up to Drini Bay in the north, have a marine accumulation flattened littoral, a marine erosion coast and submerged areas with marine ingressions toward the mainland, but in few areas there is a cliff coastline, too. Accumulative areas represent main part of the coastline. Marine Quaternary littoral deposits are presented by fine, medium, and coarse gray-white, gray-yellow sand, salty clay and mud interbeds.

Figure 1: Different habitats along Adriatic coast of Albania (a- Rrushkulli; b-Blown Sand, known as *Rana e Hedhun*, c-Orikumi Lagoon; d – Lalzi, sand dunes (photos: Kashta, Beqiraj)

In these accumulative coastline areas there are some relatively small erosion sectors. The capes of Rodoni, Palla, Lagji and Treporti, composed by molasses bedrocks of the littoral anticlines of the Periadriatic Depressions represent the erosion configurations of the Albanian Adriatic sea coastline.

b) Erosion coastline of Ionian tectonic zone in the southwestern part of Albania. The Ionian coast, from Karabauruni Peninsula to Stillo Island on the Greek border, is generally high and dominated by cliffs. Along the Ionian coast erosion prevails. This coastal zone has spectacular cliffs, grottoes, caves, hillsides, harbours, bays and some of the country's most intact natural areas.

Figure 2: Different habitats along Ionian coast of Albania; a: Palasa beach; b: Palasa creek; c: Himara – Llamani Bay; d: Dhermi – Pirates Cave (photos: Kashta)

3.1.1. Knowledge on biodiversity of coastal habitats, flora and fauna

Marine ecosystems and coastal wetlands of Albania are rich in habitat typologies, animal and plant communities and species. They represent an important part of nature heritage not only for the country itself but also for the Mediterranean region as a whole (National Report on Marine and Coastal Biodiversity, Tirana, 2002).

Along the coast there still exist more than 390 km^2 of transitional wetland areas that make about 50% of the wetlands for the whole Albania. They are distinguished for the richness of breeding and refuge habitats for flora and fauna, especially for fishes and wintering of migratory and globally threatened birds. Along the Albanian cost there are situated three wetland complexes of International Importance (Ramsar sites): Butrinti, Karavasta Lagoon and Lake Shkodra - River Buna. There are also 7 sites of Managed Nature Reserve (ca. 300 km2) (Karaburuni/Vlora, Kulari, Kune-Vaini, Patoku - Fushe Kuqe, Pishe Poro/Fieri, Pishe-Poro/Vlora, Rrushkulli, Velipoja) on the Adriatic coast. The ancient town of Butrinti is also an Unesco site, as a World Cultural Heritage.

Albanian coast and its wetlands are important habitats for fishing and aquaculture. After FAO Yearbooks of Fishery Statistics, in yr. 2005 fishery production increased to 5275 t (primarily sea fish), of which 3802 t from capture and 1473 t from aquaculture
(ftp://ftp.fao.org/FI/STAT/summary/default.htm).

3.1.2. Coastal vegetation

The vegetation is represented mainly by the evergreen shrubs and partially by deciduous shrubs; the species of last one often have thorns. Along the Adriatic coast, mainly in Divjaka (Lushnja) and Pishe Poro (Vlora) grow up Mediterranean pine forests.

Evergreen Mediterranean shrubs of macquis are composed mainly from the species: *Arbutus unedo, Myrtus communis, Pistacia lentiscus, Erica arborea, Quercus coccifera, Spartium junceum, Phyllirea* spp., etc.

In the Southern region, it can be mentioned also special associations of deciduous shrubs, such as those with *Nerium oleander, Pistacia terebinthus, Spartium junceum and Euphorbia dendroides*. In the Ionian Riviera there grows up the Vallonea oak (*Quercus ithaburensis* subsp. *macrolepsis*), a rare and endangered species with high economical values, which belongs to the Mediterranean forestry and shrubby belt.

In waste areas around the coastal lagoons, in channels, ponds or freshwater marshes grow up reed beds composed mainly of *Phragmites australis, Typha latifolia* and *Scirpus* sp. diverse.

The bottom of the lagoons is often inhabited by the submersed species, dominated by *Zostera noltii* and *Ruppia cirrhosa*, mixed also with macroalgae like *Chaetomorpha linum, Valonia aegagropila, Enteromorpha intestinalis* and *Ulva laetevirens*.

In the coastal wetlands and dunes there grow up halophytes, psamophytes and other brackish and freshwater associations, represented by *Ammophila arenaria, Arthocnemum spp., Artemisia caerulecsens, Cakile maritima, Inula crithmoides, Ephedra distachia, Juncus maritima, Limonium vulgare, Schoenus nigricans, Salicornia europaea, Sporobolus pungens*, etc.

Woodlands in coastal lowlands, close to freshwater habitats, are represented by the alluvial forests, mixed forest, coastal pine forest and freshwater woods. The most representative species belong to *Populus alba, Tamarix parviflora, Tamarix hampeana, Salix fragilis, Salix alba, Alnus glutinosa, Fraxinus angustifolia, Vitex agnus-castus* etc. Coastal pine forest is composed by *Pinus halepensis* and *Pinus pinea*.

3.1.3. Marine flora (Seagrasses and Algae)

Marine waters of Albania, in spite of being very scanty and poorly studied and surveyed so far, are distinguished for their high biological diversity and very well developed littoral and benthic communities (Anonymous, 2002).

In Albanian marine waters grow four species of seagrasses: *Posidonia oceanica* (L) Delile, *Cymodocea nodosa* (Ucria) Ascherson, *Zostera noltii* Hornemann and the lessepsian species *Halophila stipulacea* (Forskål) Ascherson.

A recent study about the distribution of *Posidonia oceanica* along the Albanian coast (Kashta et al., 2005) confirms that habitats of this sensitive seagrass are much disturbed along the Adriatic coast; it was almost absent from Velipoja to Rodoni Promontory, and from Durresi to Vlora, probably as a consequence of the impact of freshwater flows and high values of suspended materials coming down from the rivers; there Posidonia seemed to be substituted by the other seagrass, *Cymodocea nodosa*, which is considered as more tolerant to the ecological factors, but never grows up in dense meadows.

In the Adriatic coast, well developed Posidonia beds are found only along the littoral of Cape Rodoni, near Porto Romano and Vlora bay.

Figure 3: Ionian Sea. A dense *Posidonia oceanica* meadow in Dhermi (at 14m depth)

Extensive *Posidonia oceanica* meadows cover the shallow waters of all Ionian coastline, south of Karaburuni. Their state is considered as normal, according to their density, leaves production and rhizome growth rate. Although *Posidonia oceanica* meadows in Ionian coast show in general a normal state, there are documented areas, which have been objects of human activity impacts (sand excavation, fishing activity, water pollution etc.) creating regression phenomenon until "dead mattes".
Together with the regression phenomenon, last years it has been identified a large distribution of the invasive algae *Caulerpa racemosa* var. *cylindracea*, which developed mainly on "dead mattes" from 2 m to 21 m depth (Kashta et al., 2005; 2007).

The first data about the macroalgae of Albania are reported by Ercegovic (1952, 1960), which mentioned some species of *Cystoseira* from rocky coast of Karaburuni Peninsula and some other species from deep waters of Albanian part of Adriatic Sea.

The most complete study about macrophyte algal flora along the Albanian coast was carried on by Kashta (1986), consisting in a taxonomic and ecological work. About 136 species have been described along the coast and its wetlands, where species from Rhodophyta were dominant. About 70% of species were found in rocky substrate, most of them in Ionian Riviera, i.e. 8 species of Cystoseira, also some interesting Corrallinaceae such as *Lithophyllum byssoides*, *Lithophyllum trochanter*, *Lithophyllum dentatum*, *Tenarea tortuosa*, etc.

After more recent studies (Kashta, 1987; 1992-93; 1995-96; 1996; Kashta et al., 1995; 2005) the marine flora of Albania counts ca. 170 species: 85 Rhodophyceae, 36 Phucophyceae, 38 Chlorophyceae and 4 Seagrasses.

Figure 4: Along the Ionian rocky coast there are localities with rich littoral habitats (photos: Kashta)

The marine waters of Albania represent a rich biological diversity and a much-developed littoral benthos. The areas with a high diversity of species are Dhermi-Himare and Karaburuni in the Ionian Sea and Rodoni Cape in the Adriatic Sea. These areas are also characterized by the presence of rare species, which are also very interesting from a bio-geographical point of view.

The phytobenthic community of Albania has a typical Mediterranean physiognomy, which is characterized by the domination of Atlantic and Mediterranean endemic species.

Nevertheless, the flora of the Albanian coasts has its own characteristics, due to its special biogeographical position as a transition area among the three sectors of the Mediterranean, and also due to the climatic and hydrological conditions. Thus, there can be found boreal elements along Albanian Adriatic shores such as *Fucus virsoides* (Phaeophyta*)* and *Catenella caespitosa* (Rhodophyta), relicts of Paratethys, which are considered as "alive fossil islands".

In the Ionian Sea there are typical elements of the Eastern Mediterranean such as *Lithophyllum trochanter* and *Tenera tortuosa* (Rhodophyta) and at the same time typical elements of the Western Mediterranean, such as *Lithophyllum byssoides* and *Colpomenia peregrina* (Anonimous, 2002).

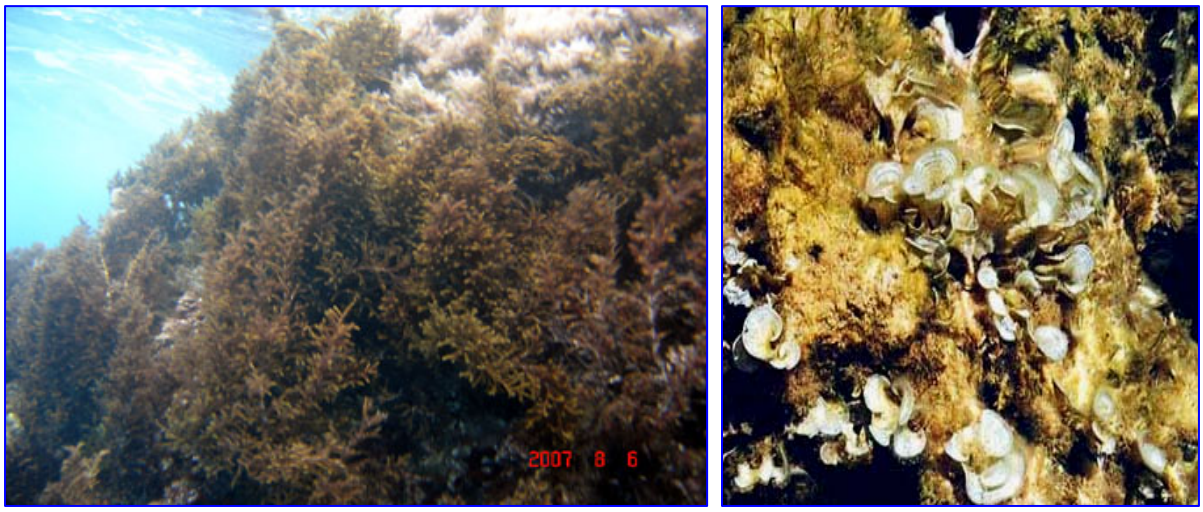


Figure 5: Biocenosis of infralittoral with photophilous algae on rocks in Kakomea Bay (photos: Kashta)

3.1.4. Coastal and marine fauna

Data on marine macrozoobenthos of Albania are relatively limited. The most studied groups of macrozoobenthos are echinoderms, decapod crustaceans and mollusks. Data on sponges, cnidarians, bryozoans, annelids and ascidians are poor and collected in the very last years only. Several benthic groups are almost or completely unstudied.

Among the first studies on marine benthos in Albania is that on the echinoderms, by Gjiknuri (1980). In his doctorate he reports the distribution of about 46 echinoderms species along the Albanian coast. Vaso, during his doctorate theses has studied the Albanian decapods, reporting more than 100 species (Vaso & Gjiknuri, 1993).

A comparative taxonomic and ecological study of mollusks (Gastropoda and Bivalvia) of the Albanian coastal lagoons has been the object of the doctoral theses of Beqiraj (2004), where about 77 species were reported. Mollusks and annelids predominate in the species composition of the macrozoobenthos of the Albanian coastal lagoons and the highest abundance has been recorded for mollusks, crustaceans and chironomids (after Beqiraj et al. 2007).

Complex studies on marine macrozoobenthos, focusing not only on a specific group, but on the biocenosis as a whole, are very recent. Few studies on benthic macrofauna associated to *Posidonia oceanica* meadows have reported about 190 species including sponges, cnidarians, bryozoans, mollusks, annelids, crustaceans, echinoderms and ascidians (after Beqiraj et al. 2008). A considerable number of species has been published from other very recent studies on marozoobenthos of rocky coast of Vlora (Kasemi et al. 2008), rocky coast of Shengjin (Beqiraj & Selimi, 2009), Vlora Bay (Panneta et al. 2009) and Saranda Bay (Beqiraj et al. 2009).

Rakaj (1995) has reported about 250 fish species from marine waters of Albania; the most common are *Mugil cephalus, Mugil labrosus*, *Anguilla anguilla*, *Sparus auratus, Dicentrarchus labrax, Merlucius merlucius, Mullus barbatus, Lithognathus mormyrus, Solea* sp., *Aphanius fasciatus, Lichia amia, Pagrus pagrus, Arnaglosus laterna*, etc.

28 species of sharks have been recorded in Albanian waters (after Rakaj 1995), out of 38 species which were recorded for the whole Adriatic Sea (after Lipej et al. 2004). The most common have been considered *Scyliorhinus canicula, Scyliorhinus stellaris, Mustelus mustelus, Squalus blainvillei, Squalus acanthias, Squatina squatina* and *Alopias vulpinus*. However, this is a relative assessment and based on old data. Recent scientific data on sharks in the bycatch are missing. 22 species or 78% of the shark species reported for Albania are of global concern and included in the IUCN Red List 2006 (Beqiraj, 2006).

Loggerhead turtle (*Caretta caretta*), a globally endangered species, was commonly found in Patoku Lagoon. In this lagoon, the green turtle *Chelonia mydas* has been also recorded several times in the last years. Leatherback turtle *Dermochelys coriacea* is a very rare visitor in Albanian waters. These 3 sea turtle species are globally endangered species, with high threatening status (after IUCN Red List 2006).

Table 3: Species number of different animal groups in coastal habitats (shallow marine waters and wetlands) of Albania and their percentage compared to the total species number reported for the country (a slightly modified version of *Miho et al. 2008*)

Animal groups	Species number in coastal habitats (% in Albania)	Species number reported in Albania
Echinoderms	48 (100%)	48
Decapods	115 (100%)	115
Molluscs	250 (38.5%)	649
Fishes	320 (33%)	360
Amphibians	13 (87%)	15
Reptiles	27 (75%)	36
Birds	290 (89%)	326
Mammals	42 (56%)	75

Coastal lagoons and estuaries are important areas for wintering of migratory water birds; about 70 species of water-birds have been recorded. Albania is a country of special importance for Dalmatian pelican (*Pelecanus crispus)* and pygmy cormorant (*Phalacrocorax pygmaeus*).
Water birds overwinter and breed in coastal lagoons and wetlands in great numbers, but their populations are known to decrease as the result of the drainage of wetlands during the communist regime and virtually uncontrolled hunting and other impacts in the post-communist period.

Figure 6: Pictures of zoobenthic communities from the Albanian infralittoral (fotos: Kashta, Mato)

Albanian marine and littoral habitats are frequently visited by the rare marine mammals. The Monk seal (*Monachus monachus*) has been a visitor of coastal waters in Karavasta region and in Ionian Riviera (Stillo and Qefali capes in Saranda, Palasa and Karaburuni). Although the Monk seal is a very rare visitor in Albanian waters, it is thought that the coastline from Stillo Cape to Karaburuni peninsula at the Ionian Sea offers several caves as potential habitats for resting shelters.

There are no specific studies on cetaceans in the Albanian waters. Nevertheless, occasional surveys, stranding and accidental entrapments in fishing gears have confirmed the presence of five species of cetaceans in Albanian waters: the short-beaked common dolphin (*Delphinus delphis*), the common bottlenose dolphin (*Tursiops truncatus*), the striped dolphin (*Stenella coeruleoalba*), the sperm whale (*Physeter macrocephalus*) and the Cuvier's beaked whale (*Ziphius cavirostris).* Three species of cetaceans, occurring also in the Albanian waters, are identified by ACCOBAMS as the species in greatest danger of disappearing from the Mediterranean: *Delphinus delphis, Tursiops truncatus* and *Physeter macrocephalus*. Taking into consideration the occurrence of the cetaceans in the neighbouring areas, it is presumed that other species may occur in Albanian waters in Adriatic and Ionian seas (APAWA ed. 2007).

3.2. *Description of proposed Marine Protected Areas*

The National Biodiversity Strategy and Action Plan (1999) has proposed 8 areas along the Albanian coast, as potential areas for being claimed Marine Protected Areas. In the following an analysis of each of these areas is carried out, aiming to identify and propose one single area as the most suitable for being claimed the first MPA in Albania.
This analysis is based on the natural and landscape values, considering the importance of habitats, communities and species, especially those of special importance as rare and/or endangered in national and international level, feeding and/or hatching grounds, as well as cultural, historical and socio-economic values and importance, according to the availability of existing data.

3.2.1. Cape of Rodoni - Lalzi Bay-Ishmi Forest.

Surface:	2,500 ha;
Current protection status:	Protected Landscape/Seascape Area;
IUCN Category:	V

Lalzi Bay is an accumulative coastline, which extends for about 18 km. The landscape is all plain, except the hill chain along Rodoni Cape that separates Erzeni watershed from Ishmi river; the highest top hill is 223 m in Likmetaj.

Figure 7: View of Lalzi Bay and Rodoni Cape (photo: Kashta, 2009)

The high dynamics of the coastline is a characteristic of Lalzi Bay and it is more emphasized in northern part of Erzeni delta, from Rrushkulli to Shen Pjetri beach. The sandy beaches have been continuously narrowed, due to the strong erosion in the coast. About 25 - 30 years ago the beach was 150 – 200 m wide; currently it is reduced to 10 - 30 m and even 2 – 5 m in some sectors. Former sand dunes, up to 100 m wide and 2 – 5 m high, were disappeared in some parts. This strong erosion can be evidenced even nowadays from the position of military bunkers (fig. 8).

Figure 8: Strong erosion in the coast of Lalzi Bay (photos: Kashta, 2007)

The most important habitats of Lalzi bay in biodiversity aspect are:

Rrushkulli - Hamallaj (about 12.86 km^2) is the most important area, extended between Erzeni delta and Tarini torrent, in a length of about 10 km along the sea, actually a Managed Natural Reserve.
Bishtaraka wetland (1.55 km^2) is almost in the middle of this system, about 3 km northern from Erzeni delta; it is a swap of about 1.6 km long and 750 m wide.
Sandy dunes and beaches: Shen Pjetri beach and its forest belong geographically to Lalzi bay. The zone is under the administration of Ishmi municipality (Durresi district). A beach zone of 100 m long and 20 m wide, formed under the accumulative process of sea waves, conserved yet virgin, belongs to natural monuments (geomonuments).
From a recent investigation of the flora and vegetation, about 330 species of vascular plants were recorded, with about 15 rare or endangered species, found mainly on the dunes.

Figure 9: Vegetation of sandy dunes, dominated by *Ammophila arenaria* in Lalzi Bay (photo: Kashta, 2007).

Sandy dunes and beaches from Rrushkulli to Shen Pjetri represent the most sensitive natural habitats. They are mainly inhabited by *Ammophila arenaria, Cakile maritima, Echinophora spinosa, Elymus farctus, Eryngium maritimum, Euphorbia paralias, E. peplis, Inula crithmoides, Medicago marina, Alkanna tinctoria, Pancratium maritimum, Salsola kali, Sporobolus pungens, Xanthium strumarium*, etc.

In more stable dunes, fragments of forests or shrubs grow up, dominated by *Juniperus oxycedrus* ssp. *macrocarpa,* alternated by a narrow belt of Mediterranean pines *(Pinus pineaster, P. halepensis* and rarely *P. pinea),* cultivated 40-50 years ago.

According to the Albanian National Red List (2008), the plant species: *Pancratium maritimum, Matthiola tricuspidata, Juniperus oxycedrus, Desmazeria marina, Ammophila arenaria, Stachys maritime* and *Lotus cytisoides* have been considered as threatened species of sandy dunes of Lalzi Bay.

The data about marine fauna of Lalzi bay is limited. About 90 species of macrobenthic fauna have been reported (by Beqiraj 2006-b), mostly mollusks, but also bryozoans, crustaceans and polychaetes. Many species, especially gastropods and bivalves belong to the National Red List.

The zone of Lalzi is mentioned also for fishes. Fishing is an important activity in the zone. A checklist of 58 species was given by Haxhiu & Halimi (2006) for Patoku and Lalzi coastal areas altogether.
In the seacoast the following fishes have been reported as the most common in the fishery stock: common stingray, angelshark, spotted torpedo, annular sea bream, Atlantic horse mackerel, leerfish, red mullet and mediterranean killifish.

From about 25 recorded species of reptiles, two species belong to sea turtles (*Caretta caretta* and *Chelonia mydas),* mentioned to visit often the shallow marine waters.
Rakaj N. (in Tekke, 1996) reports that in the year 1966 the common cachalot or the dentate sperm whale (*Physeter catodon* sin. *Physeter macrocephalus*) passed through Lalzi bay, while the Monk seals (*Monachus monachus*) were regularly observed there. Moreover, it is recorded that the marine waters of Lalzi bay are often visited by dolphins (*Delphinus delphis* and *Tursiops truncatus*). According to information from local fishermen, the beak whale (*Ziphius cavirostris*) has been visitor of marine waters in Lalzi, too.

Rodoni Cape

The coastline, represented by Tortonian sandstone-clay banks, is an erosive area and generally barren. Very poor vegetation dominated by *Crithmum maritimum, Elymus pycnanthus,* etc. grows up in some segments.
Over this narrow stage, only 3-4 m above sea level, start another stage dominated by Mediterranean macquis and somewhere by *Quercus pubescens*.

Coastal and marine habitats

Mediolittoral Stage

Biocenosis of mediolittoral coarse detritic bottoms
Facies with banks of dead leaves of *Posidonia oceanica* and other phanerogams

At ecological aspect, these banks (wracks) constitute the basis for a specific trophic network, characterised by the presence of many isopod crustaceans. At sedimentary aspect, this facies, especially when it is well represented, constitutes a most effective natural protection for the beach against erosion. These banks are not well represented in the whole area.

Figure 10: Accumulation of plant debris made up mostly of dead *Posidonia oceanica* leaves at the western side (a) and the northern side (b) of Rodoni Cape (photos: Kashta, 2009)

Biocenosis of the lower mediolittoral rock
The association with *Fucus virsoides*
An association that is exclusive to the eastern (from Albania to Slovenia) and northern coasts of the Adriatic, is present in the lower part of the mediolittoral.
This is the only Fucus population in the Mediterranean, strictly restricted to the upper Adriatic and in few points in the eastern coast of the Adriatic. Being a pre-Messinian relict, this association is extremely important from the natural heritage point of view.

Infralittoral stage

Biocenosis of the *Posidonia oceanica* meadows
Posidonia oceanica meadows (=Association with *Posidonia oceanica*)

Three species of seagrasses are reported for this are: *Posidonia oceanica, Zostera noltii* and *Cymodocea nodosa.*

Posidonia oceanica meadows represent the most important underwater community.
In this area *Posidonia oceanica* grows mainly on mattes, but it is also present in sand and rocky bottoms. The entire bottom is covered by sediments that are also present in suspension, what results in a moderate water clarity.

Figure 11: The western cost of Rodoni cape: on the emerged rocks, only some centimeters underwater grows *Fucus virsoides, an Adriatic endemic species* (photo: Kashta)

Figure 12: Aerial view of Rodoni Cape coast showing dark patches of *Posidonia oceanica* meadows on the bottom

The upper depth limit of Posidonia meadows is at 3 meters. The lower limit of the meadows riches a depth of 17-20 m and it includes different environmental conditions and bottom types, with meadows extremely diversified in terms of physiognomy (continuous and patchy meadows).
On the rhizomes and the bottom covered by dense shoots of *Posidonia* there is a well developed sciafilic community dominated by algae like *Sphaerococcus coronopifolius, Peysonelia squamaria, Utricularia macrophysa, Pseudolythophyllum expansum* and *Flabellia petiolata.*
On dead mattes grow up photophilic algae like *Padina pavonica, Halopteris scoparia* and *Acetabularia acetabulum.*

a b

Figure 13: A meadow of *Posidonia oceanica* (a) and the endangered mollusk *Pinna nobilis* (b) at 13 m depth in Rodoni Cape.

Among mollusks, as the most common species in Posidonia meadows of Rodoni bay were reported gastropods *Clanculus cruciatus, Clanculus corallinus, Homalopoma sangunieum, Jujubinus exasperatus, Jujubinus striatus, Calliostoma conulum, Tricolia tenuis, Bittium reticulatum, Cerithium vulgatum, Hexaplex trunculus, Columbella rustica, Nassarius incrassatus, Hypseldoris tricolor* and bivalves *Pinna nobilis*, *Callista chione, Parvicardium exiguum.*

Different bryozoans (mainly *Electra posidoniae),* hydrozoans (mainly *Plumularia*) and some sciafilic algae live as epiphytes on Posidonia rhizomes in this area.

Algae reported in the area

Bangia atropurpurea, Peyssonnelia squamaria, P. rubra, Digenea simplexa, Rhytiphlaea tinctoria, Phyllophora crispa, Osmundaria volubilis, Halopteris scoparia, Dilophus fasciola, Padina pavonica, Cystoseira spinosa var. compressa, C. barbata, C. compressa, C. corniculata, C. amentacea var. spicata, Fucus virsoides, Sargassum vulgare, Enteromorpha compressa, Cladophora prolifera, Halimeda tuna, Flabellia petiolata.

Figure 14: Slopes with fossil mollusks at the northern side of Rodoni Cape (photos: Kashta, 2009)

Figure 15: Wastes transported from Ishmi River, at the north-western part of Rodoni Cape (photo: Kashta).

Historic and cultural values in Rodoni area

Rodoni Castle and Saint Antonio's Church

The Castle of Rodoni is located on the most western part of Rodoni Cape. Prince Karl Topia (XIV century) wanted to transform this place into a shipyard, while the Albanian national hero, Skanderbeg (XV century), built a castle there in order to have an easy access to the sea. The construction of the castle started after the first siege of Kruja, in 1450. It is thought to have been finished around 1452. The walls of the Rodoni Castle were 400 metres long and there were towers in each of the four corners. In 1500 the castle was taken over by the Venetians. As a result of the corrosive action of the sea waves, some of the walls are now under the waters of the Adriatic. Today the visitors can see the outer walls on the right side and the tower at the place they intersect. Close to the castle are the ruins of Saint Antonio's Church. This church has been reconstructed recently and it is considered as a holy place and as an important pilgrimage site during some religious celebrations, especially for Saint Antonio's day, when thousands of people from northern and central part of Albania come to visit this place.

Figure 16: Rodoni Castle (photo: Beqiraj, 2009)

Figure 17: Church of Saint Antonio in Rodoni Cape (photo: Kashta, 2009)

Tab.4: Marine species of international concern in Rodoni – Lalzi area, listed in the most important Conventions

Species name	Barcelona protocol (1996)		Bon (2006)		CITES (2006)	Bern (1993)
	Ann. II	Ann. III	App. 1	App. 2		
Magnoliophyta						
Zostera noltii	+					
Posidonia oceanica	+					+
Cymodocea nodosa						+
Phaeophyta						
Cystoseira amentacea var. spicata	+					+
Spongia						
Geodia cydonium	+					
Hippospongia communis		+				+
Spongia officinalis		+				+
Mollusca						
Tonna galea	+					+
Pholas dactylus	+					+
Pinna nobilis	+					
Lithophaga lithophaga	+				+	+
Crustacea						
Homarus gammarus		+				+
Maja squinado		+				+
Scyllarides latus		+				+
Scyllarus arctus		+				+
Palinurus elephas		+				+
Echinodermata						
Paracentrotus lividus		+				+
Pisces						
Carcharodon carcharias	+		+	+	+	+
Anguilla anguilla		+				
Umbrina cirrhosa		+				+
Thunnus thynnus		+				
Sciaena umbra		+				+
Hippocampus guttulatus					+	
Hippocampus ramulosus	+				+	+
Reptilia						
Caretta caretta	+		+	+		+
Chelonia mydas	+		+	+		+
Cetacea						
Tursiops truncatus	+			+	+	+
Physeter macrocephalus	+		+	+	+	+

Marine species of national concern in Rodoni – Lalzi area

(after Albanian Red Book 2006 and National Red List 2007)

Seagrasses

Posidonia oceanica
Cymodocea nodosa

Seaweeds (algae)

Cystoseira amentacea var. spicata
Fucus virsoides

Sponges

Geodia cydonium

Spongia officinalis
Hippospongia communis

Gastropods

Patella caerulea
Patella rustica
Patella ulyssiponensis
Monodonta turbinata

Gibbula divaricata
Jujubinus exasperatus
Jujubinus striatus
Calliostoma conulum
Tricolia pullus
Tricolia tenuis
Rissoa ventricosa
Tonna galea
Galeoda echinophora
Epitonium commune
Janthina janthina
Hexaplex trunculus
Bolinus brandaris
Stramonita haemastoma
Fusinus rostratus
Nassarius reticulatus
Nassarius incrassatus
Neverita josephinia
Natica stercusmuscarius
Aporrhais pespelecani

Bivalves

Arca noae
Mytilus galloprovincialis
Lithophaga lithophaga
Pinna nobilis
Ostrea edulis

Crassostrea gigas
Pecten jacobaeus

Lima inflata

Acanthocardia tuberculata
Parvicardium exiguum
Solen marginatus
Ensis minor
Loripes lacteus
Lucinella divaricata
Dosinia lupinus
Macoma cumana
Venerupis geographica

Pholas dactylus
Corbula gibba

Crustaceans

Hippolite longirostris
Thoralus cranchii
Alpheus dentipes
Brachynotus sexdentatus
Galathea intermedia
Calappa granulata
Palaemon serratus
Crangon crangon
Palinurus elephas
Scyllarus arctus
Scyllarides latus
Homarus gammarus
Maja squinado
Eriphia verrucosa
Pinotheres pisum
Pisa armata

Polychaetes

Sabella spallanzani

Echinoderms

Paracentrotus lividus

Fishes

Carcharodon carcharias
Hippocampus guttulatus
Hippocampus ramulosus
Argyrosomus regius

Reptiles

Caretta caretta
Chelonia mydas

Cetaceans

Physeter macrocephalus
Tursiops truncatus

3.2.2. Cape of Lagji -Turra Castle

Surface:	600 ha;
Current protection status:	Scientific Reserve;
IUCN Category:	I

Cape of Lagji-Turra Castle is situated in the northern edge of the Kryevidhi Hills, which is thought to belong to Pliocene formations.
The hills are covered by Mediterranean forest and macquis composed mainly from the species *Arbutus unedo, Erica arborea, Pistacia lentiscus, Myrtus communis, Spartium junceum, Laurus nobilis, Phyllyrea media, Quercus ilex, Fraxinus ornus*, etc. The most important species is the laurel *Laurus nobilis*, a relict species, which forms here a characteristic and unique forest in Albania.

Figure 18: General view of Kryevidhi hill covered by typical Mediterranean macquis vegetation

Figure 19: Sandy dunes (left) and shingle beach (right) along the shoreline of Spillea coast

Sandy dunes are developed in Spillea coast, in the southern part of the area. The main plant species of sandy dunes are: *Amophyla arenaria, Eryngium maritimum, Medicago marina, Euphorbia paralias,* etc.

The vegetation of the rocky coast is dominated by *Crithmum maritimum* accompanied from several common species like *Dittrichia viscosa, Hordeum marinum, Lagurus ovata, Avena barbata, Reichardia picroides,* etc.

Coastal and marine habitats

Mediolitoral Stage
Biocenosis of the lower mediolittoral rock

The association with *Fucus virsoides*
This association is developed on the mediolittoral, in some parts of the coastline represented by emerged stones, like in the coast of Rodoni Cape.

Figure 20: Emerged stones represent interesting biotopes for many marine livings in Lagji Cape. *Fucus virsoides*, endemic seaweed of Adriatic Sea, grow here.

Infralittoral stage
Biocenosis of the *Posidonia oceanica* meadows (=Association with *Posidonia oceanica*)

Two species of seagrasses are reported for the zone: *Posidonia oceanica* and *Cymodocea nodosa. Posidonia oceanica* represents the most important underwater community. In this area *Posidonia* is present in patches, as it can be distinguished in the figure 24.
Cymodocea nodosa forms small meadows in modest depth close to the coast.

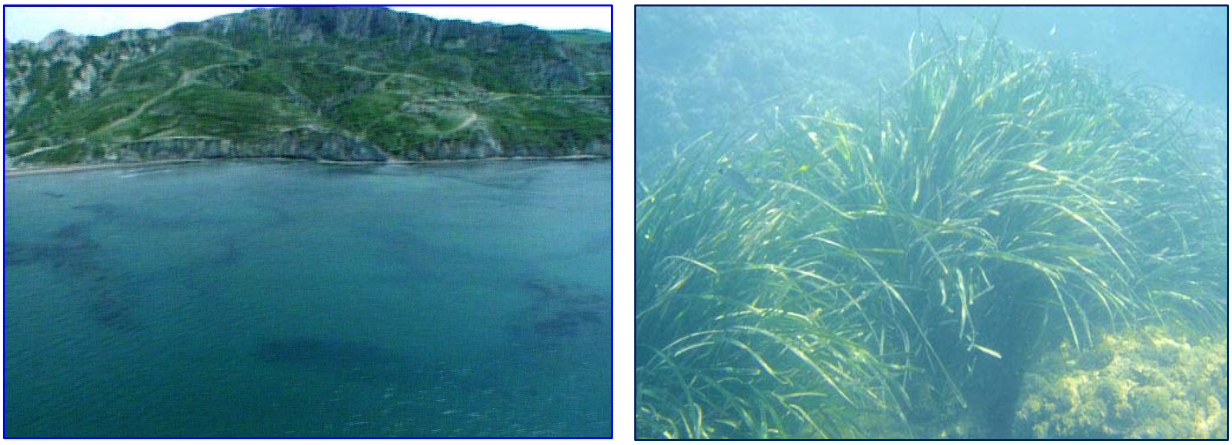


Figure 21: Aerial and underwater view of *Posidonia oceanica* patches in rock.

Biocenosis of infralittoral algae

Algae reported in the area: *Nemalion helminthoides, Corallina officinalis, C. elongata, Hypnea musciformis, Phyllophora crispa, Sphaerococcus coronopifolius, Catenella caespitosa, Acrodiscus vidovichii, Ceramium ciliatum var. robustum, Spyridia filamentosa, Rhytiphlaea tinctoria, Osmundaria volubilis, Halopteris scoparia, Dictyopteris polipodioides, Padina pavonica, Cystoseira barbata, C. compressa, C. amentacea var. spicata, Ulva laetevirens, Cladophora prolifera.*

Figure 22: Cystoseira "forest" grows only few centimeters under water surface (photo: Kashta, 2009)

Data on marine fauna

Lagji Cape has been very scarcely studied and data on marine fauna are very limited. Most of data belong to sporadic collections rather than specific studies. The most data exist about mollusks and crustaceans. However, taking into account the limited existing data, there is a considerable number of endangered species of international and national concern (see the lists below).

Anthropogenic activities in the area

Close to the Cape is situated the Karpeni wetland. About 2.2 km^2 of it surface has been used as a carp farm (*Cyprinidae*). Since the year 1993 the existing farm was partially transformed in an extensive Shrimp Farm (about 6 ha) by a joint-venture (Italo-Albanian), with a production surface of 2 ha. It is the first semi-intensive growth of shrimps (*Marsupeneus japonicus)* in Albanian coastal wetlands.

Figure 23: Gjenerali beach, in southern part of Lagji Cape

In the southern part of Lagji Cape is situated the so called Gjenerali (General's) beach. It is a small sandy beach (fig. 26), almost totally in natural conditions. This beach is well known in central Albania for its cleanliness and pristine conditions, but it is not very easy to reach it, due to the bad road conditions in the last 10 - 12 km from the national road. Recently, a small tourist complex has been built, consisting in wooden villas, with a total capacity of 90 beds. The sewage is transported in underground septic wells and the impact of this complex on the coast is pretended to be very low.

Further in the south is situated Spillea beach, a long and large sandy beach, with a considerable tourist capacity, formerly known as a pristine coastal area. In the last 15 years this area has also suffered the human impact through uncontrolled tourism development, which has altered the natural habitats, with tourist settlements even inside the coastal pine forest. Agriculture is the main activity of the local community in the villages around Lagji Cape.

Tab.5: Marine species of international concern in Lagji Cape area, listed in the most important Conventions

Species name	Barcelona protocol (1996)		Bon (2006)		CITES (2006)	Bern (1993)
	Ann. II	Ann. III	App. 1	App. 2		
Magnoliophyta						
Posidonia oceanica	+					+
Cymodocea nodosa						+
Phaeophyta						
Cystoseira amentacea var. spicata	+					+
Crustacea						
Scyllarus arctus		+				+
Echinodermata						
Paracentrotus lividus		+				+
Pisces						
Carcharodon carcharias	+		+	+	+	+
Hippocampus guttulatus					+	
Cetacea						
Tursiops truncatus	+			+	+	+
Physeter macrocephalus	+		+	+	+	+
Delphinus delphis	+		+	+		+
Stenella coeruleoalba	+			+	+	+

Marine species of national concern in Lagji Cape area (after Albanian Red Book 2006 and National Red List 2007)

Seagrasses
Posidonia oceanica
Cymodocea nodosa

Seaweeds (algae)

Cystoseira amentacea var. spicata
Fucus virsoides

Gastropods

Bivalves
Mytilus galloprovincialis
Solen marginatus
Chamelea gallina

Crustaceans

Alpheus dentipes
Brachynotus sexdentatus
Galathea intermedia

Echinoderms
Paracentrotus lividus

Fishes
Carcharodon carcharias
Hippocampus guttulatus

Cetaceans
Physeter

Patella caerulea
Patella rustica
Patella ulyssiponensis
Monodonta turbinata
Stramonita haemastoma

Calappa granulata
Scyllarus arctus
Pisa armata
Dardanus arrosor

macrocephalus
Tursiops truncatus
Delphinus delphis
Stenella coeruleoalba

3.2.3. Karaburuni peninsula – Sazani island (within the area Llogora-Orikum-Karaburun-Sazan-Radhimë-Tragjas-Dukat)

Surface (total area): 35.000 ha;
Current protection status: National Park (Marine/Terrestrial);
IUCN Category: II

General description

Karaburuni peninsula represents the western part of the Vlora bay and together with Sazani Island has been identified as a priority area by many recent environmental policy documents of the Government of Albania. The peninsula has a surface of 62 km^2 and separates the Albanian coast of the Adriatic Sea from the Ionian Sea. A narrow sea channel, named Mezokanali *(in English: middle channel)* separates Karaburuni from the Sazani Island.
From the geological point of view Karaburuni is made up of carbonic limestone of Cretaceous, while in the north-western part, Bay of Shën Jani, it is composed of terrigenic deposits.
The relief comprises a number of hills, up to 800 m high. The highest peaks are Maja e Ilqes (733 m), Maja e Flamurit (826 m) and Çadëri (839 m).
The entire peninsula meets the sea in steep, inaccessible cliffs. The western shore is high, fragmented with many fissures, caves, gaps, and small beaches. The accessibility of the peninsula to its beaches and coast is difficult, if not impossible, in most areas due to the cliffs at the seashore. The eastern shore is less fragmented. Cape Gjuhezes at the northwestern tip of the peninsula is the westernmost point of Albania. The area is practically devoid of woody vegetation, except for sparse maquis and wild grasses, and has no freshwater sources.
In the Karaburun peninsula there are some small bays: The Bay of Raguza, the Bay of Shën Jan, The Bay of Bristan, the Bay of Dafina, etc.
Sazani Island is 4.8 km long, 2 km wide, and has a surface of 5.7 km^2. It is composed mainly of limestone rocks of Cretaceous era, and in the eastern part partially of terrigenic and cleistogenic deposits.

The hill slopes of Karaburuni peninsula, mountain chain of Rrëza e Kanalit, and Sazani Island are characterized by a great diversity of vegetation types. Some of the interesting habitats are:

Broad – leaves evergreen forests (Assoc. Orno –Quercetum ilicis)
At Karaburuni peninsula and mountain chain of Rrëza e Kanalit the large rivulet courses (valley) from foothills up to the top of hills are bordered by these forests (in both sides, western and eastern parts). The most important trees in this type of forest are *Quercus ilex, Fraxinus ornus, Quercus coccifera, Acer campestre*.

Plant communities dominated by *Quercus coccifera* (Assoc. Orno- Quercetum cocciferae).
A large surface of hill slopes at Sazani Island, Karaburuni peninsula and mountain chain of Rrëza e Kanalit at altitudes 0-900 m are covered by rather dense shrubs, dominated by *Quercus coccifera.* Other evergreen shrubs, which create the shrub layer of these plant communities are: *Pistacia lentiscus, Quercus ilex, Fraxinus ornus, Myrtus communis, Laurus nobilis* (especially on western slops of Karaburuni peninsula, nearby the Bay of Bristani).

Figure 24: View from the western sides of Karaburuni peninsula

Plant communities dominated by *Euphorbia dendroides and Pistacia lentiscus* (Assoc. Pistacxio – Euphorbietum dendroides).

Towards the inner part of the Sazani Island and Karaburuni peninsula a vegetation belt exposed to the sea, at low altitudes (ca. 50-100 m) is dominated by: *Euphorbia dendroides, Pistacia lentiscus, Phillyrea angustifolia, Quercus coccifera, Olea europea subsp. sylvestris, Prasium majus,* etc.

Figure 25: Sazani Island. Plant communities dominated by *Euphorbia dendroides* (photo: Kashta, 2009)

The forests dominated by *Quercus ithaburensis* subsp. *macrolepsis* (known as Valona oak).
This type of forests is met in patches all over the Karaburuni peninsula at altitudes 0-800 m within the evergreen forest belt (below 800 m) but it doesn't form a distinct forest belt.
Quercus ithaburensis subsp. *macrolepsis* might by consider as a relict species that persisted on the Karaburuni peninsula since Tertiary period.

Figure 26: The forest of *Quercus ithaburensis subsp. macrolepis* on the weastern side of Karaburuni peninsula (photo: Beqiraj, 2009).

List of important species
Relict species: *Quercus ithaburensis subsp. macrolepis; Laurus nobilis.*

Rare and threatened plant species: *Athamanta macedonica, Brassica oleracea* subsp.*oleracea, Brasica incana, Laurus nobilis, Origanum vulgare, Prunus webbii, Quercus ilex, Limonium anfractum, Lotus cytisoides, Desmazeria marina, Capparis spinosa, Prasium majus, Ephedra distachia, Orchis* sp.div., *Daphne gnidium.*

Coastal and marine habitats

Coastal cliffs escarpments vegetation is present in the Sazani Island and the Karaburuni peninsula, where most of shores are rocky. Sandy or gravel shores occur in small areas only. Vertical cliffs of 200-300 m are present in some areas (Gryka e Xhenemit, Shpella e Haxhi Alisë, etc.).

The lower belt (up to 5-6 m above sea level) is dominated by xero-halophytic Crithmo-Limonietea communities. It is characterized by the following species: *Crithmum maritimum, Limonium anfractum, Elymus pycnanthus, Desmazeria marina, Lotus cytisoides,* etc.
The upper belt is inhabited by the alliance Capparo - Putorion Lov. The characteristic taxa of this belt are: *Capparis spinosa, Putoria calabrica, Ephedra distachia* etc.

Figure 27: Sea cliffs vegetation in Sazan Island and Karaburuni peninsula (photos: Tilot, Beqiraj, 2009)

Mediolittoral Stage

Biocenosis of the lower mediolittoral rocks
Lithophyllum byssoides (= *L. lichenoides*), a caracteristic species of western Mediterranean and Adriatic Sea, is present on the mediolittoral of Sazani island and Karaburuni peninsula. This incrusting coralline algae grows slightly above mean sea level, in small caves, corridors and along cliffs. In this area it forms small cushions (hemispheric concretions) and rarely builds rims, usually known as “trottoirs”.

Biocenosis of mediolittoral caves
Mediolittoral caves correspond to crevices or the entrances of caves that are partially out of the water. There are several of these places along the western side of peninsula, where grow species like *Catenella caespitosa, Hildenbrandia prototypus*, *Phymatolithon lenormandii,* etc.

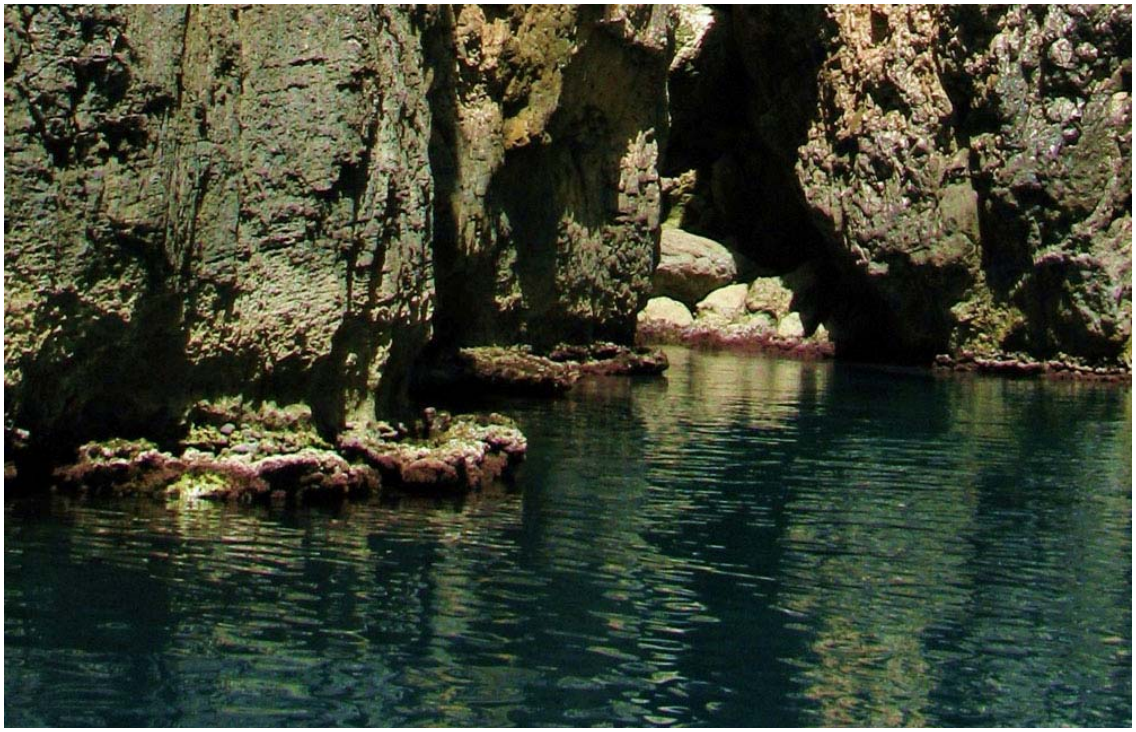


Figure 28: "Trotoire" - organogenic construction of *Lithophyllum byssoides* on the mediolittoral of Karaburuni western coast (photo: Tilot)

Figure 29: Mediolitoral caves along western side of Karaburuni peninsula (photos: Beqiraj, Kashta)

Biocenosis of the *Posidonia oceanica* meadows

Posidonia oceanica meadows (=Association with *Posidonia oceanica*)

(Habitat Directive 92/43/EEC as priority habitat; Barcelona Convention, Annex II)

Seagrass communities (also called seagrass beds or meadows) often characterize sandy and muddy biotopes in Karaburuni coasts and Vlora bay.

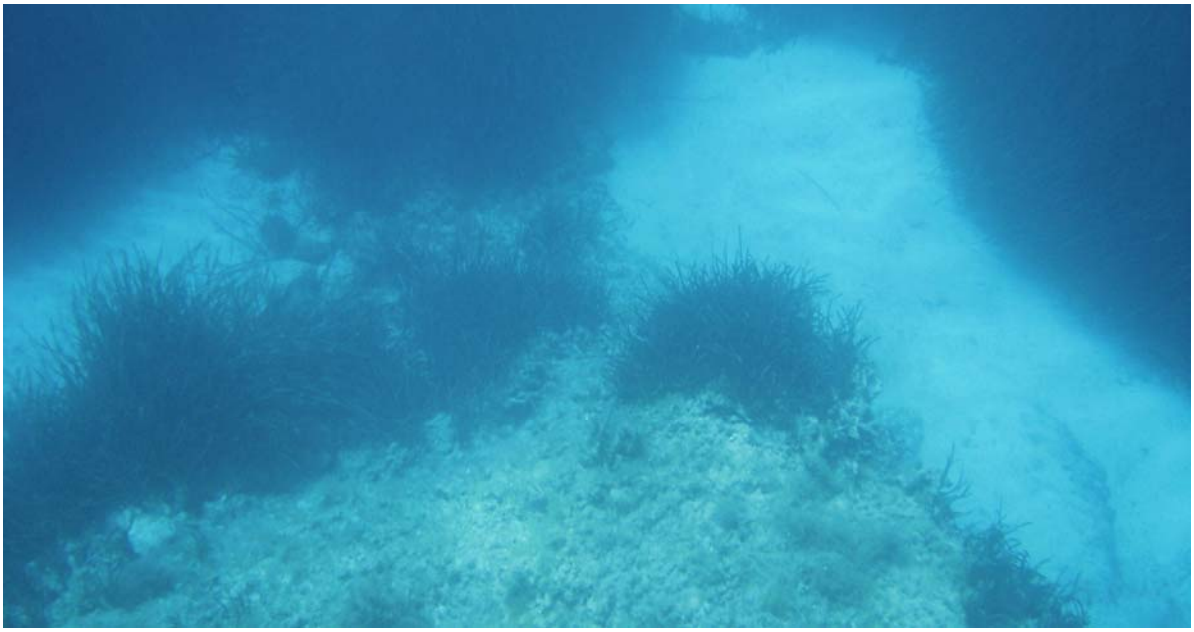


Figure 30: Fragment of *Posidonia oceanica* meadow in western site of Karaburuni (photo: Kashta)

On the western side, *Posidonia oceanica* grow generally on rocky substrates and rarely on sandy seabeds, in front of small beaches.

Fragmented *Posidonia oceanica* meadows have been observed along the eastern coast of Karaburuni, in Vlora bay. The beds with coverage of 50% extend from 6 m to 15-18 m depth.

An inventory of Posidonia meadows have been done in Shen Vasil and Raguza bay, at the eastern coast of Karaburuni.

In Shen Vasil, the Posidonia meadows were very poor in benthic macrofauna. The most common species in this site were sponges *Crambe crambe* and *Axinella canabina*; bryozoans *Myriapora truncata, Smittina cervicornis* and *Membranipora sp*., eunicid polychaetes (Fam. Eunicidae) and ascidian *Halocynthia papillosa*. It's worthy to emphasize the high abundance of *Halocynthia papillosa* and *Holothuria tubulosa* in the bare parts, without macrovegetation cover, between the patches of Posidonia.

In Raguza bay, benthic macrofauna was slightly richer, compared to the first site. It was recorded a very high abundance of *Holothuria tubulosa*, especially in the bare parts, without macrovegetation cover. It was also recorded a high species richness of sponges, where the most common were *Aplysina aerophoba, Crambe crambe, Ircinia variabilis, Petrosia ficiformis* and *Axinella damicornis*. Other species with high abundance were the anthozoan *Cladocora caespitosa*, gastropod *Hexaplex trunculus*, bivalves *Venus verrucosa* and *Pseudochama gryphina* and the ascidian *Botryllus schlosseri* with the anthozoan *Caryophyllia inornata* as epibiont.

Along with the regression of the *Posidonia oceanica* beds, it has also been distinguished a mass growth of the invasive *Caulerpa racemosa*, which was developed mainly on "dead mattes" from 2 m to 15 m depth. After its first record in Albania in 2002, this invasive alga seems to be common in wide ranges of depths and substrata along the coast of Vlora bay.

Hard beds and rocks

Biocenosis of infralittoral algae

Perennial brown algae are dominant over extensive parts of shallow hard substrata in the western side of Karaburuni peninsula and Sazani island. The most important group is that of the brown algae Cystoseira, represented with 5 species (*Cystoseira amentacea var. spicata, C. barbata, C. compressa, C. crinita and C. spinosa*). The *Cystoseira* communities together with the *Posidonia* meadows are the main supporters of biodiversity in shallow water.

Association with *Cystoseira amentacea* var. *spicata*

This association is located in the first meter of the infralittoral (from –20 to –30 cm.) and creates belts in the photophilic biotopes, where there is a strong wave action and the rocky substratum is subvertical. *Cystoseira amentacea* is an indicator of the upper limit of the infralittoral stage and represents a threatened species (after Barcelona Convention, Annex II).

Figure 31: Karaburuni western site. *Cystoseira amentacea* var. *spicata* (photo: Kashta)

This association, including many strata, is characterized by great species richness; it shelters epibiont organisms and other benthic organisms mainly belonging to the algae, polychaetes, molluscs and crustaceans. Other associations to be mentioned here are: Association with *Cystoseira crinita,* Association with *Dictyopteris polypodioides,* Association with *Corallina elongate,* Facies with *Cladocora caespitosa.*

Figure 32: *Cystoseira* "forest" in the infralitoral stage of Karaburuni (photo: Kashta, 2009)

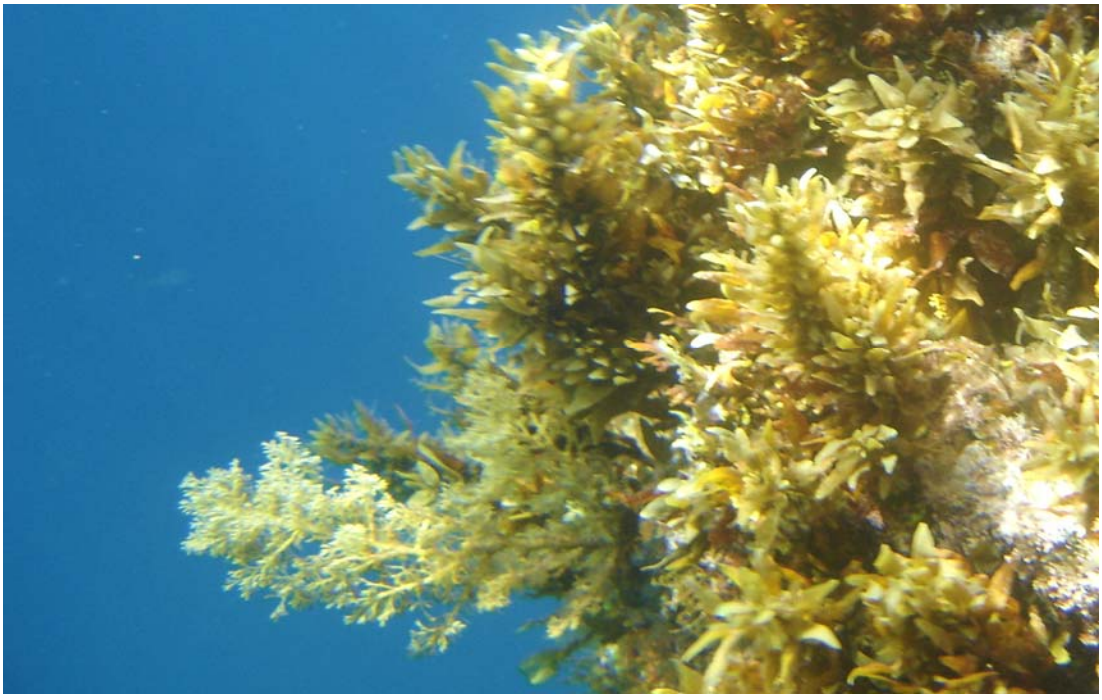


Figure 33: *Sargassum vulgare* in the infralitoral stage of Karaburuni (photo: Kashta, 2009)

Some of infralittoral algae recorded for the area

Gelidium spinosum var. hystrix, Amphiroa rigida, Corallina elongata, Lithophyllum trochanter, Pseudolithophyllum expansum, Catenella caespitosa, Dudresnaya verticillata, Acrosymphyton purpuriferum, Halymenia floresia var. floresia, Peyssonelia squamaria, Phyllophora crispa, Sphaerococcus coronopifolius, Digenea simplex, Laurencia papillosa, Halopteris scoparia, Dictyopteris polipodioides, Dictyota dichotoma, Padina pavonica, Cystoseira amentacea var. spicata, C. barbata, C. crinita, C. spinosa, Sargassum vulgare, Palmophyllum crassum, Acetabularia acetabulum, Polyphysa parvula, Cladophora prolifera, Anadiomene stellata, C. racemosa var. cylindracea, Halimeda tuna, Flabellia petiolata, Codium bursa,
Solms-Laubach) Schnetter et Bula-Meyer with tropical affinity and the lessepsian seagrass *Halophila stipulacea*

Some of these species are very interesting in a biogeographical point of view, such as *Catenella caespitosa,* with boreal affinity, *Polyphysa parvula* (Solms-Laubach) Schnetter et Bula-Meyer with tropical affinity and the lessepsian seagrass *Halophila stipulacea* (Forskal) Ascherson. Until now Vlora Bay represents the northern limit of area distribution of *Halophila stipulacea* in the Mediterranean.

Figure 34: Underwater sciaphilic communities in Haxhi Alia cave - Nature Monument (photos: Kashta, Beqiraj, 2009)

Coralligenous biocenosis

In the circalittoral zone, on hard substrata, the most important biocoenosis is the coralligenous, with calcareous red seaweeds, gorgonians and bryozoans. This biocenosis is well developed on the western side of Sazani island and Karaburuni peninsula.

Other important biocoenosis is that of semi-obscure caves, where the red coral *Corallium rubrum* and some sponges live.

The red coral (*Corallium rubrum*) is a species of the Annex-III of the Barcelona Convention, as a species whose exploitation is regulated.

Figure 35: *Corallium rubrum* from the western coast of Karaburuni (photo: Kashta 2007)

Marine benthic macrofauna of Sazan – Karaburun area and Vlora bay

There are relatively richer data on marine fauna of this area, compared to many coastal areas of Albania. Most of the data belong to studies of specific groups, such as mollusks, crustaceans and echinoderms.

More than 150 mollusk species have been reported from this area and new species for Albania and for the area its self are being published from almost every study on malacofauna and the macrozoobenthos in general (after Dhora & Salvini-Plawen 1997; Beqiraj & Kashta 2007; Beqiraj et al. 2008; Kasemi et al. 2008; Panneta et al. 2009).

About 50 species of decapod crustaceans have been reported from this area (Vaso & Gjiknuri, 1993; Kasemi et al., 2008), of which many species belong to the national red list.

From 46 echinoderm species reported for the Albanian coast, 32 of them have been also found in Vlora Bay, including Karaburuni peninsula and Sazani Island (Gjiknuri, 1980). These species include 1 crinoid, 13 asterids, 4 ophiurids, 9 echinids and 5 holothuroids Data on the bioecology, biometry, depth and habitat characteristics were given for every species in that publication.

A recent study on macrozoobenthos of shallow rocky coast of Vlora bay (Kasemi et al., 2008), in supralittoral, mediolittoral and upper limit of infralittoral, has also included the south-eastern coast of Karaburuni (Orikum). This study has reported about 140 species of benthic macroinvertebrates, including also isopods, cirripeds, amphipods, annelids, cnidarians, nematodes, bryozoans and sipunculids (besides mollusks, crustaceans and echinoderms, which were mentioned here above).

In the Red Book of Albanian Fauna (2006), from 64 species of marine benthic macroinvertebrates, 49 species were from Vlora Bay, of which 5 are sponges, 8 cnidarians, 1 annelid, 20 mollusks, 12 decapods and 3 are echinoderms.

Taking into account the Red List of Albanian Fauna 2007, too, (besides the Red Book 2006), among 220 species of marine fauna involved in this list, about 160 species (75%) have been reported also for Vlora area, including Karaburun – Sazan.

Other marine groups and values

In the marine waters of Sazani – Karaburuni has been also recorded the presence of the dolphins *Delphinus delphi*s and *Tursiops truncatus* and many other threatened species, protected by international conventions. The marine waters of Karaburuni are also visited by the Mediterranean seal (*Monachus monachus*), one of the most threatened species in the world.

Some important crustaceans like lobster (*Homarus gammarus*), the crawfish (*Palinurus elephas*), the greater locust lobster (*Scyllarides latus*), and the spiny spider crab (*Maja squinado*) live in this area. These species are involved in the Annexe-III of the Barcelona Convention, as species whose exploitation is regulated.

Ophidiaster ophidianus, a sea star of international concern, is a characteristic echinoderm of precoralligenous biocoenosis in this area.

Figure 36: *Ophidiaster ophidianus and Hacelia attenuata* from Karaburuni coast (photos: Kashta)

Noteworthy fish species of Karaburuni waters, included in the Annex III of Barcelona Convention are: the dusky grouper (*Epinephellus marginatus*), the Atlantic bluefin tuna (*Thunnus thynnus*) and the swordfish (*Xiphias gladius*).

In autumn 2005 a survey was carried out, aiming to make a rapid assessment and gather information (existing data and interviews on site) on the status of the populations of monk seal (*Monachus monachus*) and loggerhead turtle (*Caretta caretta*) along the Albanian coast (White et al. 2006). It was suggested that suitable (potential) monk seal habitats exist along the southern coast of Albania, stretching from Karaburuni and Rreza e Kanalit to the area around Butrint. Fishermen reported two sightings of monk seal during the summer 2004, one in the Rreza e Kanalit-Karaburuni peninsula and the other close to Saranda harbor.

In another publication (Antolović *et al*. 2005), 17 caves that seemed to be of some importance as monk seal shelters were located between the small gulf of Grama and the northern tip of Karaburuni.

All caves identified as potential monk seal shelters during the 1999 survey (Antolović *et al*, 2005) were re-examined. Based on the researchers' experience on several similar surveys carried

out in the Greek islands in the Ionian Sea, only one cave located in the west coast of Karaburuni peninsula could be characterized as an important monk seal shelter.

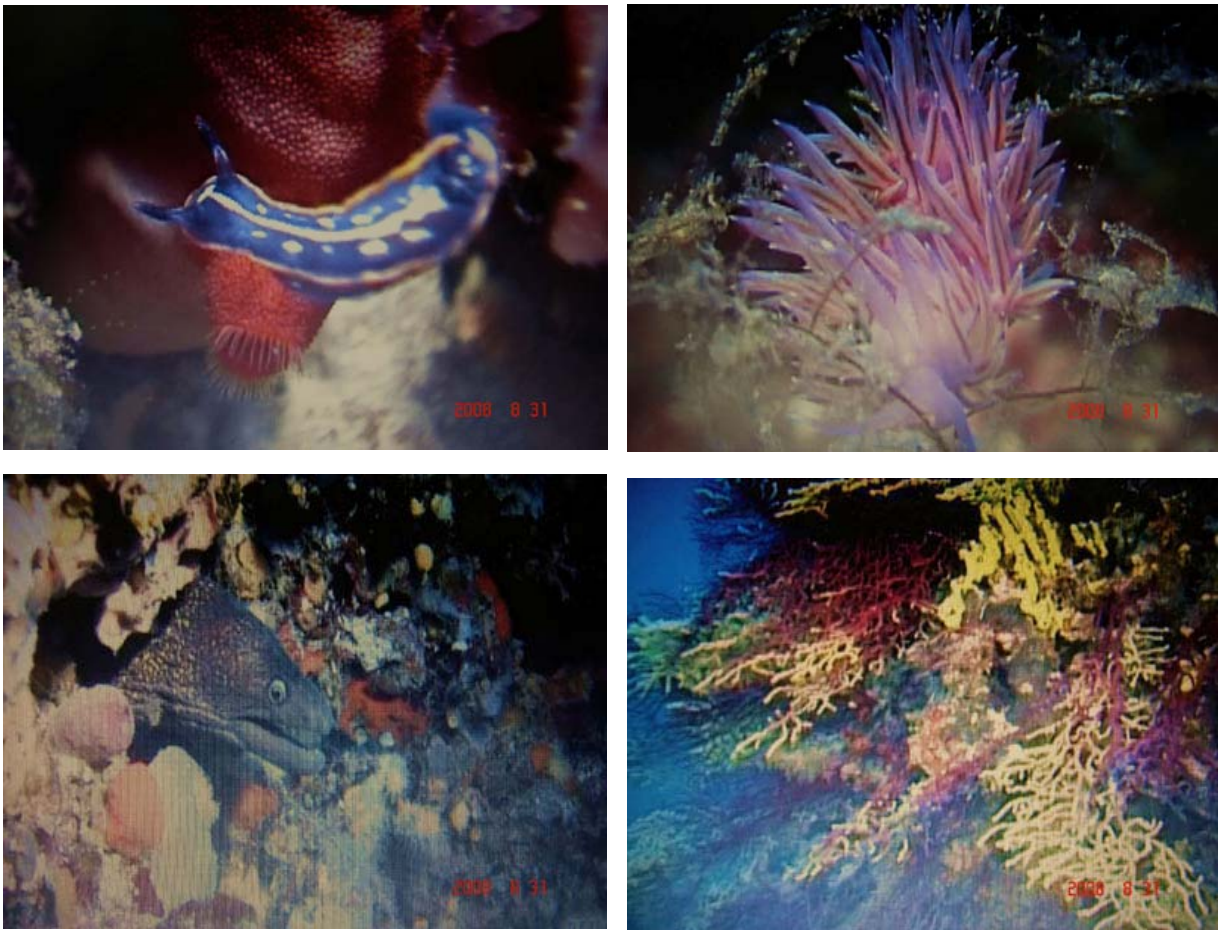


Figure 37: Different animal species from the coralligenous zone of Karaburuni (photos: BluSub, 2008)

Historical and cultural values

Karaburuni area and Vlora bay are well-known for their historical and cultural values. Orik (Orikum), in the south-eastern part of Karaburuni peninsula has been an important economic and cultural center in the Mediterranean during the ancient Greek and Roman periods.
In the western coast of Karaburuni, Grama bay is the only suitable and safety place for ship anchoring and it was a famous harbor since thousand of years. On the rocks of Grama bay there are abundant inscriptions in old Greek and Latin languages, dating more than 2000 years. The series of caves have legends associated with them. Grama is considered as the richest "rocky diary" in the Mediterranean.
In the underwater habitats of Karaburuni, a considerable number of wrapped ships and many archaeological objects are testimony of the relations of this area with other civilizations of the Greek and Roman periods. Divers can also see the traces of the two world wars of the 20th century. These values make this area as one of the most potential area of the Albanian coast as a tourist destination in historic, cultural and archaeological aspects, besides the high variety of

landscape in geomorphologic and environmental aspects. Underwater topography with interesting caves and very diverse microhabitats, as well as the presence of the wrapped ships are additional tourism values, especially for divers.

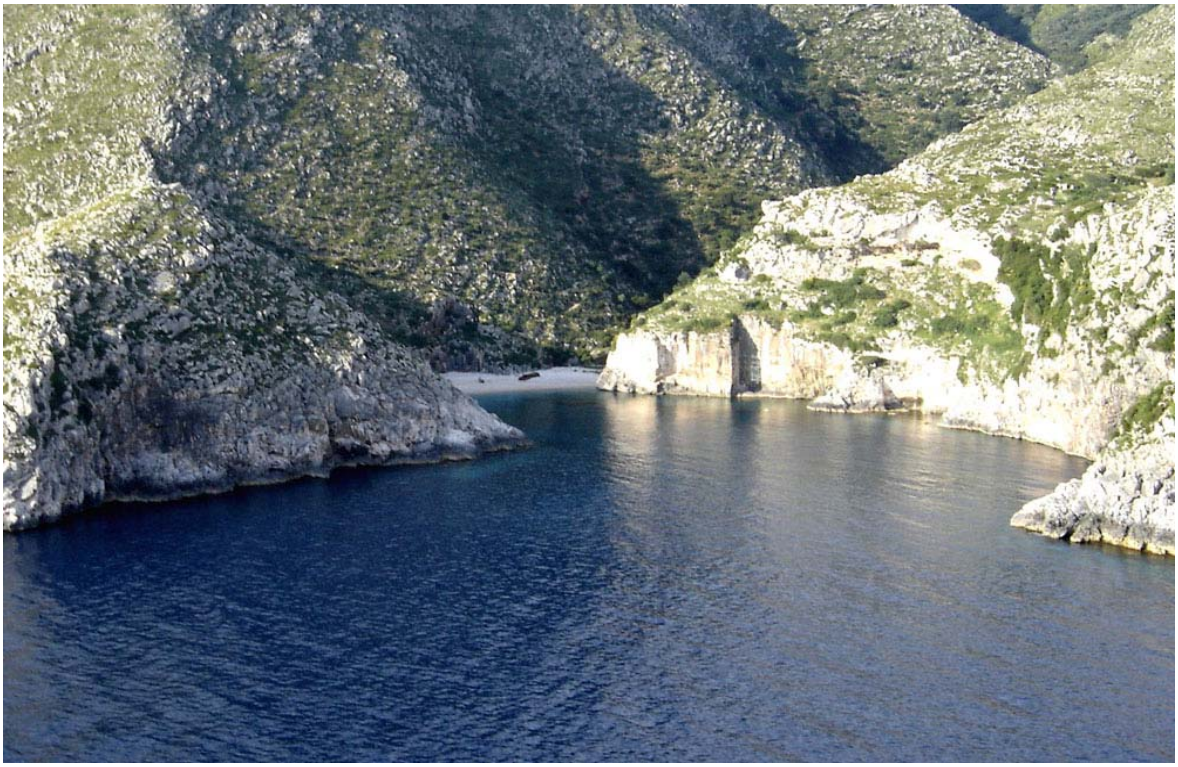


Figure 38: Grama bay at the Rreza e Kanalit ridge - Nature monument

Figure 39: Inscriptions on the rocky wall of Grama bay (photos: Kashta, 2009)

Figure 40: The western shore of Karaburuni is spectacular, with small gulfs and isolated beaches with deep and clear water. Dafina bay and Grama bay (photos: Kashta, Tilot)

Tab.6: Marine species of international concern in Karaburun – Sazani area, listed in the most important Conventions

Species name	Barcelona protocol (1996)		Bon (2006)		CITES (2006)	Bern (1993)
	Ann. II	Ann. III	App. 1	App. 2		
Magnoliophyta						
Posidonia oceanica	+					+
Cymodocea nodosa						+
Phaeophyta						
Cystoseira amentacea var. spicata	+					+
Rhodophyta						
Lithophyllum byssoides	+					
Lithophyllum trochanter	+					
Spongia						
Geodia cydonium	+					
Hippospongia communis		+				+
Spongia officinalis		+				+
Petrobiona massiliana						+
Cnidaria						
Corallium rubrum		+				+
Mollusca						
Ranella olearia	+					+
Tonna galea	+					+
Charonia tritonis	+					+
Zonaria pyrum	+					+
Pholas dactylus	+					+
Pinna nobilis	+					
Lithophaga lithophaga	+				+	+
Crustacea						
Homarus gammarus		+				+
Maja squinado		+				+
Scyllarides latus		+				+
Scyllarus arctus		+				+
Palinurus elephas		+				+

Echinodermata						
Paracentrotus lividus		+				+
Ophidiaster ophidianus	+					+
Centrostephanus longispinus	+					+
Pisces						
Anguilla anguilla		+				
Umbrina cirrhosa		+				+
Thunnus thynnus		+				
Sciaena umbra		+				+
Species name	**Barcelona protocol (1996)**		**Bon (2006)**		**CITES (2006)**	**Bern (1993)**
	Ann. II	**Ann. III**	**App. 1**	**App. 2**		
Hippocampus guttulatus					+	
Epinephellus marginatus		+				+
Xiphias gladius		+				
Reptilia						
Caretta caretta	+		+	+		+
Pinnipedia						
Monachus monachus	+		+	+	+	+
Cetacea						
Tursiops truncatus	+			+	+	+
Delphinus delphis	+		+	+		+

Figure 41: View from Karaburuni of Orikumi lagoon (right side) and the town in the front (photo: M. Xhulaj)

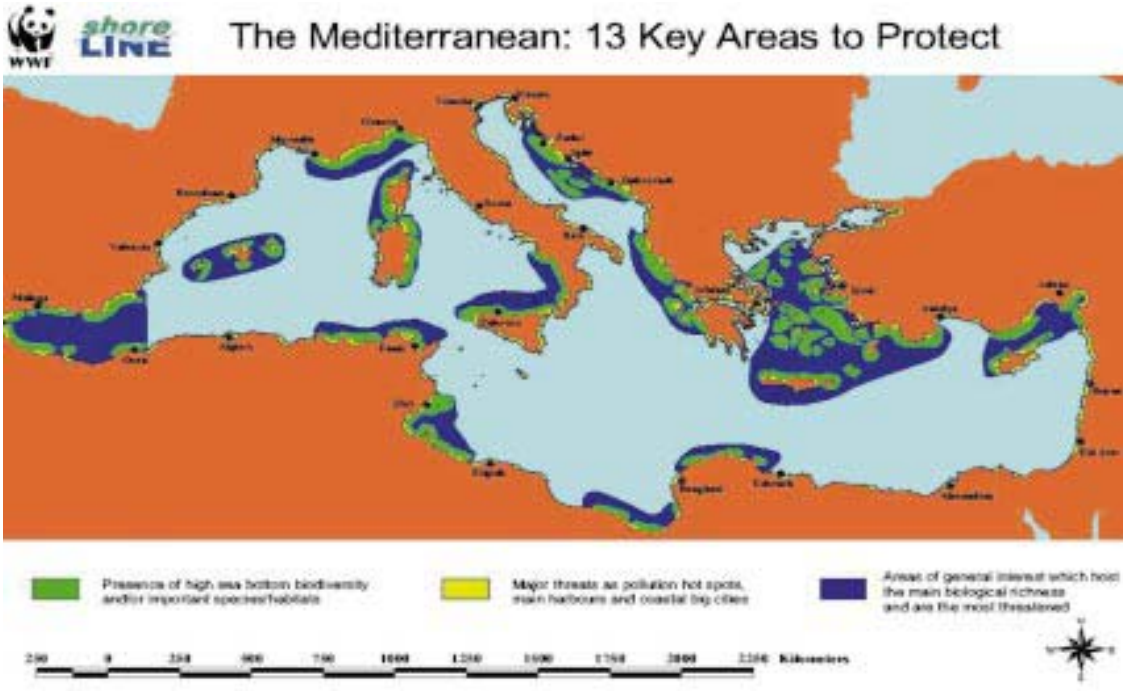


Figure 41/2: This map, produced by WWF International, show 13 key areas with priority for conservation in Mediterranean. Karaburuni – Sazani, in Albanian coast, is part of Eastern Ionian coast and islands area.

Marine species of national concern in Karaburun – Sazani area
(after Albanian Red Book 2006)

Seagrasses
Posidonia oceanica
Cymodocea nodosa

Seaweeds (algae)
Cystoseira amentacea var. spicata
Lithophyllum byssoides
Lithophyllum trochanter

Tenarea tortuosa
Bornetia secundiflora
Catenella caespitosa
Digenea simplex
Polyphysa parvula

Sponges
Geodia cydonium
Spongia officinalis
Hippospongia communis
Raspailia viminalis
Petrobiona massiliana

Cnidarians
Aurelia aurita
Chrysaora hysoscella
Actinia cari
Bunodactis verrucosa
Cladocora cespitosa
Corallium rubrum
Eunicella singularis
Eunicella cavolinii

Annelids
Sabella spallanzani

Gastropods
Patella caerulea
Monodonta turbinata
Diodora graeca

Haliotis lamellosa
Aporrhais pespelecani

Ranella olearia
Charonia tritonis variegata
Zonaria pyrum
Tonna galea

Bivalvia
Mytilus galloprovincialis
Lithophaga lithophaga
Pinna nobilis
Pteria hirundo
Glossus humanus
Ostrea edulis
Pecten jacobaeus
Solen marginatus
Chamelea gallina
Tapes decussatus
Venus verrucosa

Crustaceans
Alpheus dentipes
Callianassa tyrrhena
Crangon crangon
Dardanus arrosor
Eriphia verrucosa
Galathea intermedia
Maja squinado
Paguristes oculatus
Palaemon serratus
Palinurus elephas
Penaeus kerathurus
Scyllarus arctus

Echinoderms
Paracentrotus lividus
Ophidiaster ophidianus
Centrostephanus longispinus

Fishes

Hippocampus guttulatus
Mola mola

Reptiles
Caretta caretta

Pinnipedia
Monachus monachus

Cetaceans
Delphinus delphis
Tursiops truncatus

***Note:* in the *Red List of Albanian Fauna 2007* there are about 220 species of marine fauna. About 75% of them have been reported also for Vlora area, including Karaburun – Sazan.**

3.2.4. Canyon of Gjipe

Surface:	1200 ha;
Current protection status:	Landscape Protected Area;
IUCN Category:	V

The Canyon of Gjipe is situated in south Albania, between Dhermi and Vuno, two villages close to the small town of Himara. The canyon has been created from the Gjipe gorge, which flow through a calcareous bedrock until the sea, creating a small and beautiful beach. Gjipe gorge and its canyon represent a unique geographical characteristic. The canyon measures a narrow strait 10-20 m wide and over 800 m long. The scenery is wonderful and close by is the beach of Gjipe with clean sand and sea. On the both sides of the beach there is a typical rocky coast eroded by the waves and some small caves.

The typical vegetation cover is represented by the associations *Oleo-Ceratonietum*, with *Ceratonia siliqua* and *Olea europaea* subsp. *sylvestris,* which form fragmented patches.
The association *Chrysopogono-Phlometum fruticosae*, with *Phlomis fruticosa* as dominant species, is also present there. In the upper part of the canyon grows up *Hypericum haplophylloides*, an endemic hedge plant. Coastal vegetation on the beach has a low cover and is composed manly by the species *Cakile maritima, Salsola kali, Inula crithmoides* and *Otanthus maritimus.*

Noteworthy plant species
Endemic and subendemic species: *Hypericum haplophylloides, Limonium anfractum.*
Relict species: *Quercus ithaburensis* subsp. *macrolepis*
Rare and threatened species: *Athamanta macedonica, Brassica oleracea subsp. oleracea, Prunus webbii, Limonium anfractum, Hypericum haplophylloides, Lotus cytisoides, Desmazeria marina, Capparis spinosa.*

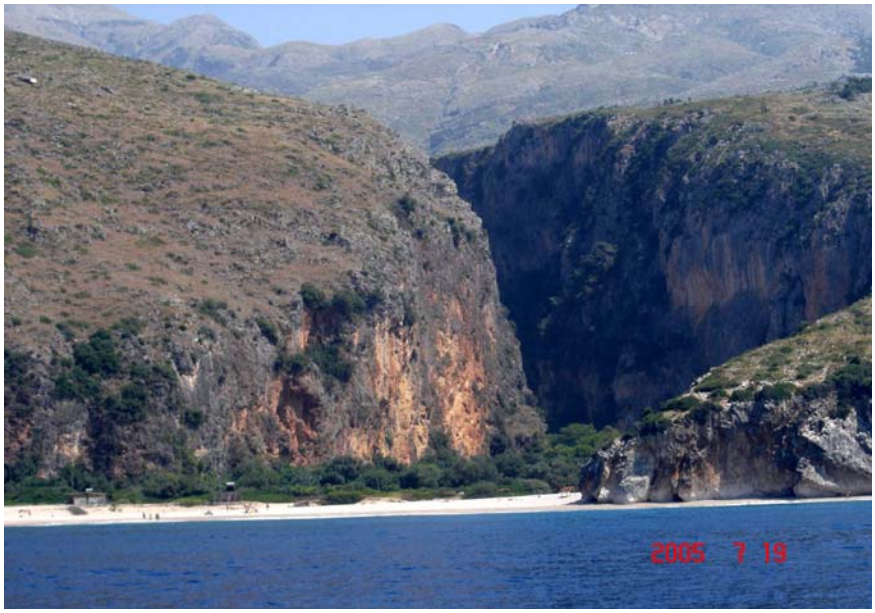


Figure 42: Canyon of Gjipe and its small beach – Nature Monument (photo: L. Kashta)

The most important marine habitats

Mediolitoral zone
Biocenosis of the upper mediolittoral rock
Biocenosis of the lower mediolittoral rock

Infralitoral zone
Biocenosis of the *Posidonia oceanica* meadows
Biocenosis of infralittoral algae

On the biocenosis of the lower mediolittoral rock it is important to note the presence of some calcareous algae, particularly *Lithophyllum byssoides* and *Lythophyllum trochanter*, which form small isolated cushioning bioconstructions.

***Posidonia oceanica* meadows (=Association with *Posidonia oceanica*)**

In front of the beach and on its both sides, a continuous *Posidonia oceanica* meadow, which covers 60% of sea bottom, is relatively good developed. Due to the water clarity, *Posidonia oceanica* meadows have been observed occurring in waters exceeding 23 m in depth.
These meadows are generally continuous and dense, with isolated sand patches, where another seagrass *Cymodocea nodosa* grows up.
Considerable surfaces of degraded meadows are recorded at about 20 meters depth. Sand excavation and turbidity may have been the main factors of this heavy degradation (Kashta *et al.*, 2005).

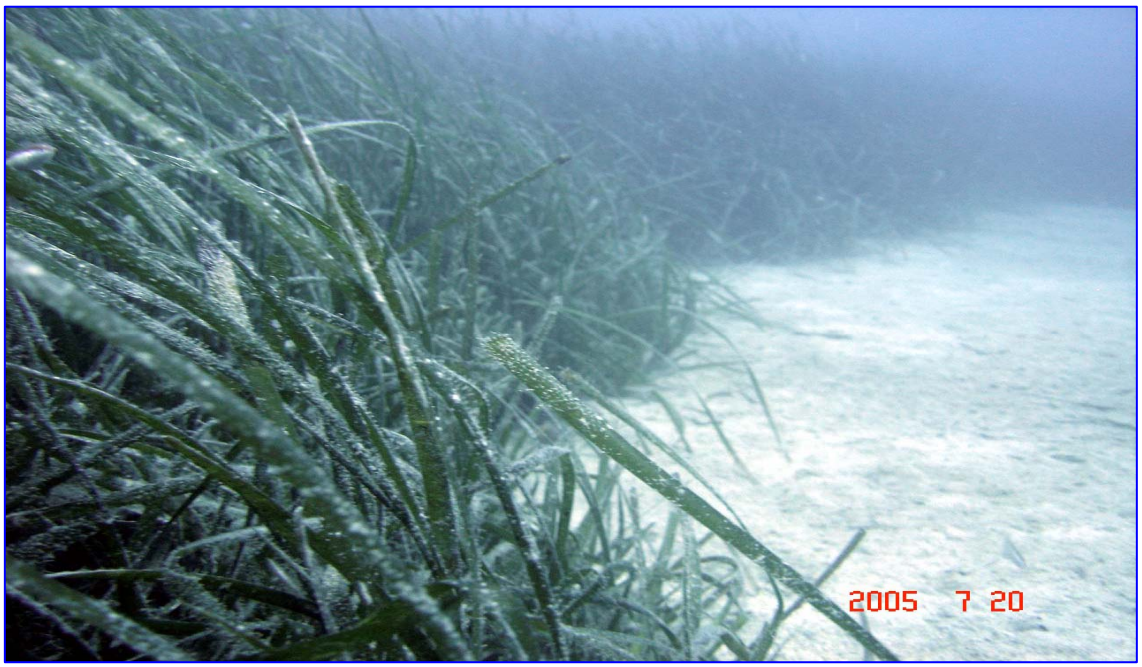


Figure 43: The lower depths limit growth of *Posidonia oceanica* meadow at 23 m in Gjipe (photo: Kashta, 2005)

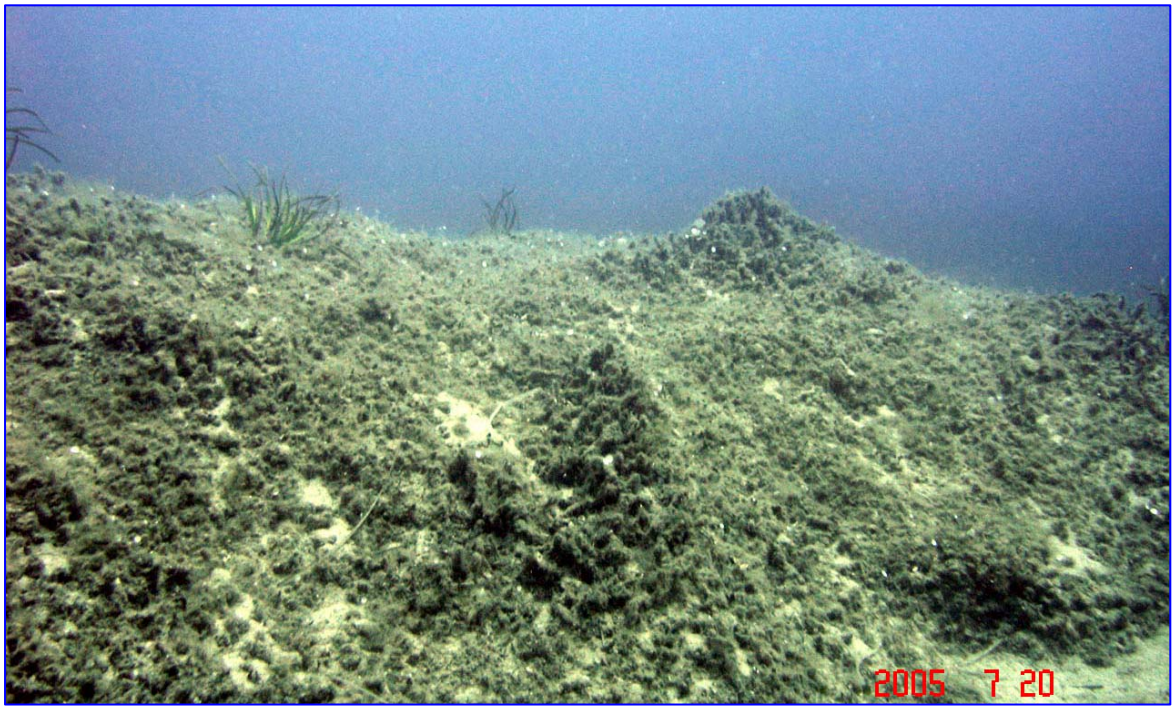


Figure 44: A dead *Posidonia oceanica* bed (about 18m depths) is a result of sand extraction from the sea bottom in Gjipe, near Himara coast. Only isolated shoots have been remained alive (photo: Kashta, 2005)

Other algae recorded in Gjipe area

Rivularia atra, Lithophyllum incrustans, L. tortuosum, L. trochanter, Pseudolithophyllum expansum, Hildenbrandtia rubra, Peyssonnelia squamaria, P. rubra, Sphaerococcus coronopifolius, Colpomenia sinuosa, Cladostephus spongiosum f. verticillatum, Halopteris scoparia, Dictyopteris polipodioides, Padina pavonica, Cystoseira amentacea var. spicata, C. discors, Acetabularia acetabulum, Codium bursa, C. adhaerens.

Data on marine fauna

Studies on marine fauna in Gjipea area have been very limited. Most of data are gathered from sporadic collections. Despite the limited existing data, there is a considerable number of endangered species of international and national concern (see the lists below).

Tab.7: Marine species of international concern in Gjipe area, listed in the most important Conventions

Species name	Barcelona protocol (1996)		Bon (2006)		CITES (2006)	Bern (1993)
	Ann. II	Ann. III	App. 1	App. 2		
Magnoliophyta						
Posidonia oceanica	+					+
Cymodocea nodosa						+
Phaeophyta						
Cystoseira amentacea var. spicata	+					+
Rhodophyta						
Lithophyllum byssoides	+					
Lithophyllum trochanter	+					
Spongia						
Geodia cydonium	+					
Hippospongia communis		+				+
Spongia officinalis		+				+
Petrobiona massiliana						+
Crustacea						
Homarus gammarus		+				+
Maja squinado		+				+
Scyllarides latus		+				+
Palinurus elephas		+				+
Echinodermata						
Paracentrotus lividus		+				+
Ophidiaster ophidianus	+					+
Pisces						
Carcharodon carcharias	+		+	+	+	+
Reptilia						
Caretta caretta	+		+	+		+
Cetacea						
Ziphius cavirostris	+					+
Delphinus delphis	+		+	+		+
Tursiops truncatus	+			+	+	+

Marine species of national concern in Gjipe area
(after Albanian Red Book 2006 and National Red List 2007)

Seagrasses
Posidonia oceanica
Cymodocea nodosa

Seaweeds (algae)
Cystoseira amentacea var. spicata
Lithophyllum byssoides
Lithophyllum trochanter

Sponges
Geodia cydonium
Petrobiona massiliana
Spongia officinalis
Hippospongia communis
Raspailia viminalis

Cnidarians
Bunodactis verrucosa
Actinia cari

Gastropods
Patella caerulea
Patella rustica

Patella ulyssiponensis
Haliotis lamellosa

Bivalves
Mytilus galloprovincialis

Crustaceans
Brachynotus sexdentatus
Calappa granulata
Palaemon serratus
Palinurus elephas
Pinnotheres pisum
Hippolyte longirostris
Thoralus cranchii
Homarus gammarus
Maja squinado
Pisa armata
Scyllarides latus

Echinoderms
Paracentrotus lividus
Ophidiaster ophidianus

Fishes
Carcharodon carcharias
Chimaera monstrosa

Reptiles
Caretta caretta

Cetaceans
Ziphius cavirostris
Tursiops truncatus
Delphinus delphis

3.2.5. Porto Palermo

Surface: 600 ha;
Current protection status: Strict Nature Reserve;
IUCN Category: I

Porto Palermo bay, known as Panorma bay in ancient times, is situated in southeast of Himara town, between peninsula of Panorma and peninsula of Kavadon, at the Ionian Sea.
Inside of the bay there is a small and attractive rocky peninsula, which enters about 300 meters to the sea. Here is a fortress, constructed by Ali Pasha of Tepelena at the end of 18th century in the honor of his wife, Vasiliqia.
Porto Palermo is a protected bay and had a very limited access in the former time (until 1991), as it was a military area. Nevertheless, due to the traffic of military vessels, this area might have been impacted. In the recent years a small fish farm has been established within the bay.
The surrounding area is barren, but the peninsula is covered by ever-green mediterranean vegetation.

Figure 45: General view of Porto Palermo bay with the peninsula and the fortress (photo: Kashta, 2009)

5330 Thermo-Mediterranean and pre-desert scrub (Natura 2000)

32.22 - Tree-spurge formations
Stands of *Euphorbia dendroides*, remarkable tertiary relict of Macaronesian origin;

The association with tree spurge (*Euphorbia dendroides*) is considered as the most interesting for this area and near unique in Albania. This area also represents the first degraded grade of *Quercus ilex*, growing on calcareous formation.
The floristic composition of this association consists mainy in: *Anagyrris feotida , Salvia triloba, Lotus cytisoides, Phlomis fruticosa, Glaucium flavum, Galium aparine, Pistacia terebinthus, Salvia triloba, Calicotome villosa, Spartium junceum, Ruscus aculeatus, Asparagus acutifolius, Urginea maritima, Asphodelus aestivus, Chrysopogon gryllus, Acanthus spinosus, Trifolium angustifolium, Brassica incana, Paliurus spina-christi.*

The association with *Salvia triloba* L. is onother caracteristic association for this area.

Relict species: *Quercus ithaburensis* subsp. *macrolepis, Euphorbia dendroides*.

Rare and threatened species (National Red List 2008): *Athamanta macedonica*, *Brassica oleracea* subsp.*oleracea, Laurus nobilis, Origanum vulgare, Prunus webbii*, *Quercus ilex, Limonium anfractum, Lotus cytisoides, Desmazeria marina, Capparis spinosa, Prasium majus, Olea europea* var.*sylvestris.*

Figure 46: The caracteristic association with *Euphorbia dendroides* and the fish Farm in Porto Palermo (photos: Kashta, 2009)

Coastal and marine habitats

Infralittoral stage

The meadow of *Posidonia oceanica* is in a good state from 3 m to 18 m depth. It is patchy in lower depths and the lowest depth limit has been recorded in 28 m. In the northern part of Porto Palermo, at a depth of 2-3 m, there is a small meadow of the phanerogam plant *Halophila stipulacea*, a lessepsian species, which is a migratory from the Indian Ocean.

In the shallow waters of the area, in the mediolittoral and the upper part of infralittoral the following algae are encountered: *Liagora distenta, Pterocladiella pinnata, Corallina elongata, Jania rubens var. rubens, Lithophyllum incrustans, L. byssoides, L. trochanter, Neogoniolithon*

mamillosum, Tenarea tortuosa, Grateoloupia filicina, Acrosymphyton purpuriferum, Hildenbrandtia rubra, Peyssonelia squamaria, P. rubra, Phyllophora crispa, Sphaerococcus coronopifolius, Botryocladia botryoides, Acrodiscus vidovichii, Osmundaria volubilis, Cladostephus spongiosum f. verticillatum, Cystoseira barbata, C. amentacea var. spicata, Halopteris scoparia, Dictyopteris polipodioides, Dictyota dichotoma, D. linearis, Padina pavonica, Enteromorpha intestinalis, Ulva laetevirens, Chaetomorpha linum, Cladophora prolifera, Valonia utricularis, Acetabularia acetabulum, Halimeda tuna, Flabellia petiolata, Codium bursa, C. adhaerens.

Figure 47: Dense *Posidonia oceanica* meadow in Porto Palermo at 10 meters depth (photo: Mato, 2005)

Marine fauna of Porto Palermo has not been well studied and the data are limited. Most of data are gathered from sporadic collections. Despite this limited data, many marine species of Porto Palermo are of national and international concern.

Although there are no studies related to environmental impact assessments, it is supposed that the fish farm within the Porto Palermo bay creates negative effects to marine biota, especially to Posidonia meadows.

Tab.8: Marine species of international concern in Porto Palermo, listed in the most important Conventions

Species name	Barcelona protocol (1996)		Bon (2006)		CITES (2006)	Bern (1993)
	Ann. II	Ann. III	App. 1	App. 2		
Magnoliophyta						
Posidonia oceanica	+					+
Phaeophyta						
Cystoseira amentacea var. spicata	+					+
Rhodophyta						
Lithophyllum byssoides	+					
Lithophyllum trochanter	+					
Spongia						
Geodia cydonium	+					
Hippospongia communis		+				+
Spongia officinalis		+				+
Petrobiona massiliana						+
Mollusca						
Ranella olearia	+					+
Pinna nobilis	+					
Crustacea						
Homarus gammarus		+				+
Maja squinado		+				+
Scyllarides latus		+				+
Palinurus elephas		+				+
Echinodermata						
Paracentrotus lividus		+				+
Ophidiaster ophidianus	+					+
Pisces						
Carcharodon carcharias	+		+	+	+	+
Reptilia						
Caretta caretta	+		+	+		+
Cetacea						
Ziphius cavirostris	+					+
Delphinus delphis	+		+	+		+
Tursiops truncatus	+			+	+	+

Marine species of national concern in Porto Palermo
(after Albanian Red Book 2006 and National Red List 2007)

Seagrasses
Posidonia oceanica
Cymodocea nodosa

Seaweeds (algae)
Cystoseira amentacea var. spicata
Lithophyllum byssoides
Lithophyllum trochanter

Sponges
Geodia cydonium
Petrobiona massiliana
Spongia officinalis
Hippospongia communis

Cnidarians
Bunodactis verrucosa
Actinia cari

Bivalves
Mytilus galloprovincialis
Pinna nobilis
Ostrea edulis

Gastropods
Patella caerulea
Patella rustica

Patella ulyssiponensis
Haliotis lamellosa
Monodonta turbinata

Ranella olearia
Stramonita haemastoma

Crustaceans
Brachynotus sexdentatus
Calappa granulata
Palaemon serratus
Palinurus elephas
Pinnotheres pisum
Hippolyte longirostris
Thoralus cranchii
Homarus gammarus
Maja squinado
Pisa armata
Scyllarides latus

Echinoderms
Paracentrotus lividus
Ophidiaster ophidianus

Fishes
Carcharodon carcharias
Chimaera monstrosa

Reptiles
Caretta caretta

Cetaceans
Ziphius cavirostris
Tursiops truncatus
Delphinus delphis

3.2.6. Kakomea Bay and Qefali Cape

Surface: 2200 ha;
Current protection status: Protected Landscape/Seascape Area;
IUCN Category: V

The Bay of Kakomea is situated about 12 km north of Saranda, at the Ionian Sea. It represents an interesting landscape, vegetation, combination of high hills with the beach and a hidden monastery.

Figure 48: Views of Kakomea bay

Characteristic vegetation with *Quercus ithaburensis* subsp. *macrolepis* and accompanying macquis species grow up very close to the sea.

The main accompanying species are: *Pistacia lentiscus, Osyris alba, Andropogon ischaemum, Quercus coccifera, Anthyllis hermannia, Phlomis fruticosa, Thymus capitatus, Chrysopogon gryllus, Rubus ulmifolius, Urginea maritima, Origanum vulgare, Salvia officinalis, Teucrium chamaedrys, Dactylis glomerata* etc.

Rare and threatened species (National Red List, 2008) recorded in the area
Laurus nobilis, Origanum vulgare, *Prunus webbii*, *Quercus ilex*, *Limonium anfractum*, *Lotus cytisoides*, *Desmazeria marina*, *Capparis spinosa*, *Prasium majus, Olea europea* var.*sylvestris.*

Relict species: *Quercus ithaburensis subsp. macrolepis, Laurus nobilis.*

Figure 49: Kakomea: (a) forest formation with *Quercus ithaburensis* subsp. *Macrolepis*; (b) association with *Quercus ilex* (photos: Kashta, 2005)

The most important marine habitats

Infralitoral stage
Biocenosis of the *Posidonia oceanica* meadows

Posidonia oceanica meadows (=Association with *Posidonia oceanica*)

Dense *Posidonia oceanica* meadows cover a large area of sandy bottom in the front of the bay and on its both sides. The meadows start to grow from 3 meters (the upper limit) and extends until more than 21 meters depth (the lower depth limit). In some places, where they are in regress and form dead mattes, the invasive green seaweed (*Caulerpa racemosa* var. *cylindracea)* is recorded.

Figure 50: Exploring in *Posidonia* meadow, at 7 meters depth in Kakomea bay (photo: Kashta, 2005)

Biocenosis of infralittoral algae

Different photophilic algae grow on rocky bottoms of the area, including habitat formers like species of the genus Cystoseira. Sciaphilic seaweeds like *Peyssonelia squamaria*, *Halimeda tuna* and *Flabellia petiolata* are common species in underwater caves and cliffs.

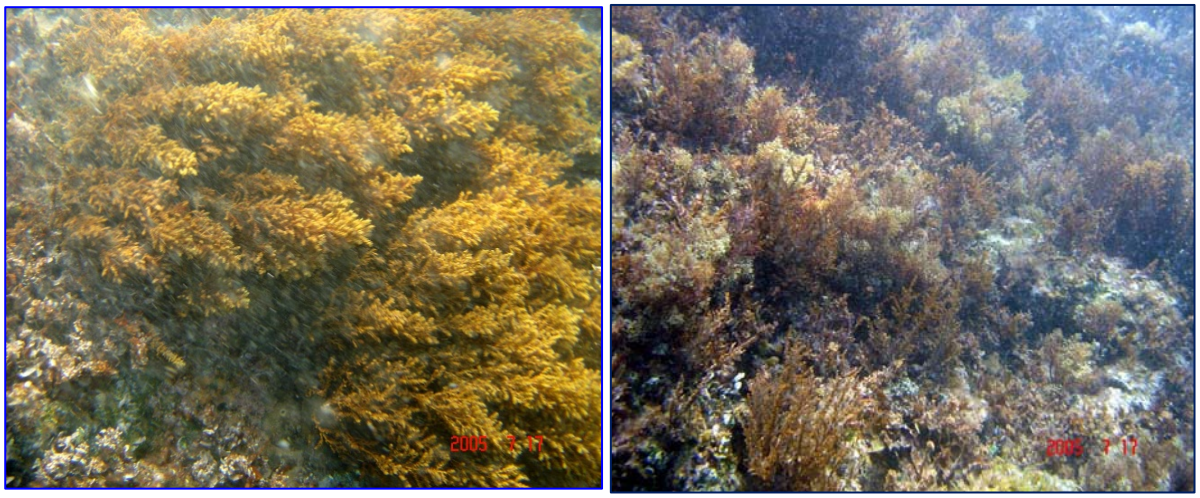


Figure 51: *Cystoseira amentacea* var. *spicata* and other infralitoral photofilous algae (photos: Kashta)

Infralittoral algae recorded for the area:
Gelidium spinosum, Amphiroa rigida, Corallina elongata, Jania rubens var. rubens, Pseudolithophyllum expansum, Peyssonelia squamaria, Ceramium ciliatum var. robustum, C. rumbrum var. barbatum, Laurencia obtusa, Dictyopteris polipodioides, Padina pavonica, Cladophora pellucida, Valonia utricularis, Halimeda tuna, Flabellia petiolata, Codium bursa, Cystoseira amentacea var. spicata, Caulerpa racemosa var. cylindracea.

On the upper infralitoral are recorded diferent invertebrates like sponges *Spirastrella cunctatrix, Spongia officinalis, Cacopsongia* sp., anthozoans *Cladocora caespitosa, Balaniophylla europaea* and molluscs *Patella caerulea, Monodonta turbinata.*
Marine fauna of Kakomea is almost unstudied, except some surveys of macrofauna in the *Posidonia oceanica* beds and some collections from the mediolittoral and upper infralittoral.

Besides the beautiful landscape, nice beach and clean seawater, another tourist attraction is also the monastery of Saint Mary, situated on the hill over the beach. The monastery is comprised of residential buildings situated in the two corners of the courtyard and a church in the center, which is dedicated to Saint Mary. This is a small but interesting church, with frescoes and inscriptions dating from 1672.

Tab.9: Marine species of international concern in Porto Palermo, listed in the most important Conventions

Species name	Barcelona protocol (1996)		Bon (2006)		CITES (2006)	Bern (1993)
	Ann. II	Ann. III	App. 1	App. 2		
Magnoliophyta						
Posidonia oceanica	+					+
Cymodocea nodosa						+
Phaeophyta						
Cystoseira amentacea var. spicata	+					+
Spongia						
Hippospongia communis		+				+
Spongia officinalis		+				+
Mollusca						
Ranella olearia	+					+
Charonia tritonis	+					+
Echinodermata						
Centrostephanus longispinus	+					+
Pisces						
Carcharodon carcharias	+		+	+	+	+
Reptilia						
Caretta caretta	+		+	+		+
Cetacea						
Delphinus delphis	+		+	+		+
Tursiops truncatus	+			+	+	+

Marine species of national concern in Kakomea area
(after Albanian Red Book 2006 and National Red List 2007)

Seagrasses
Posidonia oceanica

Cymodocea nodosa

Seaweeds (algae)
Cystoseira amentacea var. spicata

Sponges
Spongia officinalis
Hippospongia communis

Cnidarians
Eunicella cavolinii
Aurelia aurita
Chrysaora hysoscella

Gastropods
Diodora graeca

Patella caerulea
Monodonta turbinata
Charonia tritonis
Ranella olearia

Hadriana oretea

Bivalves
Mytilus galloprovincialis
Ostrea edulis

Polychaetes
Sabella spallanzani

Crustaceans
Penaeus kerathurus
Hippolyte longirostris
Thoralus cranchii

Echinoderms
Centrostephanus longispinus

Fishes
Carcharodon carcharias
Chimaera monstrosa

Argyrosomus regius

Reptiles
Caretta caretta

Cetaceans
Tursiops truncatus
Delphinus delphis

3.2.7. Çuka Channel - Ksamili Bay and Islands

Surface: 1000 ha;
Current protection status: Landscape Protected Area;
IUCN Category: V

Islands of Ksamil

Ksamili islands consist in 4 small rocky islands with a total surface of 8,9 ha, close to the coast of Ksamili, south of Saranda town, the closest town with the Greek border. They have been created during the Jurassic, as a result of the disjunction of the mainland, due to the water activity. The biggest island is about 5 ha and it is situated 60 m from the coastline; the second one is 1,3 ha and 500 m distant from the coastline; the two other islands are respectively 1,1 ha and 0,8 ha and looks like emerged stones rather than real islands. The islands are covered by vegetation dominated by Mediterranean macquis.

Figure 52: Aerial view of Ksamil Islands. The dark patches show *Posidonia oceanica* meadows.

The most important marine habitats

Mediolitoral zone

Biocenosis of the upper mediolittoral rock
Biocenosis of the lower mediolittoral rock

Infralitoral zone

Biocenosis of the Posidonia oceanica meadows
Biocenosis of infralittoral algae

Posidonia oceanica meadows (=Association with *Posidonia oceanica*)

In Ksamil area *Posidonia oceanica* has created large end dense meadows, which extends more than 30 m depth. Small patches of *Posidonia* are also found in very shallow waters, with leaves almost emerging in the water surface, close to the coast of islands, in an area of coarse sand and gravel. Within this community in shallow waters (3m - 5m) there are also identified small areas with *Cymodocea nodosa* and *Halophila stipulacea.*

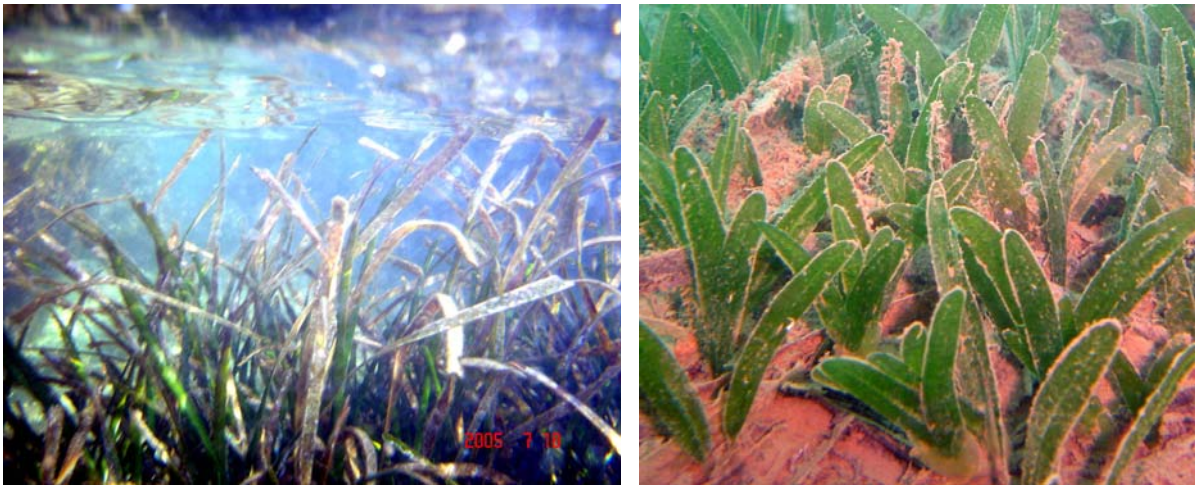


Figure 53: *Posidonia oceanica* growing near the surface and *Halophila stipulacea*, in Ksamili area (photos: Kashta, 2005)

n shallow waters of the rocky coast and gravel substrate, the most common benthic macroinvertebrates were the sponges *Ircinia variabilis, Spongia officinalis*; the gastropods *Patella caerulea, Patella ulyssiponensis, Monodonta turbinata, Gibbula ardens, Gibbula divaricata, Jujubinus exasperatus, Calliostoma zizyphinum, Rissoa ventricosa, Cerithium vulgatum, Hexaplex trunculus, Murex brandaris, Ocinebrina edwardsii, Pisania striata, Nassarius reticulatus, Columbella rustica, Vexillum ebenus, Conus mediterraneus;* the bivalves *Arca noae, Mytilus galloprovincialis, Lithophaga lithophaga, Ostrea edulis, Anomia ephippium, Cerastoderma glaucum, Venus verrucosa, Chamelea gallina* and an abundant population of pagurid crustaceans within the gastropod shells.

The following algae have been reported from Ksamil area: *Bangia atropurpurea, Liagora distenta, Gelidium spinosum, G. spinosum var. hystryx, Amphiroa rigida, A. cryptarthrodia, Halyptilon virgatum, Corallina elongata, Jania rubens var. rubens, J. rubens var. corniculata, Lithophyllum racemus, Pseudolithophyllum expansum, Peyssonelia squamaria, Hypnea musciformis, Botryocladia botryoides, Acrodiscus vidovichii, Ceramium ciliatum var. robustum, Nitophyllum punctatum, Laurencia obtusa, Rhytiphlaea tinctoria, Colpomenia sinuosa, Spacelaria cirrhosa, Halopteris scoparia, H. filicina, Dictyopteris polipodioides, Dictyota dichotoma, Padina pavonica, Cystoseira crinita, C. corniculata, Sargassum vulgare, Cladophora prolifera, C. liebertruthii, Anadiomene stellata, Acetabularia acetabulum,*

Dasycladus vermicularis, Caulerpa prolifera, Halimeda tuna, Flabellia petiolata, Bryopsis muscosa, Codium bursa, C. adhaerens, C. tomentosum.

Ksamil is one the most impacted area in the Albanian Ionian coast. After 1991 a totally uncontrolled tourism and urban development occurred in the area. The consequences are the alteration and damage of natural habitats and the huge reduction of abundance for several species, like *Lithophaga lithophaga, Venus verrucosa, Pinna nobilis*, besides the reduction and fragmentation of *Posidonia oceanica* meadows. Even nowadays, the collection of *Lithophaga lithophaga* and *Venus verrucosa* occur in Ksamil area.

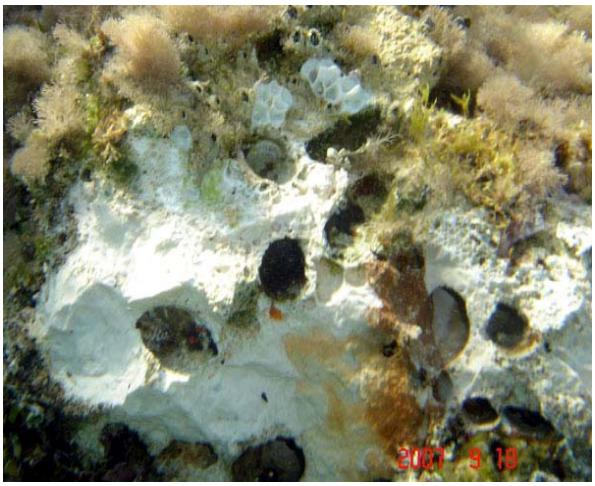


Figure 54: Damaged rocks, due to collection of the date mussel *Lithophaga lithophaga* in Ksamil (photo: Kashta, 2007)

Figure 55: Fish Farm installed near the Ksamili islands in a sheltered place (photo: Kashta, 2007)

Tab.10: Marine species of international concern in Ksamil, listed in the most important Conventions

Species name	Barcelona protocol (1996)		Bon (2006)		CITES (2006)	Bern (1993)
	Ann. II	Ann. III	App. 1	App. 2		
Magnoliophyta						
Posidonia oceanica	+					+
Cymodocea nodosa						+
Spongia						
Geodia cydonium	+					
Hippospongia communis		+				+
Spongia officinalis		+				+
Petrobiona massiliana						+
Cnidaria						
Corallium rubrum		+				+
Mollusca						
Ranella olearia	+					+
Pinna nobilis	+					
Lithophaga lithophaga	+				+	+
Crustacea						
Homarus gammarus		+				+
Maja squinado		+				+
Scyllarides latus		+				+
Scyllarus arctus		+				+
Palinurus elephas		+				+
Echinodermata						
Centrostephanus longispinus	+					+
Paracentrotus lividus		+				+
Ophidiaster ophidianus	+					+
Pisces						
Carcharodon carcharias	+		+	+	+	+
Thunnus thynnus		+				
Anguilla anguilla		+				
Reptilia						
Caretta caretta	+		+	+		+
Cetacea						
Delphinus delphis	+		+	+		+
Tursiops truncatus	+			+	+	+

Marine species of national concern in Ksamil area
(after Albanian Red Book 2006 and National Red List 2007)

Seagrasses
Posidonia oceanica
Cymodocea nodosa
Halophila stipulacea

Sponges
Spongia officinalis
Hippospongia communis
Geodia cydonium
Petrobiona massiliana
Raspailia viminalis

Cnidarians
Actinia cari
Bunodactis verrucosa
Cladocora cespitosa
Eunicella cavolinii
Corallium rubrum
Aurelia aurita

Chrysaora hysoscella

Bivalves
Arca noae
Mytilus galloprovincialis
Lithophaga lithophaga
Pinna nobilis
Ostrea edulis
Acanthocardia tuberculata
Ensis minor
Loripes lacteus
Lucinella divaricata
Macoma cumana
Venerupis geographica
Venus verrucosa

Gastropods
Haliotis lamellosa
Diodora graeca
Patella caerulea
Patella rustica
Monodonta turbinata
Gibbula ardens
Gibbula divaricata
Jujubinus exasperatus
Rissoa ventricosa
Ranella olearia
Hadriana oretea
Stramonita haemastoma
Hexaplex trunculus
Murex brandaris
Fusinus rostratus
Galeoda echinophora
Vexillum ebenus
Nassarius reticulatus

Naticarius stercusmuscarius
Neverita josephinia
Ocinebrina edwardsii
Sphaeronassa mutabilis
Aporrhais pespelecani

Polychaetes
Sabella spallanzani

Crustaceans
Alpheus dentipes
Brachynotus sexdentatus
Eriphia verrucosa
Palaemon serratus
Palinurus elephas
Galathea intermedia
Penaeus kerathurus
Pinnotheres pisum
Hippolyte longirostris
Thoralus cranchii
Homarus gammarus
Maja squinado
Pisa armata
Scyllarides latus
Scyllarus arctus

Echinoderms
Centrostephanus longispinus
Paracentrotus lividus
Ophidiaster ophidianus

Fishes
Carcharodon carcharias
Chimaera monstrosa
Argyrosomus regius

Reptiles
Caretta caretta

Cetaceans
Tursiops truncatus
Delphinus delphis

3.2.8. Pagane – Stillo Cape and Island

Surface:	500 ha;
Current protection status:	Strict Nature Reserve marine and terrestrial;
IUCN Category:	I

This area is the most southern part of the Albanian coast. It is a hilly land with a maximal altitude 269 meters, with dense vegetation of Mediterranean macquis. The coast is rocky and deep. About 1 km south-east of the cape is located the small island of Stillo covered by vegetation characterized by the predominance of *Laurus nobilis*.
The main accompanying plant species were: *Spartium junceum, Phlomis fruticosa, Pistacia lentiscus, P. terebinthus, Quercus coccifera, Asparagus acutifolius, Ruscus aculeatus.*

Figure 56: View of the Stillo Cape (photo: Kashta, 2005)

a b

Figure 57: (a) Association with *Quercus ithaburensis subsp. macrolepis* in Ftelia bay*; (b)* Assoc. with *Laurus nobilis* in Island of Stillo (photos: Kashta, 2005)

Rare and threatened plant species: *Laurus nobilis, Origanum vulgare, Prunus webbii, Quercus ilex, Limonium anfractum, Lotus cytisoides, Desmazeria maritima, Capparis spinosa, Prasium majus.*

Coastal and marine habitats

Infralittoral stage
Biocenosis of infralittoral algae

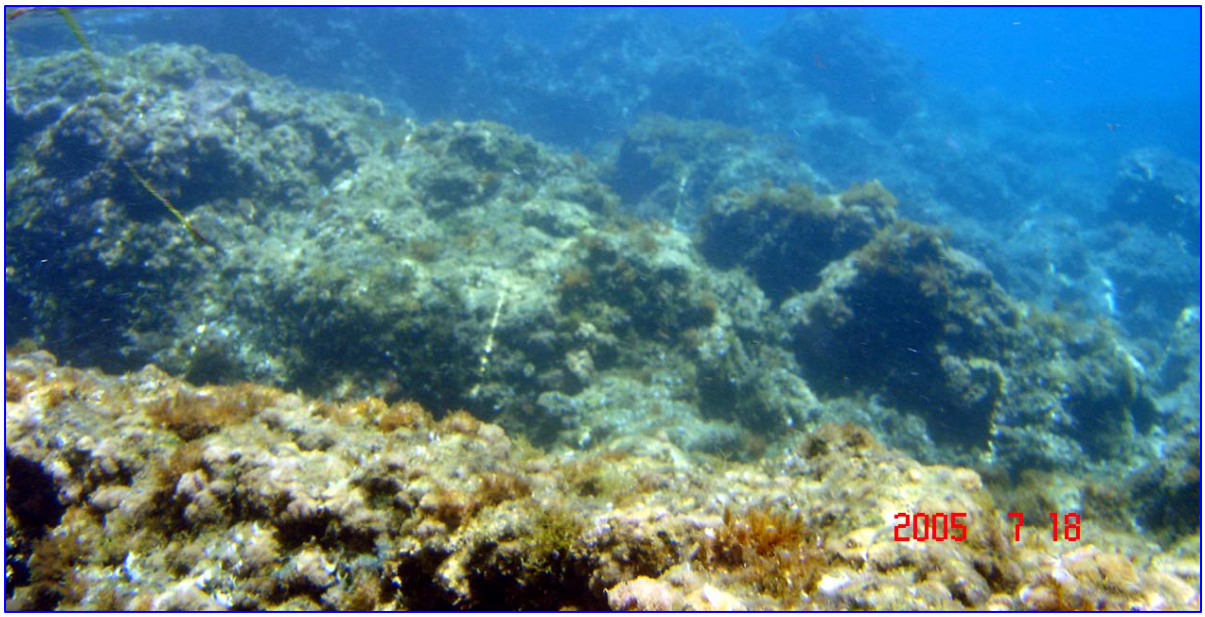


Figure 58: The upper infralittoral dominated by the biocenosis of photophilic algae of the rocky bottom in Stillo Cape (photo: Kashta, 2005)

Biocenosis of the *Posidonia oceanica* meadows
Posidonia oceanica meadows (=Association with *Posidonia oceanica*)

In this area *Posidonia oceanica* grows on rocks and coarse sandy bottom in depths ranging from 5 to 25 meters. Isolated shoots of Posidonia can arise deeper than 28 meters on sandy-silt bottom.

From 8 to 20 meters depth the seagrass meadows are generally continuous and dense, interrupted from rocks and dead mattes, especially around 10 meters depth. On the dead mattes grow the invasive green weed *Caulerpa racemosa* var. *cylindracea*.

The leaves of Posidonia are heavily epiphyted by crust-forming calcareous algae, hydrozoans and bryozoans.

Biocenosis of well sorted fine sands

Association with *Halophila stipulacea*

Small meadows of *Halophila stipulacea* grow on sandy beds that are enriched with fine particles, especially at the edges of *Posidonia oceanica* meadow.

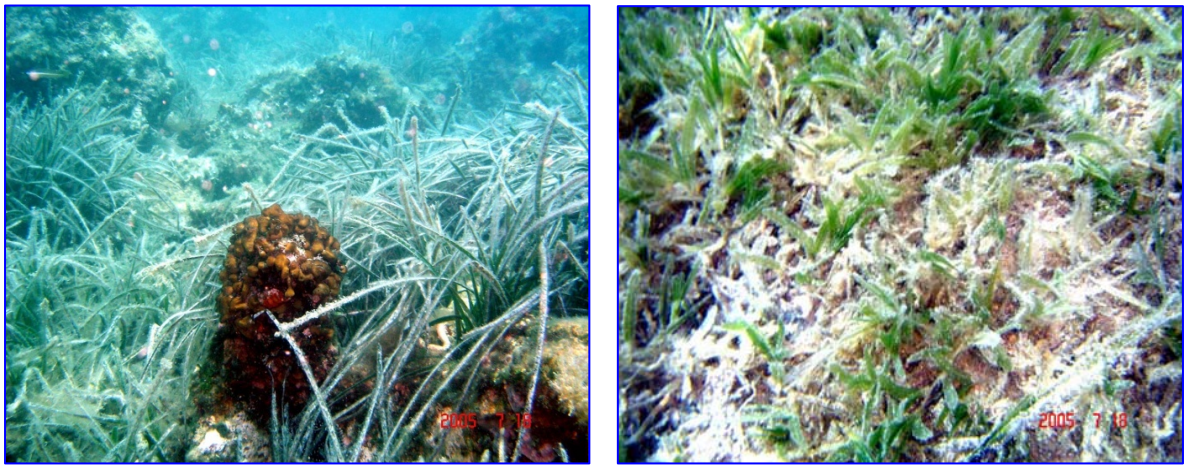


Figure 59: *Posidonia oceanica* meadow on rocky seabed and *Halophila stipulacea* meadow on sand in Stillo Cape (photos: Kashta 2005)

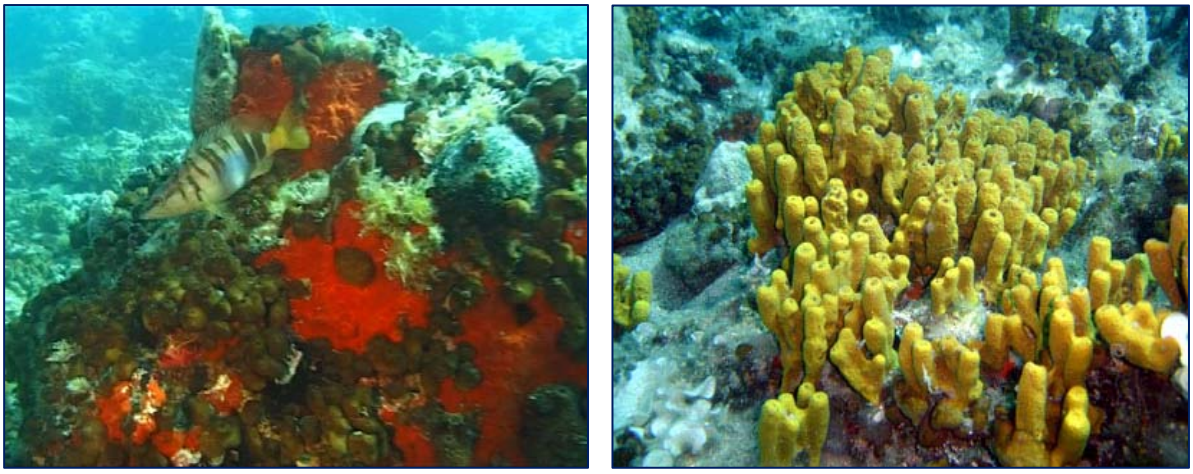


Figure 60: Different sponges grow up on rocky bottoms in Stillo Cape (photos: Kashta, 2005)

The most common benthic animal species recorded in Stillo Cape were sponges *Chondrilla nucula, Ircinia variabilis, Spirastrella cunctatrix, Cacospongia* sp., *Aplisina aerophoba, Phorbas tenacior*, anthozoans *Actinia equina* and *Cladocora caespitosa,* echinoderms *Echinaster sepositus, Marthasteria glacialis, Holothuria tubulosa*, gastropods *Diodora gibberula, Jujubinus striatus, Alvania lineata, Bittium reticulatum, Conus mediterraneus,* bivalves *Pinna nobilis, Acanthocardia tuberculata, Cardita sulcata*, scaphopod *Dentalium vulgare*, polychaete annelids of Serpulidae and Vermiculariidae, as well as accompanying fish schools of *Chromis chromis*, *Diplodus sargus, Sarpa salpa* etc.

From 3m to 7m depth it was recorded an interesting and very dense community of sponges, dominated mostly by *Chondrilla nucula, Aplysina aerophoba* and *Spirastrella cunctatrix* (fig. 55).

Tab.11: Marine species of international concern in Stillo Cape, listed in the most important Conventions

Species name	Barcelona protocol (1996)		Bon (2006)		CITES (2006)	Bern (1993)
	Ann. II	Ann. III	App. 1	App. 2		
Magnoliophyta						
Posidonia oceanica	+					+
Spongia						
Geodia cydonium	+					
Hippospongia communis		+				+
Spongia officinalis		+				+
Petrobiona massiliana						+
Mollusca						
Ranella olearia	+					+
Pinna nobilis	+					
Lithophaga lithophaga	+				+	+
Crustacea						
Homarus gammarus		+				+
Maja squinado		+				+
Scyllarides latus		+				+
Scyllarus arctus		+				+
Palinurus elephas		+				+
Echinodermata						
Centrostephanus longispinus	+					+
Paracentrotus lividus		+				+
Ophidiaster ophidianus	+					+
Pisces						
Carcharodon carcharias	+		+	+	+	+
Thunnus thynnus		+				
Anguilla anguilla		+				
Reptilia						
Caretta caretta	+		+	+		+
Cetacea						
Delphinus delphis	+		+	+		+
Tursiops truncatus	+			+	+	+

Marine species of national concern in Stillo Cape
(after Albanian Red Book 2006 and National Red List 2007)

Seagrasses
Posidonia oceanica
Halophila stipulacea

Sponges
Spongia officinalis
Hippospongia communis
Geodia cydonium
Petrobiona massiliana
Raspailia viminalis

Cnidarians
Actinia cari
Bunodactis verrucosa
Cladocora cespitosa
Eunicella cavolinii
Aurelia aurita
Chrysaora hysoscella

Bivalves
Arca noae
Mytilus galloprovincialis
Lithophaga lithophaga
Pinna nobilis
Ostrea edulis
Acanthocardia tuberculata
Ensis minor
Loripes lacteus
Lucinella divaricata
Macoma cumana
Venerupis geographica
Venus verrucosa

Gastropods
Haliotis lamellosa
Diodora graeca
Patella caerulea
Patella rustica
Monodonta turbinata
Gibbula ardens
Gibbula divaricata
Jujubinus exasperatus
Rissoa ventricosa
Ranella olearia
Hadriana oretea
Stramonita haemastoma
Hexaplex trunculus
Murex brandaris
Fusinus rostratus
Galeoda echinophora
Vexillum ebenus
Nassarius reticulatus

Naticarius stercusmuscarius
Neverita josephinia
Ocinebrina edwardsii
Sphaeronassa mutabilis

Polychaetes
Sabella spallanzani

Crustaceans
Alpheus dentipes
Brachynotus sexdentatus
Eriphia verrucosa
Palaemon serratus
Palinurus elephas
Galathea intermedia
Penaeus kerathurus
Pinnotheres pisum
Hippolyte longirostris
Thoralus cranchii
Homarus gammarus
Maja squinado
Pisa armata
Scyllarides latus
Scyllarus arctus

Echinoderms
Centrostephanus longispinus
Paracentrotus lividus
Ophidiaster ophidianus

Fishes
Carcharodon carcharias
Chimaera monstrosa
Argyrosomus regius

Reptiles
Caretta caretta

Cetaceans
Tursiops truncatus
Delphinus delphis

4. The first Marine Protected Area proposed for Albania

4.1. *Introduction*

All economic development activities are dependent to some extent on the quality of natural resources. The coastal (marine and terrestrial) natural resources are essential for the future development of any country, in particular for international communication and exchange and tourism, two sectors increasingly important and source of Government revenue.

However, excessive development, unregulated activities, and incompatible use can degrade the natural resources and put economic investments at risk. This report intends to propose to the decision makers an option for integrating sustainable development and conservation of natural resources through the declaration of the first marine protected area of Albania, associating different levels of management through a zoning of the marine area.

A summary presentation of the coastal-marine area proposed as MPA:

- Karaburuni peninsula was declared a natural reserve in February 22, 1966, but has been heavily impacted by fires, overgrazing, intensive hunting and military practice. Protection has been reactivated in 1986 when the area was declared a "Natural Managed Reserve" of fourth category. It includes natural recreational zones (among which one in the inner part of the Karaburuni peninsula and Rreza e Kanalit), two natural monument zones (at the tip of the peninsula, at pil Gallovecit and at Grames bay and cave, plazhi i Grames) and the presence of exceptional coralligenous, e.g. "Gryk a Djallit", a buffer zone (Mali i Karaburuni, Ravena, Orikumi and an area extending to Dukati) and two natural recreational/touristic zones (Brisanit and the inner part of Karaburini peninsula, within Vlores bay). The National park of Llogara (kampi i pushimit, a strictly protected zone) and the Cikes mountain (Mbihipja e Cikes, a natural monument zone) are included in this unit.
- Sazani Island, separated from the northern tip of the Karaburuni peninsula by the Mezokanali strait. This island is a natural recreational/touristic zone with remarkable cliffs and landscapes.

The Vjose-Narta Wetland Complex extending North of Vlora to Vjose river, is classified as the Vjoses Narta Landscape Protected Area. This wetland complex is also a site of international importance as it fulfills the Ramsar criteria (Wetlands of International Importance) for the total number of wintering waterbirds.

- It includes strictly protected areas and natural recreational zones along the coastal part of the lagoon in contact with the Adriatic sea, buffer zones in the laguna, sustainable development zones in the inner part and a touristic activity zone in the south on the Adriatic sea. The Pishe Poro forest managed nature reserve, the Sode Zvernecit forest and the Zvernecit island monastery are part of the Nartes area.

- Vlora bay covered by important *Posidonia oceanica* seagrass meadows and, at the bottom of the bay of Vlores, the Orikumi lagoon which includes a military zone on the bay of Vlores (Pasha Limani) and in the southern part of the laguna, an area of natural recreation bordered by a buffer zone.

The whole area displays the highest biodiversity values in the country (NEA, 1999) due to its diversity of habitats and its richness in flora and fauna species. Many of them have a conservation concern at international, national and regional level, as follows:

- alpine and subalpine pastures and meadows,
- Macedonian fir (*Abies borissi-regis*) forest mixed with pine forests of *Pinus nigra*, *Pinus leucodermis*,
- mixed deciduous woodland with *Quercus coccifera, Q. macrolepis*,
- typical Mediterranean maquis,
- north limit of alliance *Oleo-Ceratinion,*
- typical rocky coastal vegetation,
- wetlands with residues of alluvial forests,
- lagoons and assosciated ecosystems highly valued for their natural and biodiversity resources,
- a well developed littoral and benthos,
- Posidonia meadows *Posidonia oceanica*,
- in the marine waters one can frequently find dolphins *Delphinus delphis, Tursiops truncates*,
- the monk seal *Monachus monachus* may visit the caves and shores of the Karaburuni peninsula,
- Endemic, subendemic, and many rare and threatened taxa occur inside the area,
- High potential for eco-tourism and recreation development.

Except for the wetlands, the coastal area is mainly rocky with, in some places, important calcareous limestone cliffs covered by typical Mediterranean vegetation and locally along the coast, pocket beaches of pebbles and sand. This entire rocky coast presents exceptional scenic quality especially by boat when visiting caves, canyons and small bays, e.g., Shpella e Haxhi Alisë and Duk Gjoni caves (Fremuth, 2000; Pergent, 2002; Qiriazi and Sala, 2006; Sala *et al.,* 2006; Tilot and Jeudy de Grissac, 1994).

The underwater landscape is also of exceptional quality with cliffs, submarine caves and associated fauna and flora, and in some places archaeological remains (Tilot and Jeudy de Grissac, 1994; Upton, 2006). This area is certainly the best and most impressive part of Albanian coast for the development of nautical activities such as scuba diving which is not well developed in Albania.

The Albanian marine fauna and flora are of special interest since this area is located at the border of three sub-regions: the western and eastern Mediterranean sea and the Adriatic sea. Therefore the fauna and flora include species from mixed origin: strictly mediterranean species, remnant fauna and flora from the Atlantic and migrant fauna from the Indian Ocean through Suez Canal (Peres and Picard, 1964).
The biological diversity is relatively high in the marine waters of Albania with rare species and the littoral benthos much-developed with a typical mediterranean physionomy characterized by the abundance of Mediterraneo-Atlantic species. *Posidonia oceanica* meadows host a relatively high biodiversity of benthic macrofauna including sponges, cnidarians, bryozoans, mollusks, annelids, crustaceans, echinoderms and ascidians (Beqiraj *et al.*, 2008).

Coralligenous algae, a biogenic formation building a rim which can extend locally to more than 1m in width which, are present at the mediolittoral stage along the western coasts of Karaburuni, Sazanit Island and Rreza e Kanalit area.
Three globally endangered sea turtles, with high threatening status (IUCN Red List, 2006) are present in Albanian waters: loggerhead turtles *Caretta caretta*, green turtles *Chelonia mydas* and much more rarely leatherback turtle *Dermochelys coriacea*. The area is also a potential monk seal habitat (monk seals were reported in 1982).

Five species of cetaceans are reported in Albanian waters among which the short-beaked common dolphin *Delphinus delphis*, the common bottlenose dolphin *Tursiops truncatus* and the sperm whale *Physeter macrocephalus* which have been identified by ACCOBAMS as being in the greatest danger of disappearing from the Mediterranean.
The area is also important concerning fisheries. Artisanal fishing exists along the coasts of Rreza e Kanalit-Karaburuni and Sanzanit. Professional fishing use mainly lines and trawling. The fish fauna of commercial interest is made of several species and groups of demersals, small and big fishes, crustacean and molluscs.

Coastal lagoons and estuaries are important areas for wintering of migratory water birds; about 70 species of water-birds have been recorded among which the Dalmatian pelican *Pelecanus crispus* and the pygmy cormorant *Phalacrocorax pygmaeus* for which Albania is reknown. However the bird populations are decreasing dramatically due to several impacts, such as the drainage of wetlands during the communist regime and uncontrolled hunting. According to Birdlife International (2009), the area of Vlora Bay, Karaburuni Peninsula and the Cika Mountain (fact sheet AL010) is listed as an important bird area for Albania.

The coast is mainly composed of xeromediterranean sclerophyllic maquis, locally forest of eumediterranean evergreen forest with pines, cypresses and mainly oaks *Quercion ilicis* and *Oleo-Ceratonion* in the valleys and dry river canyons. Rocky coasts are usually covered by a typical mediterranean maquis which is still quite abundant on Sazanit island and along Rreza e

Kanalit - Karaburuni. The coastal wetlands and dunes are covered mainly by halophytes, psamophytes and other brackish and freshwater associations.

Several underwater archaelogical and historical remains are present in the area in laguna e Nartes (Zvernecit island monastery), Orikumi lagoon, Vlora bay, Karaburuni, e.g. Grames bay.

Based on all the present natural features and points of interest, and on the identified and potential threats (unregulated fishing, uncontrolled coastal development, pollution from land based source and from maritime traffic, tourism activities..), it is recommended to include an important part of the marine environment for surrounding all these features in order to develop an integrated approach (between all responsible administrations) for the management of all the coastal and marine activities for a proper conservation of the natural resources. This will need also a concerted policy for the management of all the sites under conservation to benefit activities such as fisheries and tourism (in particular ecotourism).

Based on the presence of different terrestrial protected areas in the region of Vlora, and in particular the Vjose-Narta Wetland Complex in the North, Orikumi lagoon at the southern bottom of the bay of Vlores, the peninsula of Karaburuni on the western side of the same bay, it is proposed to link all these coastal sites by the creation of an overall marine protected area. The Karaburuni peninsula being the central element for nature conservation and the city of Vlora being the central element for development, it is proposed to designate the site as **the Karaburuni – Vlora Marine Protected Area.**

The zones will follow the international categories of IUCN and the Karaburuni – Vlora area will include a marine park and a different multiple use managed area and a strict marine reserve, therefore allowing, according to the sites, multiple opportunities for development and economic activities or strictly preserved sites for scientific research and monitoring.

Even if there is a lack of knowledge in some parts of the proposed marine protected area, its preliminary approval by the Goverment of Albania for its creation will attract donors for further surveys and support for the management of the marine environment in coordination with the existing terrestrial sites, for the benefit of tourism, traditional fisheries and any other sustainable activity.

The Marine Protected Area of Karaburuni-Vlora (K-V-MPA) is designed to attempt to provide a pragmatic approach aiming at establishing equilibrium between sustainable economic development and natural resource conservation ensuring long term protection and maintenance of biological diversity, while providing at the same time a sustainable flow of natural products and services to support coastal communities' development.

The main objectives of its designation are:

1. To protect and maintain the biological diversity and other natural values of the area in the long term.
2. To promote sound management practices for sustainable production purposes.

3. To protect the natural resources from being alienated for other land-use purposes that would be detrimental to the area's biological diversity.
4. To contribute to the regional and national development.

Many management issues have been identified which include problems that critically could degrade the natural resources values of K-V-MPA such as the risk from maritime transport and coastal pollution, as well as opportunities such as development of tourism, ecotourism or the permanence of fishing and aquaculture activities.

The decision to create the K-V-MPA will necessitate the preparation of a management plan including the definition of the role and functions of the management unit, of the detailed regulations for each zone and for each activity allowed in the area, the recruitment and training of staff, the definition and installation of necessary infrastructures and the preparation of research, monitoring and communication plans. The plan will have to remain adaptive to change in local and regional conditions and responsive to new challenges and opportunities.

4.2. *Main environmental features of the Vlora-Karaburunit area*

4.2.1. General Description

The Vlora-Karaburuni area includes scenic marine and coastal areas characterized by outstanding canyons and caves sites (Karaburuni, Sazanit and Rreza e Kanalit), a large bay covered with important seagrass meadows (Vlora bay) and wetlands (Orikumi and Nartes lagoons).

Vlora bay, extends from Pasha Limani-Orikumi (Gjiri I Dukatit), to cape Gallovecit (west), the coastline passing by capes Kallogjeri, Raguzea, Sevasini, Shën Vasili, Gjatë, Dhim Kushta and Shën Jani. The sea bottom of this bay is covered by important *Posidonia oceanica* seagrass meadows. The coast can be divided in three parts:

- the eastern side of the bay, oriented N-S, with a coastline increasing in altitude from north to south.
- the southern section, 6 km long and oriented WSW-ENE, including Orikumi lagoon is named Dukati bay.
- the western side of the bay, oriented WSW-ENE, includes the eastern side of Karaburuni peninsula which is relatively lower than the western side of the peninsula.

The coast is mainly rocky with small gravel beaches except the eastern part which is sandy and the centre of the bay which is filled by sand and mud. The maximum depth in the central part of the bay is 55 m. The coast includes several gravel beaches: one at cape Kallogjeri, four in the bay of Ragueza, three between cape Raguzea and cape Sevasini, two between cape Sevasini and cape Shën Vasili, one before cape Gjatë, one after cape Dhim Kushta and one bigger beach after cape Shën Jani with military installations and a jetty; from the bay of Veriu to cape Gjuhëza, the coast is about 6 km long and formed of low jagged rocks with low bushy vegetation shaped by the wind. A coastal trail gives access to the northern tip where was located a military base. The

slopes are less important than on the eastern side of the peninsula, culminating to the north at 733 m (Mount Hilqe) and to the south at 826 m (Mount Koreta).

The wetland of Nartes-Zvernec, declared as Vjoses Narta Landscape Protected Area, (IV IUCN Category) is a wetland complex located in Vlora District. The altitude of the wetland site varies between 0-246 m. The main habitats include wetlands, (37%), agricultural land (33%), forests (6%) and urban areas. The core wetland is Narta lagoon, a shallow marshland with salinas (saltpans) in the North. The sand dunes in the former Nature Managed Reserve of Pishe-Poro are well developed. The remarkable Sode Zvernecit forest and the Zvernecit island monastery are part of the area. Kallenga is a shallow lagoon to the North.

Orikumi lagoon covers around 130 ha with a maximal depth of 3 m and is permanently in communication with the sea by a channel 50 m long and has a limited input of freshwater southwards. It is located in a restricted military area. Orikumi is an archaeological site of prime importance. According to specialists, it surpasses Butrinti.

The island of Sazanit (16km long and 3-5km wide), in front of Vlora and north of Karaburuni peninsula, has an ellipsoid form oriented NNW-SSE and culminates at 345 m with Gryka e Djallit.

- The western side is characterized by high vertical cliffs which are incised by deep canyons extended by caves which appear mostly underwater as observed in Karaburuni peninsula.The most important canyons are at cape Pëllumbave and at Gryka e Ferrit.
- On the eastern side, the coastline is lower and is formed in the SW by slanted folds of limestone plunging into the sea.
- Most settlements are built in the center of the island in prolongation of the canyon of Gryka e Ferrit, crossing the island up to the well protected harbour on the bay of Shën Nikolla.

On the western side of the Vlora-Karaburuni area, the coastline of the Karaburuni peninsula extends to Rreza e Kanalit. It varies in altitude, from 15-30 m to 887 m at Mount Bitrit in Karaburuni and 1500 m above sea level at Mont Shendelliut, (1499.5m) in Rreza e Kanalit. The slopes of Karaburuni peninsula are locally very steep on the western side and culminating in the central part. The western coast of the peninsula is incised by caves and deep canyons ending rarely by gravel or sand pocket beaches. It is characterized by high vertical cliffs diving underwater at great depths. These cliffs are quite eroded and numerous caves, mostly underwater, can be seen where freshwater springs often percolate. Karaburuni peninsula is the most evident site of mediterranean quality. It is characterized by a very low level of disturbance. The midlittoral environment is characterized by coralligenous formations sometimes over a meter large built by coralligenous algae *Lithophyllum lichenoides,* a protected species, which is exceptional geomorphologically, biologically and in a touristic aspect. This unit includes national park of Llogara (kampi i pushimit,) and the Cikes mountain (Mbihipja e Cikes) a natural monument zone).

4.2.2. Climate, Geology, Geomorphology, Hydrology

Climate

The area is characterized by a Mediterranean climate with mild winters and abundant precipitation and hot and dry summers. Due to its varying altitude and proximity to the sea, it is

subdivided in 3 subclimates: southern coastal plain, hilly zone and mountainous zone. Mean annual precipitations vary between 1000 and 1200mm and occur mostly in winter, from November to April. The annual solar radiation for the area is about 1540 kwh/m^2 with a peak in July (216.5 kwh/m^2). The mean annual Air humidity is 66% and the mean annual temperature is 17°C varying between 24-26°C in July and 10°C in January. In winter, winds occur mainly from the North East and South with a mean velocity of 7.2m/s with peaks of southern winds reaching 40m/s (UNDP/ GEF/dhe Ministrisë së Mjedisit, 2005).

In the Vjoses Narta complex, the wind pattern is different, as winds are weaker (3.5 m/s), from the East, North-East and slightly stronger (5.2m/s) from the West in summer with the sea breeze. The water temperature in the lagoon is in average 14.9°C. During the dry season, 56% of the water evaporates which indicates that the ecosystem is in need of water resources.

Geology, topography, and geomorphology

The area encompasses two geomorphological units, terrigen formations which can be heavily eroded (flysh, e.g. and quaternary deposits of molas) and carbonate rocks (limestone and limestone-dolomite, with rudists or globotruncana, of upper-Cretacea, e.g. karstic mountains of Rreza e Kanalit-Karaburuni, Cika Mountain in Liogara) (UNDP/ GEF/dhe Ministrisë së Mjedisit, 2005).

Rreza e Kanalit-Karaburuni is characterized by a narrow and steep platform. Cliffs plunge vertically reaching rapidily great depths, with 20m and more at 200m from the shoreline.

The eastern side of Karaburuni peninsula is a succession of rocks of different ages, from Jurassic and Neogene (Aquitanian, Helvetian, Tortonian and Pliocene) eras. The southern part is mainly constituted of Pliocene rocks and recent sediments. The eastern coast is from the upper cretaceous era, essentially composed of limestones.

The western part of Sazanit island is composed of Upper Cretaceous rocks (massive limestones or udists and globotruncana) and the eastern part is composed of rocks of Burdigalian age (lithographic limestones).

The Vjoses Narta complex is composed of quaternary marine sands and gravels of tertiary molasses (sandstones, siltstones, shales and marls) headlands which overlie older carbonate sediments. North of the lagoon are quaternary marshy deposits of clayey silts and sand. The coastline is part of the Narta lagoon syncline formed by Neogene and Quaternary deposits.

Hydrology, drainage and water resources

The limestone formations in the area are characterized by a porous structure and often percolating waters run underground without any obstruction. Groundwaters are rich as displayed by the karstic springs flushing freshwater into the lagoons, e.g. Orikumi lagoon. Along Karaburuni peninsula, freshwater springs can be seen along the coastline, discharging colder water from the seabottom to the surface. However the inner part of the peninsula is desolate and waterless.

Thus groundwater in the K-V-MPA is sufficient to respond to the demands of local population and to the present and future development of the area, in particular for tourism. The exploitation of groundwater and its management, in particular in the Karaburuni-Rreza e Kanalit area (Berxholi, 2001), must be tackled in the planning of the area to meet future demands by additional population, industrial activities and tourism.

The Vjoses-Narta complex is generally poor in groundwater which does not accumulate in shallow sandy deposits. However it can be extracted from hand-dug wells at varying depths (1-10m). Vjoses River is the primary surface water resource for the whole network of irrigation channels serving agriculture.

4.2.3. Biodiversity Resources

As seen in the above chapters in 3.2 (3.2.1 – 3.2.8), the data about natural values, biodiversity, landscape, historical, cultural and socio-economic aspects may have some gaps and these aspects are not completed for every site described there. This is mostly due to the lack of data, since the studies on the coastal and marine areas have been very limited and the available data are very fragmented in some cases.

However, based on the existing data and the analysis made in the previous chapter, the area Sazani Island – western side of Karaburuni Peninsula (analysed in 3.2.3) may be distinguished among the others and proposed as the targeted area for being claimed as the first Marine Protected Area in Albania. Other additional data are also provided by video and photo recording, especially including underwater habitats of this area, as well as other values related to archaeological, historical and cultural aspect. (A special documentary movie and a booklet have been produced recently for this area, aiming to highlight the relevant values for claiming it as a Marine Protected Area).

The coastal part (terrestrial) of Sazani Island and western side of Karaburuni Peninsula is aimed to be included together with the proposed marine protected area, due to its high values of biodiversity and natural habitats. In this context, although mentioning the terminology "Marine Protected Area" (MPA) as the most familiar, as a matter of fact, the proposed area fits to a "Marine and Coastal Protected Area" (MCPA), referring to the definition adopted by the AHTEG (Ad Hoc Technical Expert Group) of the Convention of the Biological Diversity in 2004. According to this definition, *"Marine and Coastal Protected Area" means any defined area within or adjacent to the marine environment, together with its overlying waters and associated flora, fauna, and historical and cultural features, which has been reserved by legislation or other effective means, including custom, with the effect that its marine and/or coastal biodiversity enjoys a higher level of protection than its surroundings*.

In the following there are summarized and highlighted the main features, characteristics and reasons, which distinguish the area Sazani Island – Karaburuni Peninsula among the other potential areas.

<u>Coastal dunes</u>

The coastal dunes are covered mainly by halophytes, psamophytes and other brackish and freshwater associations.

The sand dunes, e.g. Narta complex, along the coast can reach 6-8 m, and compose a belt extending to 30m in shore. The biodiversity is high, with *Ammophiletum arenaria subsp. arundinaceae, Cakile maritima, Xanthium strumarium subsp. italicum, Salsola kali, Elymus farctus and Echinophora spinosa* communities.

Lagoons

Nartes-Zvernec lagoon is dominated by the association *Zosteretum nanae* and occasionally *Ruppietum cirrhosa* and pleustiphytic populations of *Chaetomorpha linum*, from phytobentos origin. *Zostera* is the dominant species covering 30-40 % of the total surface. This represents the most important biocenosis.

At the borders of the lagoon occur halophytic communities such as *Salicornietum fruticosae, Salicornietum radicantis, and Salicornietum europaea* and in brackish soils around the lagoon, *Juncetum maritima* communities. South of the channel there is a Mediterranean pine forest *Pinus maritima*.

In the vicinity of Orikumi lagoon, the vegetation in the southern part is composed of *Ammophiletum arundinaceae (Ammophila arenaria, Medicago marina, Echinophora spinosa)*, *Sporoboletum (Sporobolus pungeus), Juncetum maritimi (Juncus maritimus), Juncus acuti, Holoschoerretum romani (Scirpus holoscoenus), Schoeneto-Plantaginetum crassifoliae (Schoerus nigricans, Plantago crassifolia, Saccharum ravennae)* associations (Mullaj, 1989). The S-SW borders of Orikumi lagoon are composed of maquis associations: *Pistacia lentiscus, Myrtus communis, Phyllirea sp*., the S-SE borders have associations of *Phragmitetum communis, Salicornietum fruticosae, Juncetum maritimi, J. acuti, Limonietum sp...*

The wetland complex of Vjosa-Narta is an important reservoir of biodiversity sheltering at least 747 species among which 287 insect species, 194 bird species and 102 of fish. Among these 747 species, 118 have a protection status, 189 are nationally threathened, 104 are rare for Albania and 26 are globally threathened as Globally Threatened Species of European Tree Frog *Hyla arborea*, Loggerhead *Caretta caretta*, Herman's Tortoise *Testudo hermanni* (UNDP/ GEF/dhe Ministrisë së Mjedisit, 2005b).

The main fish species living in Narta lagoon are: European eels (*Anguilla anguilla*), Sea breams (*Sparus aurata*), Sea bass (*Dicentrarchus labrax*), Grey mullets (*Mugil cephalus*) and sand smelts (*Aterina sp.).*

Also, coastal lagoons and estuaries are important areas for breeding and wintering for 192 species, more particularly for migratory and water birds, the most common being flamingos *Phoenicopterus ruber roseus*, shelducks *Tadorna tadorna*, pintails *Anas acuta*, goldeneyes *Bucephala clangula,* Kentish plovers *Charadrius alexandrinus* and golden plovers *Pluvialis squatarola.* Winter censuses undertaken during 1995-2004 registered 12,600-81,200 individuals of waterbirds with an annual average of 34,800 individuals.

The bay of Vlora is well situated for migratory birds but there are only a few suitable resting places for Ciconiiformes. Important fish stock increase the potential for cormorants; hundreds of

great cormorants and some great white egrets and grey herons have been seen fishing in November 1992 (Vangeluwe et al., 1994).

Rocky coasts

The rocky coastline of Rreza e Kanalit-Karaburuni, Sazanit island display, mostly on the western side is characterized by a high diversity of landscapes, with steep and inaccessible cliffs, fissures, caves, capes, small beaches and bays (bays of Bristan, Dafina, Grama etc.). These attractive formations for the visitor's eye take additional values from the well developed vegetation, which covers almost the whole peninsula from the mountain top until the coast.

Forest of *Quercus ithaburensis subsp. macrolepis* in the Karaburuni Peninsula, is considered as the best preserved forest in Albania. Gryka e Xhenemit and Sazani Island are other important habitats for the extended beds of *Euphorbia dendroides* and the alliance Oleo-Ceratonion, which has scientific values in the bio-geographical and ecological aspects.

A high diversity of vegetation types characterizes the hill slopes and other habitats of the peninsula and the island. Some of the most interesting are: broad – leaves evergreen forests (Assoc. Orno –Quercetum ilicis); plant communities dominated by *Quercus coccifera* (Assoc. Orno- Quercetum cocciferae); Plant communities dominated by *Euphorbia dendroides* and *Pistacia lentiscus* (Assoc. Pistacxio – Euphorbietum dendroides); as well as the forests dominated by *Quercus ithaburensis subsp. macrolepis* (known as Valona oak). The last one is considered as a relict species, together with the laurel *Laurus nobilis*, which is also present in natural conditions in this area.

A considerable number of terrestrial plant species, which belong to the Red Book of the Albanian Flora are present in this area, such as: *Athamanta macedonica, Brassica oleracea subsp. oleracea, Brasica incana, Laurus nobilis, Origanum vulgare, Prunus webbii, Quercus ilex, Limonium anfractum, Lotus cytisoides, Desmazeria marina, Capparis spinosa, Prasium majus, Ephedra distachia, Orchis sp.div., Daphne gnidium*.

In the coastal and marine habitats, at the mediolittoral stage, biocenosis dominated by *Lithophyllum byssoides* is present in both Sazani Island and Karaburuni Peninsula. This incrusting coralline alga, which is a characteristic species of western Mediterranean and Adriatic Sea, grows slightly above mean sea level, in small caves, corridors and along cliffs. In this area it has created small cushions (hemispheric concretions) and rarely builds rims, usually known as "trottoirs".

The mediolittoral is characterized by calcareous algae of *Lithophyllium sp.* which are good biological indicators of superficial pollution and fluctuant sea levels. *Lithophyllum byssoides,* present in both Sazani Island and Karaburuni Peninsula, is a characteristic species of western Mediterranean and Adriatic Sea, which grows slightly above mean sea level, in small caves, corridors and along cliffs. In Mediterranean Sea this is a protected species considered as a natural monument.
Among macroalgae, some rare individuals of *Fucus virsoides*, an Adriatic endemic species, which is mainly concentrated in upper Adriatic, can be found in the Treporti area; the southern limit of its distribution area corresponds to the geographic border of Adriatic sea; *Lithophyllum byssoides*, a characteristic species of Western Mediterranean found in Eastern Mediterranean only in Creete and fossil formations of Holocen (Laborel, 1981), has been located in Himara and Karaburuni zone by Kashta (1992).

Caves

Another biocenosis in the mediolittoral is that of mediolittoral caves, which correspond to crevices or the entrances of caves that are partially out of the water.

Four underwater caves at the tip of the Karaburum peninsula have been studied (Belmonte et al., 2006) and have shown very specific fauna different from the other side of the Adriatic. In particular a population of *Hypsichomus stichophthalmu*s (Polychaeta) was present in the *Haxhi Ali* cave with abundant fishes, echinoderms, worms, crustaceans. At about 40 m deep, red cartilagineous algae *Fauchea sp.,* are exuberant and very often seen with brigthly coloured sponges.

The canyons and caves, often inaccessible, represent an ideal habitat for monk seals (*Monachus monachus*) which were reported in the area still in 1982 (a juvenile has been captured in 1960 and its body is exposed at the museum of Natural Sciences in Tirana). Some of these caves are monumental (up to 50 m high) with stalactites along the walls and hosting freshwater fauna (kingfishers, mosquitoes, bats), such as the one located in the bay of Veriu. Freshwater resurgence happens very often in the caves and along the canyons.

Infralittoral algae

In the hard beds and rocks of the infralittoral, perennial brown algae are dominant over extensive parts of shallow hard substrata in the western side of Karaburuni and Sazani. The most important group is that of the brown algae Cystoseira, represented with 5 species (*Cystoseira amentacea var. spicata, C. barbata, C. compressa, C. crinita and C. spinosa*). The *Cystoseira* communities together with the *Posidonia* meadows are the main supporters of biodiversity in shallow water. Other important associations are those of *Dictyopteris polypodioides, Corallina elongata* and *Cladocora caespitosa*.

Some other algae sampled and identified in the area are *Bangia atropurpurea, Porphyra leucostita, Nemalion helminthoides, Jania corniculata, J. rubens, C. officinalis, C. elongata, L. byssoidess, Pseudolithophyllum expansum, Acrosymphyton purpuriferum, Dudresnaia verticillata, Peyssonelia rubra, P. squamaria, Phyllophora nervosa, Hypnea musciformis, Plocanium cartilagneum, Catenella repens, Botryocladia botryoides, Ceramium ciliatum, C. rubrum v. barbatum, Wrangelia penicillata, Hypoglossum hypoglossoides, Digenea simplex, Laurencia obtusa, Rhytiphloea tinctoria, Vidalia volubilis, Colpomenia sinuosa, Halopteris scoparia, Dictyopteris membranacea, Dictyota dichotoma, Dilophus fascicola, Nereia filiformis, Cystoseira barbata, C. compressa, C. crinita, C. stricta v. spicata, Sargassum vulgare, Palmophyllum crassum, Enteromorpha compressa, Ulva rigida, Cladophora prolifera, Anadiomene stellata, Valonia macrophysa, V. utricularis, Acetabularia acetabulum, Polyphysa parvula, Dasycladus vermicularis, Caulerpa prolifera, Halimeda tuna, Flabellea petiolata, Codium bursa* (Kashta, 1986).

The thermophile starfish *Ophidiaster ophidianus* and the sea cucumber *Holothuria helleri* have been located in the area (Vaso and Gjiknuri, 1992). Some of these species are included in Red List of Flora and Fauna of Albania.

Islands

Sazanit island on the eastern side (more protected) and the Zverneci small island are covered by evergreen forest of *Cupressus sempervirens* in association with *Quercus ilex*, *Quercus pubescens* and *Pinus spp.* The shrub layer (covering 50 – 60 % , at 1 – 2 m high) is dominated by the species such as: *Myrtus communis, Pistacia lentiscus,Laurus nobilis, Rubus spp., Phillyrea angustifolia, Olea olaster*, etc. The herb layer is generally rare with representative species as: *Chrysopogon gryllus, Asparagus acutifolius, Dactylis glomerata, Desmazeria rigida* (UNDP/ GEF/dhe Ministrisë së Mjedisit, 2005a).

Alluvial forests

These occur when bordering Vjosa River. The first floor is composed of associations characterized by a very high ecological plasticity, the class of Phragmitetalia, reeds *Phragmites australis,* and the class including *Typha angustifolia (dominant species), Lythrum salicaria, Polygonum hydropiper, Polygonum lapathifolium, Sium latifolium, Gratiola officinalis, Cladium mariscus, Alisma plantago-aquatica, Sparganum erectum.*

The second floor includes riverine forests belonging to the class *Alno-Populetea* and *Salicetea purpurea* such as *Populus alba, Populus nigra, Salix alba, Salix purpurea, Salix amplexicaulis, Salix elaeagnos* subsp. *angustifolia, Alnus glutinosa, Alnus incana*, *Platanus orientalis, Ulmus minor, Ulmus glabra, Fraxinus angustifolia.*

The grassland vegetation is generally poor. The most common species are *Equisetum telmateia, Equisetum ramosissima, Prunella vulgaris.*

Mediterranean macquis and pine forests

Rreza e Kanalit-Karaburuni, Sazanit island, hosts principally xeromediterranean sclerophyllic macquis with a dominance of *Pistacia lentiscus, Quercus coccifera, Juniperus phoenica* and *Brachypodium ramosus*, locally eumediterranean evergreen forest (portions of the original natural forest *Cupressus sp.*) and pines *Pinus pinea, P. halepensis*, associations of mediterranean *Agropyretum* composed mainly of *Elymus farctus, Cyperus capitatus, Sporobolus pungeus, Otanthus maritimus, Matiola tricuspidata, Calystegia soldanella,* associations of *Crithmo-Limonietum anfracti* characterized by *Crithmum maritimum, Limonium anfractus* and associations of *Crithmetum (Crithmum maritimum)* (Mullaj, 1989); there are mainly oaks *Quercion ilicis* and *Oleo-Ceratonion* in the valleys and dry river canyons (World Bank and Government of Albania, 1992 c). The macquis and mediterranean forest is the original Albanian vegetation which grows up to the edge of the coast.

The eastern side of Karaburuni has more areas deforested by fires in a landscape of macquis with a few pines and cypresses shaped by the wind; It is not as wild as the western part of Karaburuni however the vegetation comes very close to the sea level. Small dry river canyons fall into the sea almost vertically.

Pines were planted 30-40 years ago in order to stabilize the shoreline in Vlora bay; these forests are composed of *Pinus maritima, P. pinea* and *P. pinaster*. The shrub layer is represented by typical Mediterranean species such as *Pistacia lentiscus, Erica manipuliflora, Myrtus communis* etc, characteristic species of the *Class Quercetea ilicis* (40-50 % of total area, shrub < 2 m).

Coastal vegetation in higher altitude

In the national park of Llogara, vegetation is mainly characterized by a mediterranean shrub zone up to 600 m with predominantly kermes oak, lentic, tree heather and prickly cedar (*Buxus sempervirens, Daphne laureola, Quercus coccifera, Evonimus europaeus* with single trees of *Taxus baccata and* small patches of *Pinus hedreichii*); between 600-800 m Holm oaks, ash, hop-hornbeam and sow thorn mainly grow. Above this zone, from 800-1300 m the beech zone is dominated by beech, silver fir, black pine, maple, juniper and dog rose (*Pinus nigra, Abies alba*, *Acer pseudoplatanus, Fraxinus ornus, Ostrya carpinifolia*...). Endemic and rare species in the alpine zone of herbaceous species are scattered from 1400 m to 2000 m: *Colchicum autunnale, Sideritis roeseri, Lilium chalchedonicum, Hypericum haplophylloides*....

Specific communities

- Pelagic communities
- Sea grass communities
- Marine turtles
- Birds
- Marine mammals

- Pelagic communities

  The underwater coastal environment and fauna is quite diversified and relatively abundant especially on the western side of Rreza e Kanalit-Karaburuni and around Sazanit Island.
  Pelagic fish communities are composed of *Merluccius merluccius, Trachurus trachurus, Parapenaeus longirostris, Mullus surmulletus, Exocetus volitans*... On rocky substrates closer to the coast, the following communities are present *Diplodus sargus, D. vulgaris, D. annularis, Serranus cabrilla, Spicara maena, Coris sp., Thalassoma pavo*, a school of *Boops boops,* in cavities were *Anthias anthias, Phycis phycis*, large groupers *Epinephelus sp.* and moray eels. Other interesting species of large size have been recorded such as *Mola mola, Xiphias gladius...*

- Sea grass communities

  In Vlora bay, on the seabed, there is locally an important coverage of algae and sea phanerogams (mainly *Posidonia oceanica, Cymodocea nodosa* and *Zostera noltii*). *Halophila stipulacea*, a sea phanerogame with subtropical and tropical affinity of Indian Ocean origin, has found shelter in the bay of Vlora and in Saranda areas (Kashta, 1992).

  In the infralittoral stage the most important biocenosis is that of *Posidonia oceanica* meadows. This habitat belongs to the Habitat Directive 92/43/EEC as priority habitat, whereas *P. oceanica* as a species belongs to the Annex II (List of the endangered or threatened species) of the Barcelona Convention (Protocol Concerning Specially Protected Areas and Biological Diversity in the Mediterranean).
  Patches of *Posidonia oceanica* meadows occur at 6-10m depth and deeper in sheltered sites of the rocky coastline of Rreza e Kanalit-Karaburuni and Sazanit Island. On the eastern side of the island, *Posidonia* beds are found closer to the coast at shallower depths. Both *Posidonia oceanica* and *Cymodocea nodosa* are protected by law in the Mediterranean sea since 1988.

On the western coast, *Posidonia oceanica* grows generally on rocky substrates and rarely on sandy sea beds, in front of small beaches.
On the western side of Sazanit Island a rocky substrate is found prolonging the island, some patches of *Posidonia oceanica are* located in sheltered areas where the depth does not increase as much as observed along Karaburuni.
Within the *Posidonia oceanica* meadows, benthic macrofauna encompasses about 190 species including sponges, cnidarians, bryozoans, mollusks, annelids, crustaceans, echinoderms and ascidians (Beqiraj *et al.*, 2008; *Peja et al*., 1992).

Associated to the seagrass ecosystem, the crustacean decapods sampled in the area are the following: *Gennadas elegans, Parapenaeus longirostris, Sergestes sargassi, Lucifer typus, Plesionika sp., Lysmata seticaudata, Athanas nitescens, Processa edulis, Palaemon adspersus, P. serratus, Palaeomonetes antennarius, Pontophilus spinosus, Callianassa subterranea, Anapagurus chiroacanthus, A. laevis, Pagurus excavatus, P. prideauxi, Munida bamffica, Porcellana platycheles, P. longicornis, Latreillia elegans, Homola barbata, Medorippe lanata, Ebalia cranchii, E. tuberosa, Carcinus aestuarii, Portumnus latipes, Liocarcinus depurator, Macropipus tuberculatus, Pilumnus spinifer, Goneplax rhomboides, Pachygrapsus marmoratus, Maja squinado* (Vaso and Gjiknuri, 1993).

Echinoderms are also present with holothurians, sea urchins, sea stars (cushion stars) and ophiurians. The thermophyle starfish *Ophidiaster ophidianus* and the sea cucumber *Holothuria helleri* have been located in the area (Vaso and Gjiknuri, 1992).

- Coralligenous biocenosis

  Another important biocoenosis is that of semi-obscure caves, where the red coral *Corallium rubrum* and several species of sponges live. The red coral (*Corallium rubrum*) a Coelenterates of great interest, is a species of the Annex-III of the Barcelona Convention, as a species whose exploitation is regulated and also a species of the Annex III of the Bern Convention, as protected fauna species.

  Coralligenous biocenosis is present in the circalittoral zone, on hard substrata, with calcareous red seaweeds, gorgonians and bryozoans. This biocenosis is well developed on the western side of Sazani Island and Karaburuni Peninsula.

- Marine turtles

  In the marine waters of this area has been also recorded the presence of the loggerhead turtle *Caretta caretta*. This globally endangered species was commonly found in Patoku Lagoon. In this lagoon, the green turtle *Chelonia mydas* has been also recorded several times in the last years. Leatherback turtle *Dermochelys coriacea* is a very rare visitor in Albanian waters. These 3 sea turtle species are globally endangered species, with high threatening status (after IUCN Red List 2006).
  This area seems to be an important migrating corridor for the loggerhead turtle *Caretta caretta*, from its nesting site in Zakynthos Island in Greece at the Ionian Sea, to the Patoku coast in Albania at the Adriatic Sea, which has been recently identified as an important foraging site for this species.

- Birds

  Coastal lagoons and estuaries are important areas for breeding and wintering for 192 species, more particularly for migratory and water birds. Albania is a country of special importance for Dalmatian pelican *Pelecanus crispus,* a globally endangered species, and pygmy cormorant *Phalacrocorax pygmaeus*. Audoiun's gull *Larus audouinii*, also present, is part of the globally endangered species.

  Rocky substrates, in particular the high cliffs of Karaburuni and Sazanit island, are ideal for nesting pelagic seabirds, e.g. Laridae. The most representative bird species in the Karaburuni peninsula are Egyptian vultures and peregrine falcons *Falcus peregrinus*. In Llogara national park, there are buzzards *Buteo buteo*, grey wagtails *Motacilla cinerea*, shitethroats *Sylvia communis*, coal tits *Parus ater*, red-backed shrikes *Lanius collurio*, cirl buntings *Embriza cirlus*, blue rock thrush *Monticola solitarius*, ravens *Corvus corone*, egyptian vultures *Neophron percnopterus*, golden eagles *Aquila chrysaetos*, stock doves, turtle doves, goshawks *Accipiter gentilis*, sparrow hawks *Accipiter nisus* and rock patridges (Crockford and Sutherland, 1991; World Bank and Government of Albania, 1992 c).

- Marine mammals

  The area is hosting a variety of habitats used by a great number of mammals of international, national and regional importance. Four species of small mammals, respectively two insectivores (*Talpa caeca* and *Talpa stankovici*) and two rodents (*Pitymys thomasi* and *P. felteni*) endemic of Western Balkans or Mediterranean Region have a part of their distribution range inside the area. *Rhinolophus blasii, R. euryale, Myotis myotis, Canis aureus, Lutra lutra, Meles meles, Mustela putorius* and *Mus spicilegus* (abboti) are resident threathened species that would be safeguarded with the conservation status of the area.

  Albanian marine and littoral habitats are frequently visited by the rare marine mammals. The Monk seal (*Monachus monachus*) has been a visitor of coastal waters in Karavasta region and in Ionian Riviera (Stillo and Qefali capes in Saranda, Palasa and Karaburuni). Although the Monk seal is a very rare visitor in Albanian waters, it is thought that the coastline from Stillo Cape to Karaburuni peninsula at the Ionian Sea offers several caves as potential habitats for resting shelters.
  Karaburuni-Rreza e Kanalit-Sazanit area would be a potential monk seal *Monachus monachus* habitat as they were still reported in 1982 in Karaburuni and in 1991 in Sazanit Island (Beudels and Vangeluwe, 1994).

  The common dolphin *Delphinus delphi*s, the bottlenose dolphin *Tursiops truncatus* and the Mediterranean monk seal (*Monachus monachus*), which are among the most threatened species in global scale, as well as many other threatened species of international concern in this area, are protected by several international conventions (Barcelona, Bonn, CITES, Bern).
  Among the five species of cetaceans reported in Albanian waters (the striped dolphin *Stenella coeruleoalba,* the Cuvier's beaked whale *Ziphius cavirostris,* the short-beaked common dolphin *Delphinus delphis*, the common bottlenose dolphin *Tursiops truncatus* and the sperm whale *Physeter macrocephalus,* the three latter have been identified by ACCOBAMS as being in the greatest danger of disappearing from the Mediterranean.

4.3. *Cultural Heritage Resources*

Historical and archaeological values of the sites are unique and would attract national and international tourism (Grama bay, Orikumi, St Marie church and monastery in Zvernecit Island, Triporti, Spinarica). St Marie church and the monastery are cultural monuments dating from the 13th Century which have been restored. Triporti, which has been discovered by archaeological excavations, displays antique buildings from the Greek-roman period. Spinarica dates from the 12th century and one of the renowned medieval cities in the Adriatic Sea.

Several archaeological and historical remains are present in the area in Orikumi lagoon, Vlora bay, Karaburuni, e.g. Grames bay and some caves.

In the south-eastern part of Karaburuni Peninsula, in Orikumi lagoon is located the ancient Orikos, which has been founded in 4th century BC and mentioned as an important economic and cultural center in the Mediterranean during the ancient Greek and Roman periods until the Medieval period.

During the roman period, it was a strategic naval base taking part in the wars between Caesar and Pompey. Numerous shipwrecks of that period are supposed to lie in the bay and lagoon where most of ancient Orikos is still submerged. The archaeological importance of the remains (which are mostly still underwater) is assessed to be greater than the ancient town of Butrinti.

This area owns precious archaeological, historical and cultural values, too. As mentioned in the previous chapters (2.3), in the south-western coast of Karaburuni is situated Grama bay, a former famous harbor since thousands of years. On the rocks of Grama bay there are abundant inscriptions in old Greek and Latin languages, dating more than 2000 years that have made this bay to be considered as the richest “rocky diary” in the Mediterranean.

In the underwater habitats of Karaburuni, a considerable number of wrapped ships and many archaeological objects are testimony of the relations of this area with other civilizations of the Greek and Roman periods. Divers can also see the traces of the two world wars of the 20th century.

Numerous shipwrecks (mainly on the western coast), amphoras close to cape Shën Nikolla on the eastern coast of Sazani island could be touristically attractive for underwater explorers.
Three shipwrecks are signaled in Vlora bay and two ancient quarries (one located north of Pasha Limani has sculptured red heads from the classical period) on the eastern coast have been reported in the area; these historical remains could also be touristically attractive for underwater explorers.
Llogara park is of historical interest as it has been recorded that Julius Caesar passed at "Qafa e Llogorase" at 1025 m altitude. It is known there also the toponym “Qafa e Cezarit”.

4.4. *Main human activities and related potential threats in the MPA*

This section reviews the main human activities and related potential threats, to be considered by the management unit of the future K-V-MPA, and proposes for each specific management,

objectives, policy, action and evaluation indicators.

4.4.1. Sustainable management of coastal settlements

The coastal settlement (towns and villages) of the Vlora area may have potential negative impacts on the MPA if current modes of development activities are left unchanged. There is a need to upgrade and enhance in particular the solid and liquid waste management. As counterpart, the population will benefit from the protected areas in term of revenues originating from tourism, ecotourism and other services liked to the marine and terrestrial protected areas. Grants and loans could be provided to local communities to develop tourism facilities and services.

4.4.2. Sustainable Tourism and Ecotourism Development

Tourism will be one of the most important use of K-V-MPA for its natural and cultural resources. It is a reliable source of sustainable and substantial economic growth in Albania if properly established and managed. In addition to creating economic opportunities and jobs for the private sector and generate benefits for the local community to enhance their standard of life, it is an important source of revenue for the PAMU to invest into its management. The facilitation and management of tourism and promotion of ecotourism in K-V-MPA is therefore one of the top management issues for the PAMU. Ecotourism is an activity that depends on, promotes a well-maintained natural environment, and has shown to be a reliable source of sustainable economic growth. K-V-MPA has excellent potential for ecotourism development given its unique natural and cultural heritage resources. A range of nature based tourism activities can be envisaged taking place in the K-V-MPA, including wildlife watching, diving, snorkelling or nautical tours as this area has a high potential for leisure, recreation, adventure, beach tourism, and cultural heritage tourism. K-V-MPA management must take into consideration the planned tourism development in the region that is expected to grow exponentially in the next five to ten years. Given the network of protected areas and other important features in the Vlora region, it is envisaged that the K-V-MPA will become a leading attraction for tourism as the region becomes better known.

4.4.3. Maritime traffic and ships anchoring inside or around the MPA

Most vessels operating in the MPA and in its surrounding areas can have an impact on the marine environment. The objective is to minimize these impacts, as well for ships and vessels transiting to and from Vlora harbour, for fishing boats entering Vlora or other small ports as for the future tourist boats entering the marine protected area for recreational activities. Damage can be related to the anchoring system, to the release of oil, fuel sewage water or solid waste. Strict regulations are necessary to reduce the potential impacts. Mooring systems will have to be installed in the marine protected area at proximity of key features such as for landing points to beaches and other features or for sensitive sites if their access is opened to divers, snorkelers or for reaching.

4.4.4. Marine tourisme activities (except maritime transport)

Impacts associated with the activities that tourists undertake during a visit, such as swimming, sailing, snorkeling and SCUBA diving can be a chronic source of disturbance to marine organisms and could result in localized physical destruction of seagrasses, algae or coralligenous formations, even under low levels of use.

4.4.5. Solid Waste management in the MPA and its contiguous zones

One of the most critical problems in K-V-MPA is solid waste not only inside the MPA but also in adjacent areas. Solid waste is largely generated from tourist and marine transport activities in the region. Solid waste affects vegetation, which traps the litter. The vision of trash embedded in the landscape or lying on a beach of K-V-MPA will give the impression of an efficient management and would lower the visitors' appreciation of natural resources. Thus visitors expect that waste management is one of the major visitor's services.

4.4.6. Sewage water

Following the decision of a zero discharge policy in the sea, there are no approved sewage outfalls in the MPA. New facilities are required to have treatment plants. Treated water is used for irrigation and the sludge is disposed in landfill sites, sometimes to be used as fertilizer.

4.4.7. Major oil spill risk

The risk of a major pollution event due to an accidental oil spill in the MPA is high given the volume of commercial shipping that passes through the area. An oil spill in or adjacent to the MPA would not only have detrimental effects on water quality but could also have significant ecological impacts on birds and intertidal assemblages in the MPA. Whilst the management of shipping is outside the scope of this plan, the risk of environmental damage associated to a spill is high given the incomplete knowledge on the spatial distribution of sensitive habitats in the MPA. In addition, there is a lack of spill control equipments.

4.4.8. Sustainable fishing

Individual and commercial fishermen fish in the area using a variety of methods.
Uncontrolled fishing in the coast may directly damage not only fishery resources, but indirectly affects also the bird species and mammals feeding on fish.
The breeding grounds of *Posidonia oceanica* have also severely deteriorated because of changes in the structure of the fishing fleet. More than 50% of fishing boats have small power motors (100 HP) and hence are able to apply deep fishing techniques (trawling) in shallow areas since they are unable to fish in zones more than 50 meters deep. The Albanian fishing fleet is characterized by a high presence of trawlers (62%) followed by gill-netter (Anonymous, 2002).
The intensity of fishing effort and their effect on local populations of target and by-catch species remains unknown. However, fishermen report that local fisheries resources are limited, and that their revenue is decreasing.

A very sensitive species is the dusky grouper *Epinephelus marginatus,* distributed along all the Karaburuni peninsula and Sazani island coast. After the fishermen's observations, nowadays the population of this fish species shows strong declines because of overexploitation.

4.4.9. Fish farming

In recent years some aquaculture activity has been developed in the littoral zone. In few localities along the eastern part of Karaburuni peninsula have been built sea cages cultivating sea bream (*Sparus aurata*) and sea bass (*Dicentrarchus labrax*), but the trend is for further increase of such activity, because the demand is steadily increasing from one year to the other.
The most widely known effect of fish farming is benthic enrichment, i.e. increased organic content of the sediment beneath the fish cages. The deposition of particulate organic material, i.e. faecal material and uneaten fish feed, in the immediate vicinity of the farm, leads to increased oxygen demand, a condition that often results in anaerobic metabolism and anoxia.

4.4.10. Collection of marine invertebrates

The trade and selling of marine curios, such as shells, can be the reason for the decline of some species and of the explosion of other populations. Illegal and destructive harvesting has caused the depletion of rocky shore as in the harvesting of the date-mussel *Lithophaga lithophaga* around the Karaburuni peninsula, from the superficies to 6-10 m depth. Strong measures need to be undertaken to ensure that such practices do not cause desertification of marine life along the rocky areas of the coast. Regulations can reduce this activity.

4.4.11. Rare, endangered and threatened species

K-V-MPA is home to a number of globally, regionally as well as nationally rare, endangered and threatened species of fauna.
At least 36 marine species, which are of international concern and belong to the lists of endangered and/or protected species of several conventions (see 2.3) are present in Sazani – Karaburuni area. They involve seagrasses, seaweeds, sponges, cnidarians, mollusks, crustaceans, echinoderms, fishes, reptiles, pinnipeds and cetaceans.

In national scale, about 75% of endangered species of marine animals, mostly benthic macroinvertebrates, which belong to the Red Book of Albanian Fauna (2006) and to the Red List of Albanian Fauna (2007), have been recorded in Sazani – Karaburuni area
The conservation of these threatened species is an international obligation and one of the priorities of the National Biodiversity Strategy and Action Plan.

The most important and sensitive species and biocenosis in the area Karaburuni peninsula – Sazani Island are:
- Monk seal (*Monachus monachus*),
- Short-beaked common dolphin (*Delphinus delphis*),
- Loggerhead turtle (*Caretta caretta*),
- Red coral (*Corallium rubrum*),
- Date mussel (*Lithophaga lithophaga*),
- Dusky grouper (*Epinephelus marginatus*),

- Starfish (*Ophidiaster ophidianus*),
- Coralligenous biocenosis,
- Biocenosis of *Posidonia oceanica* meadows,
- Biocenosis dominated by *Lithophyllum byssoides* (*Lithophyllum byssoides* rims),
- Biocenosis of infralittoral algae- *Cystoseira* communities.

The Monk seal (*Monachus monachus*) is a very rare, occasional visitor to the Albanian coastal waters.
The canyons and caves of the area, often inaccessible, represent an ideal habitat for monk seals which were reported in Karaburun peninsula in 1982 and Sazani island in 1991 (Beudels and Vangeluwe, 1994).
Clear evidence of the presence of the monk seal was found in some caves i.e. impressions in the sand corresponding to a large body and excrement (Antolović J. et al., 2005).
It would seem that the caves along the Albanian coastline, especially those of the western coast of the Karaburuni peninsula, could serve as a bridge for possible future monk seal repopulation of the shores of the Central and Northern Adriatic Sea, rather than important shelters for "local" monk seal breeding populations.

4.4.12. Introduced and invasive species

Alien invasive species is one of the most outstanding issues facing biodiversity today on a global scale. In temperate marine systems, invasive species are well-documented causes of marine community disruption. There is an important harbor in Vlora that regularly receives vessels from regional and international waters. Species introduced to these harbor could conceivably spread into adjacent waters. Alien species of marine fauna are also used in mariculture in various parts of the Mediterranean.
A potential threat to marine biodiversity is that of invasive species *Caulerpa racemosa var. cylindracea* that is widely dispersed in the Mediterranean basin, including the Albanian coast of Ionian Sea. The last years it is recorded also in Vlora bay and the eastern side of Karaburuni peninsula (Kashta et al., 2005). As reported by a number of marine biologists, this invasive species is decreasing the biodiversity values of the invaded sea waters.

4.4.13. Scientific research inside the MPA

Although the PAMU is primarily a management body and not a research institution, effective conservation management requires accurate and relevant information. Thus, targeted and management issues oriented research is an important component of the PAMU's scope of work. On the other hand, unplanned research lacking clear scientific objectives could be counterproductive. Indeed some research can be highly damaging to important natural resources, especially if research design calls for the collection of large numbers of specimens of fauna and flora or other samples. K-V-MPA is a valuable scientific resource that will increasingly attract scientists and researchers and these should be encouraged. Scientific research is one of the important activities, which MPAs seek to promote and facilitate.

4.5. *Administrative and legal elements*

4.5.1. National legislation and administration

The basis for the legal framework is the Albanian Constitution (revised in 1998) which considers the environment as an important element of the Albanian sustainable development. In addition, the Albanian Parliament endowed itself with a Permanent Commission on Health and Environment which approves all environment-related legislation, international agreements, and other decisions of national importance.

The Law on Environmental Protection (adopted in September 2002) is the framework law for the environmental management in Albania. It is a modern law which incorporates all globally recognized principles of environmental protection, including: sustainable use, precaution, prevention, legal liability, polluters-pay principle, and public awareness and participation in environmental decision making. The Law covers a wide range of issues including: definitions of the main environmental policy documents; responsibilities of the relevant state bodies; protection of all elements of the environment (soil, water, air); waste management; prevention and reduction of environmental pollution; sanctions; environmental economic instruments and funds; EIA and SEA; control of the state of the environment; monitoring and informing about the state of the environment; the role of the public.

This shows the importance of coordination and cooperation mechanisms between all the different authorities, in particular for the coastal zone and the marine environment. This was embedded in the World Bank Integrated Coastal Zone Management Plan (ICZM), prepared in 1995, providing a clear vision of the sustainable development of the Albanian coast based on the preserved environment and natural and cultural heritage, training of Albanian experts, and a clear recognition of the need for further institutional strengthening.

The main state body responsible for the implementation of the environmental protection is the Ministry of the Environment, established in 2001. At the regional level, the Regional Environmental Agencies are responsible for the enforcement of the environmental legislation, one of them being in Vlora for the Southern Coastal Region.

4.6. *Rationale for the first Marine Protected Area of Albania*

4.6.1. The international and national levels

The designation of the first marine protected area in Albania is the result of the dedication of the Government to fulfill its commitments at the national and international levels and in particular concerning the **Convention on Biological Diversity (CBD)** and the **Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (Barcelona Convention).**

The Protected areas form a central element of the work in the thematic areas and cross-cutting issues addressed by the Conference of the Parties to the Convention on Biological Diversity.

Because oceans and seas cover 71% of the Earth, the under-representation of marine and coastal ecosystems in the current global protected areas system is particularly alarming. At the same time, global and regional assessments indicate that marine biodiversity globally continues to decline rapidly. In addition, there are increasing and urgent concerns about the effects of over-fishing and destructive fishing practices on biodiversity. Halting, and perhaps ultimately reversing, this trend represents for the global community a formidable challenge.

The seventh meeting of the Conference of the Parties to the Convention on Biological Diversity agreed, in 2004, that marine and coastal protected areas are one of the essential tools and approaches in the conservation and sustainable use of marine and coastal biodiversity (decision VII/5 on marine and coastal biological diversity). The Conference of the Parties also agreed that a national framework of marine and coastal protected areas should include a range of levels of protection, encompassing both areas that allow sustainable uses and those that prohibit extractive uses (i.e., so-called "no-take" areas). The Conference further recognized that protected areas alone could not accomplish everything, and that sustainable management practices are needed over the wider marine and coastal environment.

During the COP 8, the CBD has also fixed a target of 10% of the world oceans and seas to be declared as marine protected areas by 2012.

In addition, during the Conferences of Parties 9 (2008), the decision IX/20 adopted the scientific criteria for identifying ecologically or biologically significant marine areas in need of protection and the scientific guidance for designing representative networks of Marine Protected Areas.

The Barcelona Convention activities related to marine conservation and sustainable development are mainly the responsibilities of the two following Regional Activity Centres (RAC):

- the Specially Protected Areas (RAC/SPA) is responsible for the implementation of the Protocol concerning specially protected areas and biological diversity in the Mediterranean assisting the countries in the development of protected areas and mandated by the countries for the creation of a coherent and representative network of marine protected areas covering all the key elements of the Mediterranean at the regional, sub-regional and national level.
- The Priority Action Programme (PAP/RAC) is responsible for the implementation of the Protocol on Integrated Coastal Zone management in the Mediterranean (ICZM Protocol) soon entering into force and with the objective of establishing a common framework for the integrated management of the Mediterranean coastal zone in each country and at the regional level. ICZM is a tool to manage in a sustainable manner all the natural resources and the human activities

The **Pan-European Biological and Landscape Diversity Strategy (PEEN)** (Council of Europe *et al*. 1996) represents a European response to support implementation of the Convention on Biological Diversity by promoting a co-ordinating and unifying framework for strengthening and building on numerous existing policy initiatives and programs (ECNC 1996, Council of Europe 1998 (Annex 3)). Its major function is to conserve larger natural areas and to prevent fragmentation or to restore connectivity. The PEEN will consist of core areas to conserve eco-systems, habitats, species and landscapes; biological corridors to improve the coherence of natural systems; restoration areas to repair or restore damaged elements of eco-systems, habitats

and landscapes of European importance; buffer zones to support and protect the network from adverse external influences.

Under the **Convention on the Conservation of European Wildlife and Natural Habitats known as the Bern Convention** (1979), the **Emerald Network of Areas of Special Conservation Interest (ASCI)** to Europe has been established in 1996 by the Council of Europe (Council of Europe, 1979b). The Parties are to "take steps to designate
Areas of Special Conservation Interest to ensure that the necessary and appropriate conservation measures are taken for each area situated within their territory". Albania having signed the Bern Convention in 1985 and ratified it in 1999, started in 2002 to join the EMERALD Network pilot project with six pilot sites selected as ASCIs and proposed as Strict Nature Reserves, among which Llogora National Park included in our present zone of interest.

At the national level, the Albanian Parliament approved in 2002 two important laws that together have created a new legal structure for protected areas: law no. 8934 dated 05.09.2002 "For the Protection of Environment" which is based within the concept of sustainable development and law no. 8906 dated 06.06.2002, "For the Protected Areas". The latter sets the framework for the proclamation, administration, management and sustainable use of protected zones and natural biological resources and provides the basis for the development and mitigation of 'environmental tourism' and other economic benefits and for the provision of information and education to the general public. The law "For the Protected Areas" provides special protection of the most important components of natural reserves, biodiversity and in general nature, through the implementation of a protected areas network based on the IUCN's categories system and defines the priorities and strategic objectives for the management of each category. Based on these laws, local governments compile action plans conforming to the priorities and requests of national environmental strategies. During the composition and the approbation of environmental plans and programs, local governments engage the public and NGOs.

The National Biodiversity Strategy and Action Plan has set to expand the present protected areas (about 6%) to 25% of Albanian land territory by 2020.

Following the numerous discussions with national and international experts, the realisation of a field mission to visit the proposed priority site and the revision of the existing documentation, including in particular:

- ✓ the national report on proposed marine protected areas,
- ✓ the reports of the different missions for Integrated Coastal Zone Management (ICZM),
- ✓ the description of the protected terrestrial sites surrounding the city of Vlora.

Based on all these elements, it appears evident that the region of Vlora has to be considered in an integrated manner and that the protection of terrestrial and marine sites is strictly linked to the proper management of all human activities.

At the **local level**, the area of Vlora includes different sites of interest for conservation:

- ✓ The wetland of Nartes lagoon (north of Vlora)

- ✓ Pasha Liman lagoon near Orikumi at the bottom of the bay of Vlora
- ✓ Karaburuni peninsula and the Sazanit Island
- ✓ The highlands and forest area of Kanalit

Each of these sites present major interest for conservation and for tourism and ecotourism: they include at the same time natural and cultural values.

The Government objective is to create the first marine protected area of Albania in the area of Vlora. The following areas were proposed in different reports:

- the area in front of Narta lagoon
- the area surrounding the island of Sazanit
- the external part of Karaburuni peninsula

Based on the previous paragraphs and considering the international commitments of the country, it is proposed to create a very large marine protected area with different zones corresponding to different categories of protected area (IUCN categories). This proposed marine protected area will be representative of most of the ecosystems of Albanian waters as they include most of the types of sea bottom and most of the examples of marine life present in the country and in the Adriatic region. This will fulfil part of the commitments in relation with the CBD: the criteria for selection of sites will have been applied; the proposed area will represent about 400 km² or 4% of the territorial and internal waters of Albania (about 10,000 km²) according to the selected borders for the MPA (1 nautical mile offshore or more).

This will be part of the 10% target recommended by the CBD and will also represent one of the 10 most important marine protected areas declared by a country in the Mediterranean (RAC/SPA database). Thus it will attract the attention of international donors and tour operators.
The K-V-MPA would have all criteria to be proposed to join the list of Specially Protected Area of Mediterranean Importance (SPAMI) of the Regional Activity Centre for Specially Protected Areas (RAC-SPA). As the sites included in the area are "of importance for conserving the components of biological diversity in the Mediterranean; contain ecosystems specific to the Mediterranean area or the habitats of endangered species; are of special interest at the scientific, aesthetic, cultural or educational levels" (Article 8(2) of the 1995 Protocol Concerning Mediterranean Specially Protected Areas and Biological Diversity in the Mediterranean).

By its outstanding biodiversity value interacting with education, sustainable management and economic development of local communities, the K-V-MPA could also be proposed to enter Unesco's World Network of Biosphere Reserves.

4.6.2. The proposed zoning of the Karaburuni-Vlora Marine Protected Area

Based on the presence of different terrestrial protected areas in the region of Vlora, and in particular Nartes lagoon in the North, Orikumi lagoon at the southern bottom of the bay of Vlores, the peninsula of Karaburuni on the western side of the same bay, it is proposed to link all these coastal sites by the creation of an overall marine protected area.

Considerations on the external boarder of the marine protected area
The external border of a marine protected area could be defined by a depth, by a distance form the coast, by the presence of specific features easily visible at sea or according to existing national regulations for some activities, usually fisheries or exclusion zones. In Albania, the legislation concerning trawling fisheries indicates a limit at the depth of 100m. As this limit is very near the coast for the western part of the Karaburuni peninsula and of Sazanit Island, it could be better to select a distance of 1 nautical mile or more if considered appropriate for the preservation of coastal resources and the safety of marine activities. The sheltered bay of Brisanit could serve the purposes of K-V-MPA visiting center and parc infrastructures for patrolling, ecotourism and oceanographical/fishery research with an existing a road track access to Orikumi.

Consideration of the limit within the Vlora Bay (between the tip of Karaburuni peninsula and the village of Orikumi)
As the bay is important, it is recommended to consider the medium line of the bay between Cape Roghozes and the Cape Viroit, then to consider the full end part of the bay as part of the marine protected area. The presence of aquaculture activities in the southern part of the bay is not a problem for the marine protected area, as far as the production is respecting the national and international rules concerning the environment for aquaculture. An evaluation and an agreement with the aquaculture farm could be reached and the value of the production will benefit from the position of the infrastructure within a protected area.

Consideration for the channel between Karaburuni peninsula and the island of Sazanit
This area is indicated on the marine chart as the entrance channel to Vlora's harbour. Presently, this channel is very near the tip of Karaburuni peninsula and the navigation could be a threat for the natural resources and for the marine activities within the marine protected area. It will be necessary to relocate this channel by negotiation between the MPA management unit and the relevant authorities; the best option being in the middle between Karaburuni and Sazanit island. As the channel is inside the territorial waters of Albania, it is possible for the Directorate of Maritime transport to change the position of the channel due to the risk between the traffic linked to the port of Vlora and the traffic linked to the activities in the MPA. This decision can be acted by the Government and then transmitted to international maritime authorities (IMO and UNCLOS). Nevertheless, it is recommended that this area should be included within the boundaries of the MPA in order to develop a permanent mechanism of cooperation between the maritime authorities and the MPA management unit, in particular in case of emergencies, accident or pollution.

Consideration concerning the island of Sazanit
Previously, a zone of the maritime environment was excluded from any activities in relation with the presence of military facilities on the island. This limit could be considered for the border

offshore the island, but as previously indicated, a distance of 1 or 2 nautical miles could be considered for facilitating the management of activities and in particular fisheries. The sheltered harbour and building facilities could serve the purposes of K-V-MPA for patrolling, ecotourism and oceanographical/fishery research.

Consideration for the marine area between Sazanit and the coast from the southern tip of the Darea-Zverneci area ("balise" kepi reportit or Cape Triport) to the southern entrance of the Vjoses river.

For this area, it is recommended to consider as part of the marine protected area all the area north of the navigation channel and to close it by a line between the southern mouth of the Vjoses river bording the North of the Narta lagoon and the external limit of Sazanit Island. The exact delineation will have to take into account the project of extension of the harbour of Vlora and the proposed platform terminal. This area could be dedicated to traditional fishing activities for the fishermen operating around Narta lagoon.

Consideration for the Public Maritime Domain
As this domain is related to the marine environment, which is part of the state property and which includes a right of free passage, it is recommended to include it in the Marine Protected Area and to manage it jointly between the Protected Area Management Unit (PAMU) and the responsible national Authority.

Consideration for the set back for development activities
The set back is usually a distance from the public maritime domain where human activities are not allowed or restricted. With climatic change and related issues concerning sea level rise, this area is subject to risk and needs to be properly defined and respected. This area can be defined as the area under marine influence and can be identified as the first line of permanent non halophytic vegetation. The installation of infrastructures such as road and pathways is not recommended and all sensitive infrastructures have to be further inland to avoid protection expense. Identically, private properties and permanent commercial and industrial infrastructures have to be further inland, such as tourism development. It is recommended to include this area under the responsibility of the PAMU as development will take pace on part of the coast and there is a need to respect all the national and marine protected areas regulations.

Draft proposal regulations for different zones (see map)

Based on all the previous paragraphs notes and considerations, it is proposed to define in the area, 4 main zones, each covered by specific regulations developed and implemented jointly by the PAMU and by the relevant authorities concerned by each sector of activity.

Zone 1. The western part and the northern tip of Karaburuni peninsula
Limits:
From the southern limit of Rreza e Kanalit (Faqja e Langadhes) to the northern tip of Karaburuni peninsula including at the eastern tip of the area until Cape Gjate

Category(ies):

This area will be covered by different categories of conservation (precise limits to be defined), extending the existing terrestrial zoning. It includes Category II National Park , some areas as Category I Strict nature reserves, some Category III Natural Monuments and Category IV Habitat/Species Management Area.

Regulations:
- Strict reserves defined by the PAMU after additional study on sensitivity and monitoring sites,
- Areas could be declared natural monuments such as for caves or other geological features,
- No extractive use, no fishing, no spear fishing, no speed boats , no jet skis,
- Recreational activities (swimming, diving through authorised centres, sailing, windsurfing, kayaking,…) under agreement,
- Tourism transportation under agreement.

Zone 2. The internal and southern part of Vlora bay
Limits:
Inner part of Vlora bay including the bottom of the bay
Category:
VI Managed resource protected area
Regulations:
- Extractive use of marine resources is authorised under agreement (fishing using rod line and traps and aquaculture),
- Recreational activities (swimming, diving through authorised centres, sailing, windsurfing, kayaking,…) under agreement,
- Tourism transportation under agreement,

Zone 3. The navigation channel
Limits:
Navigation channel defined after negotiation
Category(ies):
I Strict nature reserve or VI Managed resource protected area
Regulations:
No other activity than navigation.

Zone 4. The northern part including Sazanit Island and the waters in front of Narta lagoon
Limits:
The northern part of the navigation channel including Sazanit Island until the border of Narta lagoon
Category(ies):
VI Managed resource protected area for most except that part of Sazanit Island could be II National Park and I Strict nature reserve after further study

Regulations:
VI: - traditional fishing activities (rod line and traps only) after study, inquiry and link with Narta lagoon management regulations,
- tourism activities are authorised except spear fishing, speed boat and jet-ski,
II: tourism and recreation except spear fishing, speed boat and jet-ski,

I: only scientific activities in areas defined by the management unit as sensitive and for monitoring areas

The remaining part of Vlora Bay, in particular the area in front of the urban area of Vlora, the planned development of an industrial zone in the north and the harbour area are considered under the regular management and regulations of the Maritime Authorities of Albania. The only strict restriction to be discussed with these Authorities will concern a full enforcement of a zero discharge policy (liquid and solid) from anchoring ships and vessels. In addition, anti-pollution equipment will have to be operational for any emergency and the staff of the marine protected area could be trained on anti-pollution procedure in case of accident. Fishing will not be permitted in this area as it is always the case in anchoring and harbour areas.

4.6.3. Basic elements for the MPA, declaration, legislation and regulations

MPAs are sites where limited or multiple activities are developed. Managed activities include research, monitoring, education, public awareness, economic activities such as tourism, fisheries...

4.6.4. Conservation principles

One should select the proper conservation category when designing a MPA. Within IUCN categories, in the Mediterranean, the most appropriate are Managed Resources Marine Protected Areas, but the national designation can be different, as Marine Protected Areas include often different management categories through a proper zoning and management plan.

Conservation of natural heritage
The objective is to protect the area's natural biological communities, habitats, ecosystems and processes, and the ecological services, uses and values they provide to the present and future generations.

Conservation and sustainable use of natural resources
The objective is for the MPA to be established and managed principally to support the continued sustainable extraction (or removal) of renewable living resources (fish, shellfish, plants..) by protecting important habitats and spawning, mating or nursery grounds.

Conservation of cultural heritage
The objective is to protect, understand, and interpret submerged cultural resources (e.g., shipwrecks, submerged archaeological sites..) that reflect the nation's maritime history and to protect traditional and cultural connections to the sea.

The three objectives of conservation can be present all together.

5. The actual legislation related to marine conservation in Albania and the proposals for improvement and approach to the relevant European legislation

5.1. *Introduction*

The objective of this chapter is to identify the key gaps in the legislation on protected areas in Albania in general, and more specifically marine areas -as this has been the weakest element of the protected area (PA) system so far).

This chapter consists of two parts. The first part provides an overview of the international and European legal framework in relation to marine protected areas. The second part includes the gap analysis. In this part, the relevant legislation for the establishment of a marine protected area in Albania is also reviewed.

5.2. *Legal international framework*

At present there is no single and comprehensive multilateral treaty or instrument that deals with marine protected areas (MPAs). However, there are numerous international instruments that aim at protecting particular marine areas. This protection is mainly based on addressing areas for a specific purpose; regulating the use and protection of species and habitats; and the prevention of environmental degradation (such as pollution). Some of these instruments have global coverage, while others have regional application.

To provide an overview of the relevant instruments (both treaties and so-called soft law) this report first focuses on the global instruments that lay down an overall framework for the establishment of MPAs. In addition, it discusses the relevant instruments that deal with species use and environmental degradation. Finally, a list of specific tools for the Mediterranean Sea as well as a list of other regional instruments relevant for the establishment of MPAs is included.

5.2.1. The overarching framework for establishing MPAs

There are various global instruments that lay the modern groundwork for the conservation and protection of global (marine) biodiversity. Viewed in combination, these instruments establish the legal basis for the establishment of MPAs as well as the tools for their management. The more recent instruments explicitly call for the establishment of MPAs.

- **1982 UN Convention on the Law of the Sea**

The United Nations Convention on the Law of the Sea (LOSC)[1] provides the legal framework for all oceans activities. It defines ocean jurisdiction zones – including the territorial sea and the

[1] United Nations Convention on the Law of the Sea, Montego Bay, 10 December 1982. In force 16 November 1994, 1833 *United Nations Treaty Series* 396; <www.un.org/Depts/los>.

exclusive economic zone (EEZ) – and establishes rules governing all uses of the oceans and their resources.[2]

Conservation

The territorial sea (which may not exceed 12 nautical miles, measured from baselines) is considered as the extension of the land territory and internal waters, within which a coastal State has sovereignty.

LOSC does not discuss the establishment of marine protected area as such – however as a consequence of the sovereign rights that are attributed to coastal States in their territorial sea, it can be assumed that this includes the right to establish conservation measures through *inter alia* the establishment of MPAs. However, the sovereignty of a coastal State over its territorial sea is exercised subject to LOSC and to other rules of international law – such as navigational rights.

PART V of LOSC defines the rights and duties of States within their EEZ. An EEZ may extend up to 200 nautical miles from the baselines. Coastal states are attributed exclusive jurisdiction for various matters over designated zones of the oceans along their coasts, including coastal zones. This includes jurisdiction for the purpose of the protection and preservation of the marine environment. At the same time, coastal States are obliged to conserve and manage the living marine resources under their jurisdiction (LOSC, Articles 192 and 61(2)). States are moreover obliged to share monitoring and assessment information.

Although the LOSC includes limited reference to specific marine species or areas, the convention has shaped ecosystem-based marine living resources agreements as well as the evolving concepts of marine protected areas.[3] The convention provides a legal basis upon which measures for the establishment of MPAs can be developed.[4] These include the obligation of States to protect and preserve the marine environment (including rare or fragile ecosystems), with a particular focus on co-operation between states, both at a global and regional level in order to formulate and elaborate the necessary international rules (Articles 192, 194 and 197 LOSC).[5] Other environmental and conservation provisions include the possibility to regulate: marine mammals (Articles 65 and 120, LOSC and in relation 61(4) and 119(1) LOSC); the introduction of new or alien species (Article 196(1) LOSC); and ice-covered areas (Article 234 LOSC). In addition, Article 62(4)(c) mentions *fishing area regulations*, as a specific tool that coastal States can use to manage fisheries within their EEZs.

This means that under the LOSC, coastal States have the right to designate marine areas as protected, on the condition that such designations fulfils obligations to protect and preserve the marine environment (Article 192) and ensures that the maintenance of living resources is not endangered by over-exploitation (Article 61(2)).

[2] Albania ratified LOSC on 23 June 2003.

[3] Kimball, L.A. and D.M. Johnston (1995), The law of the sea: priorities and responsibilities in implementing the convention, International Union for Conservation of Nature and Natural Resources, IUCN p. 17.

[4] When the LOSC was negotiated in the 1970s, MPAs were not widely used. Consequently, the LOSC does not make explicit reference to this management tool.

[5] Hart, S. (2008), Elements of a Possible Implementation Agreement to UNCLOS for the Conservation and Sustainable Use of Marine Biodiversity in Areas beyond National Jurisdiction, Marine Series No. 4, IUCN, p.3.

Navigational rights

The LOSC moreover affects the establishment of MPAs because of its provisions on the freedom of navigation: in principle the LOSC does not allow interference with the freedom of navigation of vessels from other countries.[6] Specific rules depend on the zone in which the MPA is established: the territorial sea or the EEZ.

- Territorial Sea

According to Article 17 of the LOSC, ships of all States enjoy the right of innocent passage.[7] However, according to Part II of the LOSC, coastal States may adopt laws and regulations with regard to innocent passage of foreign vessels in the territorial sea in relation to issues such as:[8]

(b) the protection of navigational aids and facilities and other facilities or installations;
(d) the conservation of the living resources of the sea;
(e) the prevention of infringement of the fisheries laws and regulations of the coastal State;
(f) the preservation of the environment of the coastal State and the prevention, reduction and control of pollution thereof.

What the coastal State cannot do is apply restrictions on the design, construction, manning or equipment of foreign vessels, unless they are giving effect to generally accepted standards.[9] Article 22 of the LOSC foresees in the possibility to designate sea lanes in the territorial sea for ships such as tankers or ships carrying dangerous or noxious substances. Regulation of innocent passage is moreover mentioned in Part XII of the LOSC (dealing with the protection and preservation of the marine environment). With the objective of protection of the marine environment the coastal state can:[10]

> in the exercise of their sovereignty within their territorial sea, adopt laws and regulations for the prevention, reduction and control of marine pollution from foreign vessels, including vessels exercising the right of innocent passage.

This means that for the establishment of a MPA, both Parts II and XII of the LOSC provide coastal states with the option to regulate shipping activities in their territorial sea for the purposes of conservation and protection of the marine environment as well as to reduce marine pollution.[11]

- EEZ

In case the MPA in established (partly) in the EEZ, a different set of rules applies regarding navigational rights of foreign vessels. Within the EEZ, the coastal state has jurisdiction for the

[6] See also National Research Council (U.S.). Committee on the Evaluation, Design, and Monitoring Marine Reserves and Protected Areas in the United States (2001), Marine protected areas: tools for sustaining ocean ecosystems, National Academies Press, p. 149.
[7] Article 18(1) of the LOSC continues that passage means « navigation through the territorial sea for the purpose of: (a) traversing that sea without entering internal waters or calling at a roadstead or port facility outside internal waters; or (b) proceeding to or from internal waters or a call at such roadstead or port facility ».
[8] LOSC, Article 21(1).
[9] LOSC, Article 21(2). This issue is increasingly taken up by the international community, such as the prohibition of single hull tankers by the EU as of 2010.
[10] LOSC, Article 211(4).
[11] However, as underlined in Article 211(4), such laws and regulations should not hamper innocent passage of foreign vessels. Coastal states should take account of the relevant recommendations of the International Maritime Organisation (IMO).

specific purpose of protection and preservation of the marine environment.[12] This means that navigational rights of other States are similar to the regime of the high seas, where freedom of navigation applies:[13]

> In the exclusive economic zone, all States…enjoy, subject to the relevant provisions of this Convention, the freedoms referred to in article 87 of navigation and overflight and of the laying of submarine cables and pipelines, and other internationally lawful uses of the sea related to these freedoms, such as those associated with the operation of ships, aircraft and submarine cables and pipelines, and compatible with the other provisions of this Convention.

However, Part XII on the protection and preservation of the marine environment provides that coastal States for the purpose of enforcement (as provided for in section 6 of PART XII) may:[14]

> in respect of their exclusive economic zones adopt laws and regulations for the prevention, reduction and control of pollution from vessels conforming to and giving effect to generally accepted international rules and standards established through the competent international organization or general diplomatic conference.

Consequently, coastal States may also define areas within their EEZs where special shipping measures (such as routeing measures) need to be applied to prevent the risk of pollution events.

- **1992 Convention on Biological Diversity**

The most important international legal instrument that addresses protected areas and provides support for national and multilateral efforts is the Convention on Biological Diversity (CBD).[15] It has three objectives: the global conservation of biodiversity; sustainable use of biological resources; and the fair and equitable sharing of benefits arising from the utilisation of genetic resources. Its clauses cover a range of topics, varying from the requirements to establish protected areas to the promotion of indigenous practices and the knowledge relevant to conservation and sustainable use. Article 2 CBD defines a protected area as "a geographically defined area, which is designated or regulated and managed to achieve specific conservation objectives". The CBD outlines measures for conserving biodiversity, including in situ and ex situ conservation measures. These measures require states to:[16]

> (a) Establish a system of protected areas or areas where special measures need to be taken to conserve biological diversity;
> (b) Develop, where necessary, guidelines for the selection, establishment and management of protected areas or areas where special measures need to be taken to conserve biological diversity.
> (c) Regulate or manage biological resources important for the conservation of biological diversity whether within or

[12] LOSC, Article 56(1)(b)(iii).
[13] LOSC, Article 58.
[14] LOSC, Article 211(5). It should be noted that Article 211(6) continues that "[w]here the international rules and standards referred to in paragraph 1 are inadequate to meet special circumstances and coastal States have reasonable grounds for believing that a particular, clearly defined area of their respective exclusive economic zones is an area where the adoption of special mandatory measures for the prevention of pollution from vessels is required for recognized technical reasons in relation to its oceanographical and ecological conditions, as well as its utilization or the protection of its resources and the particular character of its traffic, the coastal States, after appropriate consultations through the competent international organization with any other States concerned, may, for that area, direct a communication to that organization, submitting scientific and technical evidence in support and information on necessary reception facilities".
[15] Convention on Biological Diversity, Rio de Janeiro, 5 June 1992, entry into force: 29 December 1993, 31 *ILM* (1992), 818. Albania is a party to the CBD since 5 January 1994.
[16] Article 8(a) of the 1992 Convention on Biological Diversity.

outside protected areas, with a view to ensuring their conservation and sustainable use;
(d) Promote environmentally sound and sustainable development in areas adjacent to protected areas with a view to furthering protection of these areas;
(e) Cooperate in providing financial and other support for in-situ conservation, particularly to developing countries.

Other articles that are relevant for the establishment and management of protected areas include:[17]

- Articles 6 and 10 deal with 'sustainable use'. This is important because protected areas increasingly establish a management regime for multiple purposes;
- Provisions on ex-situ conservation (Article 9) and restoration / rehabilitation (Articles 8f and 14(2)) to complement on site efforts to protect habitats and species
- Provisions on tools important for protected area management and planning such as biodiversity monitoring (Article 7) and impact assessment (Article 14);
- Provisions on incentive measures (Article 11);
- Provisions on research and training (Article 12) and public education and awareness (Article 13)

The CBD does not specifically address fisheries; it applies to all terrestrial and marine biodiversity and, as such affects fisheries. Increased focus on marine protected areas can be found in the COP decisions.[18]

In the second Conference of the Parties (COP 2) in 1995, the parties to the CBD adopted the *Jakarta Mandate on the Conservation and Sustainable Use of Marine and Coastal Biodiversity.*[19] Subsequently, a Programme of Work on Marine and Coastal Biological Diversity was established in 1998.[20] This work programme includes Marine and Coastal Protected Areas as one of its five key programme elements.[21] The operational objectives in relation to the establishment and maintenance of marine and coastal protected areas include:

- To establish and strengthen national and regional systems of MCPAs integrated into a global network3 and as a contribution to globally agreed goals;
- To enhance the conservation and sustainable use of biological diversity in marine areas beyond the limits of national jurisdiction;
- To achieve effective management of existing MCPAs;
- To provide support for and facilitate monitoring of national and regional systems of MCPAs;

[17] See: http://www.cbd.int/protected/background.shtml.
[18] The decisions of the COP on marine and coastal biological diversity are: Decision II/10 B (see also SBSTTA recommendation I/8), Conservation and sustainable use of marine and coastal biological diversity; Decision IV/5, Conservation and sustainable use of marine and coastal biological diversity, including a programme of work; Decision V/3 Implementation of decision IV/5, Progress report on the implementation of the programme of work on marine and coastal biological diversity (implementation of decision IV/5); Decision VI/3, Marine and coastal biological diversity; Decision VII/5, Marine and coastal biodiversity; Decision VIII/21, Marine and coastal biological diversity: conservation and sustainable use of deep seabed genetic resources beyond the limits of national jurisdiction; Decision VIII/22, Marine and coastal biological diversity:enhancing the implementation of integrated marine and coastal area management; Decision VIII/24, Protected areas: Options for cooperation for the establishment of marine protected areas in marine areas beyond the limits of national jurisdiction; Decision IX/20, Marine and coastal biodiversity.
[19] Decision II/10 of the Second meeting of the Conference of the Parties (Jakarta, Indonesia, 1995).
[20] Annex to Decision IV/5 on Conservation and Sustainable Use of Marine and Coastal Biodiversity, as adopted by the Fourth meeting of the Conference of the Parties (Bratislava, Slovak Republic,1998)
[21] The other elements include: Integrated Marine and Coastal Management (IMCAM), Marine and Coastal Living Resources, Mariculture, and Invasive Alien Species.

- To facilitate research and monitoring activities that reflect identified global knowledge gaps and priority information needs of MCPA management.

The seventh meeting of the Conference of the Parties to the Convention on Biological Diversity (COP 7) agreed in 2004 that marine and coastal protected areas are one of the essential tools and approaches in the conservation and sustainable use of marine and coastal biodiversity (decision VII/ 5 on marine and coastal biological diversity). The COP also agreed that a national framework of marine and coastal protected areas should include a range of levels of protection, encompassing both areas that allow sustainable uses and those that prohibit extractive uses (i.e., so-called "no-take" areas). Moreover, the Conference recognised that protected areas alone could not accomplish everything, and that sustainable management practices are needed over the wider marine and coastal environment.[22]

As part of the Global Strategy for Plant Conservation (Annex to decision VI/9), the COP 6 adopted the target that by 2010 at least 10% of each of the world's ecological regions should be effectively conserved, implying increasing the representation of different ecological regions in protected areas, and increasing the effectiveness of protected areas. In addition, decision VII/28 (COP 7) suggests:

- By 2006 complete area system gap analysis at national and regional levels.
- By 2008 take action address the underrepresented of marine ecosystems in existing national and regional systems of protected areas, taking in account marine ecosystems beyond areas of national jurisdiction in accordance with applicable international laws.
- By 2009 designate the protected areas identified through the gap analysis.
- By 2012 complete the establishment of a comprehensive and ecologically representative national and regional system of Marine Protected Areas.

From the last Conference of the parties (COP 9), decisions IX/18 (on protected areas) and IX/20 (on marine and coastal biodiversity) are of specific relevance for establishing MPAs.[23]
The targets that have been established under the CBD have been re-emphasised by several other international legal instruments. These include several recommendations made at the World Parks Congresses such as Recommendation IV.11 Marine protected areas of the IVth IUCN World Parks Congress (Caracas, 1992) and Recommendations V.22 Building a Global System of Marine and Costal Protected Area Networks and V.23 Protecting Marine Biodiversity and Ecosystem Processes through Marine Protected Areas beyond National Jurisdiction of the Vth IUCN World Parks Congress (Durban, 2003).

- **1992 Climate Change Convention**

The Intergovernmental Panel on Climate Change confirms that sea level rise is affecting coastal ecosystems, including coral reefs, mangroves and salt-marshes.[24] The 1992 Climate Change Convention[25] underlines in its preamble the awareness of the role and importance in terrestrial

[22] See <http://www.cbd.int/protected/work.shtml>. See for Decision VII/5: <http://www.cbd.int/decision/cop/?id=7742>.
[23] See <http://www.cbd.int/decisions/cop/?m=cop-09> for the COP 9 decisions.
[24] Dudley, N. (2003), No place to hide : Effects of Climate Change on Protected Areas, WWF Climate Change Programme.
[25] United Nations Framework Convention on Climate Change (UNFCCC), New York, 9 May 1992, entry into force: 21 March 1994, 31 *ILM* (1992)), 849.

and marine ecosystems of sinks and reservoirs of greenhouse gases. In line with this, Article 4(1)(d) of the convention list as a commitment of the parties, the need to:

Promote sustainable management, and promote and cooperate in the conservation and enhancement, as appropriate, of sinks and reservoirs of all greenhouse gases not controlled by the Montreal Protocol, including biomass, forests and oceans as well as other terrestrial, *coastal and marine ecosystems*; (Article 4(1)(d)).

- **Agenda 21 (Chapter 17)**

Agenda 21 (1992) is a non-binding comprehensive blueprint for environmental action that integrates economic and social considerations into a broader sustainable development response to environmental problems. It defines biodiversity as a capital asset with the potential to yield sustainable benefits if managed properly. Moreover, Agenda 21 underlines that the LOSC provides the legal basis upon which to pursue the protection and sustainable development of the marine environment as well as its coastal resources.

For the establishment of MPAs, Chapter 17 (on the "protection of oceans, all kinds of seas, including enclosed and semi-enclosed seas, and coastal areas and the protection, rational use and development of their living resources") is of specific relevance. One of the sections of Chapter 17 deals with integrated management and sustainable development of coastal and marine areas and calls on coastal states to undertake measures to maintain biological diversity and productivity of marine species and habitats under national jurisdiction. These measures can include the establishment and management of protected areas.[26] More specific measures for practical implementation include:[27]

Coastal States, where necessary, should improve their capacity to collect, analyse, assess and use information for sustainable use of resources, including environmental impacts of activities affecting the coastal and marine areas. Information for management purposes should receive priority support in view of the intensity and magnitude of the changes occurring in the coastal and marine areas. To this end, it is necessary to, inter alia:

(a) Develop and maintain databases for assessment and management of coastal areas and all seas and their resources;
(b) Develop socio-economic and environmental indicators;
(c) Conduct regular environmental assessment of the state of the environment of coastal and marine areas;
(d) Prepare and maintain profiles of coastal area resources, activities, uses, habitats and *protected areas* based on the criteria of sustainable development;
(e) Exchange information and data.

States should identify marine ecosystems exhibiting high levels of biodiversity and productivity and other critical habitat areas and should provide necessary limitations on use in these areas, through, inter alia, *designation of protected areas*. Priority should be accorded, as appropriate, to: (a) Coral reef ecosystems; (b) Estuaries; (c) Temperate and tropical wetlands, including mangroves; (d) Seagrass beds; [and] (e) Other spawning and nursery areas.

[26] Article 17.7 of Chapter 17 of Agenda 21.
[27] Articel 17.8 and 17.85 of Chapter 17 of Agenda 21 respectively.

- **2002 World Summit on Sustainable Development**

The WSSD Plan of Action calls for the application of an ecosystem approach to fisheries by 2010 as well as the restoration of depleted fish stocks by 2015.[28] While referring to Chapter 17 of Agenda 21, the WSSD Plan of Implementation underlines the need to promote the conservation and management of the oceans through actions at all levels, giving due regard to the relevant international instruments to:

(a) Maintain the productivity and biodiversity of important and vulnerable marine and coastal areas, including in areas within and beyond national jurisdiction;
(b) Implement the work programme arising from the Jakarta Mandate on the Conservation and Sustainable Use of Marine and Coastal Biological Diversity of the Convention on Biological Diversity, including through the urgent mobilization of financial resources and technological assistance and the development of human and institutional capacity, particularly in developing countries;
(c) Develop and facilitate the use of diverse approaches and tools, including the ecosystem approach, the elimination of destructive fishing practices, *the establishment of marine protected areas* consistent with international law and based on scientific information, including representative networks by 2012 and time/area closures for the protection of nursery grounds and periods, proper coastal land use; and watershed planning and the integration of marine and coastal areas management into key sectors;
(d) Develop national, regional and international programmes for halting the loss of marine biodiversity, including in coral reefs and wetlands;
(e) Implement the RAMSAR Convention, including its joint work programme with the Convention on Biological Diversity, and the programme of action called for by the International Coral Reef Initiative to strengthen joint management plans and international networking for wetland ecosystems in coastal zones, including coral reefs, mangroves, seaweed beds and tidal mud flats.

5.2.2. Prevention of pollution of the marine environment

- **1972 London Convention**

The Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter is one of the first global conventions to protect the marine environment from human activities and has been in force since 1975. Its objective is to promote the effective control of all sources of marine pollution and to take all practicable steps to prevent pollution of the sea by dumping of wastes and other matter. It prohibits the dumping of certain hazardous materials. In addition, the Convention requires a prior special permit for the dumping of a number of other identified materials and a prior general permit for other wastes or matter.

Article 3(1) of the 1972 Convention defines 'dumping' as (i) any deliberate disposal at sea of wastes or other matter from vessels, aircraft, platforms or other man-made structures at sea; [and] (ii) any deliberate disposal at sea of vessels, aircraft, platforms or other man-made structures at sea. A similar definition is used in LOSC (Article 1(1)(5)).

- **1973 MARPOL Convention**

The Convention on Prevention of Pollution from Ships (MARPOL 1973, 1978, and Protocol) restricts vessel discharges of noxious substances and allows for the designation of areas that

[28] See 2002 WSSD, Recommendations 29(d) and 30(a) respectively.

require special protection from maritime activities. The related London Dumping Convention lists ecologically detrimental substances. The six annexes accompanying the convention make MARPOL work in practice:

- Annex I prevention of pollution by oil
- Annex II: regulations for the prevention of pollution by noxious liquid substances in bulk
- Annex III: prevention of harmful substances carried by sea in packaged form
- Annex IV: prevention of pollution by sewage
- Annex V: prevention of garbage from ships
- Annex VI: prevention of air pollution from ships

A similarity in the regulatory approach of these Annexes is "the concept of special areas intended to grant a higher level of protection to specific vulnerable parts of the ocean".[29] The concept of special areas is defined in Annex I, II and V to the MARPOL Convention. All Annexes use the as a definition for a special area:[30]

A sea where for recognized technical reasons in relation to its oceanographical and ecological condition and the particular character of its traffic the adoption of special mandatory methods for the prevention of sea pollution by oil [or by noxious liquid substances or by garbage respectively] is required.

- **1995 Global programme of action for the protection of the marine environment from land-based activities**

The Global Program of Action for Protection of the Marine Environment from Land Based Activities (GPA) is a voluntary framework agreement covering pollution abatement based on source categories such as sewage, radionuclides, and nutrients. It also includes provisions for the protection of critical habitat. At the national level, states are called on to identify critical habitats, such as coral reefs, wetlands, seagrass beds, coastal lagoon and mangrove forest and "specially protected marine and coastal areas". Following, states are required to apply integrated coastal area management approaches and take steps for the protection of critical habitats and endangered species – such as by means of the establishment of MPAs. Part of the activities (described in section 3) includes national actions, policies and measures:

152. Actions, policies and measures of States within their capacities should include the formulation, adoption and implementation of programmes for integrated coastal area management, in accordance with Agenda 21, chapter 17 (programme area A). These programmes should include, where appropriate:
(a) The identification of habitats of major socio-economic and ecological significance such as spawning grounds, breeding grounds and nurseries of marine living resources which guarantee food security of large coastal populations;
(b) Conducting assessments that involve the use of community-based participatory approaches, to identify land-based activities that threaten physical degradation or destruction of key habitats;

[29] Kachel, M.J. (2008), *Particularly Sensitive Sea Areas: The IMO's Role in Protecting Vulnerable Marine Areas*, Springer, p. 96-97.
[30] This is further elaborated upon by : Res A.927(22), *Guidelines for the Designation of Special Areas under MARPOL 73/78 and Guidelines for the Identification and designation of Particular Sensitive Areas*, adopted on 15 January 2002.

(c) Encouraging economic and social sectors whose activities may lead to physical degradation or destruction of such habitats to adjust those activities so as to reduce or avoid such effects;
(d) The *establishment of marine protected areas* in coastal areas to maintain the integrity and biological diversity of their habitats;
(e) Restoration of coastal habitats that have suffered decline or loss as a result of human activities.

Regional actions should include the formulation and adoption of regional-scale approaches to safeguarding critical habitats such as "(a) Regional systems of marine and coastal protected areas; [and] (b) Regional programmes of action and protocols on important species and habitats".[31]

- **1991 Espoo Convention**

The Convention on Environmental Impact Assessment in a Transboundary Context establishes a framework to consider environmental factors in domestic decisions concerning large-scale industrial projects and to notify other states of potential impacts.[32] The Espoo Convention makes it possible for EIAs to be required in respect of proposed activities located in or close to (marine) areas of special environmental sensitivity or importance.

- **1998 OSPAR Convention**

The Convention for the Protection of the Marine Environment of the North East Atlantic covers the Nordic countries and requires them to take all possible steps to prevent and eliminate pollution, protect the maritime area, conserve marine biodiversity, and use marine resources sustainably.

The Convention requires parties to take the necessary measures "to protect [and] conserve marine ecosystems".[33] Parties should use "means, consistent with international law, for instituting protective, conservation, restorative or precautionary measures related to *specific areas or sites* or related to particular species or habitats".[34]

5.2.3. The use and protection of species and habitats

- **1946 International Convention for the Regulation of Whaling**

The International Convention for the Regulation of Whaling (1946) seeks to protect whales from overhunting and to regulate the international whale fishery to ensure proper conservation and development of whale stocks. The 1946 Whaling Convention includes provisions to protect whales, including the establishment of a "protected area" by means of sanctuary areas:[35]

[31] Article 153. See: <http://www.gpa.unep.org/documents/full_text_of_the_english.pdf>.
[32] Albania ratified the Espoo Convention on 4 October 1991. Following, Albania also ratified the amendments and the protocol.
[33] Article 2 to the OSPAR Convention.
[34] Article 3 to the Annex V to the OSPAR Convention.
[35] Article V of the 1946 Whaling Convention.

The Commission may amend from time to time the provisions of the Schedule by adopting regulations with respect to the conservation and utilization of whale resources, fixing (a) protected and unprotected species; (b) open and closed seasons; (c) open and closed waters, including the designation of sanctuary areas; (d) size limits for each species; (e) time, methods, and intensity of whaling (including the maximum catch of whales to be taken in any one season); (f) types and specifications of gear and apparatus and appliances which may be used; (g) methods of measurement; and (h) catch returns and other statistical and biological records.

- **1971 Ramsar Convention**

The Convention on Wetlands of International Importance especially as Waterfowl Habitat calls on parties to protect migratory stocks of waterbirds and their wetland habitats and to apply the principle of "wise use," as defined by the convention. In doing so, it is an intergovernmental treaty which provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. Under the Ramsar Convention "wetlands" are defined as "areas of marsh, fen, peatland or water, whether natural or artificial, permanent of temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres".[36] This can include coastal zones.[37] Under the Ramsar Convention, countries designate wetlands of international importance as Ramsar sites. The fact that areas are classified under the "Classification System for Wetland Type", does not necessarily mean that these areas are subject to a national protection regime.[38]

- **1972 UNESCO World Heritage Convention**

The Convention Concerning the Protection of the World's Cultural and Natural Heritage calls on parties to designate natural areas and cultural sites of outstanding universal value and to preserve them. The convention provides for the identification of world heritages sites which are situated within the territory of the state. For the establishment of MPAs, this means that this convention can be relevant when the areas are situated in the internal waters and the territorial sea. From the different criteria listed, only few are of specific relevance for marine protected areas:[39]

• Criteria vii: contain superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance;
• Criteria viii: be outstanding examples representing major stages of earth's history, ncluding the record of life, significant on-going geological processes in the development of landforms, or significant geomorphic or physiographic features;
• Criteria ix: be outstanding examples representing significant ongoing ecological and biological processes in the evolution and development of terrestrial, fresh water, coastal and marine ecosystems and communities of plants and animals;
• Criteria x: contain the most important and significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science or conservation.

[36] Article 1(1) of the 1971 Ramsar Convention.
[37] Article 2(1) of the 1971 Ramsar Convention continues that: "[t]he boundaries of each wetland shall be precisely described and also delimited on a map and they may incorporate riparian and coastal zones adjacent to the wetlands, and islands or bodies of marine water deeper than six metres at low tide lying within the wetlands, especially where these have importance as waterfowl habitat".
[38] See < http://www.ramsar.org/ris/key_ris_types.htm>.
[39] http://whc.unesco.org/archive/opguide08-en.pdf. See p. 20 on the criteria for the assessment of outstanding universal value.

In 2005, the World Heritage Marine programme was launched by the World Heritage Committee. This had the objective to safeguard the world's marine natural heritage as well as to use the convention to promote the marine environment. The objectives of the World Heritage Marine programme are listed as:

1. Use the World Heritage Convention innovatively to promote large-scale marine conservation, for example through encouraging transboundary and serial nominations. Networks of marine protected areas, national or regional, can be nominated as one World Heritage site. The Marine Programme aims to facilitate collaboration between governments and stakeholders for the conservation of networks of marine protected areas, using the prestige of the World Heritage Convention to leverage support.
2. Develop strategic partnerships in support of marine World Heritage. Partnerships are critical in order to support nominations in areas with less political capacity or a smaller information base, as well as to manage sites effectively.

3. Build a Marine World Heritage Managers Network to strengthen conservation capacity and effective management. Building a network of coastal-marine-island World Heritage site managers and managers preparing nominations will enhance marine conservation effectiveness. It will enable these sites to become models of best practices and to share experiences with sites preparing nominations as well as with sites already inscribed on the List.

- **1973 CITES Convention**

The Convention on Trade in Endangered Species is designed to conserve wildlife species by controlling international trade in endangered flora, fauna, their parts, and derivative products through a system of import and export permits.[40] According to the convention, all import, export, re-export and introduction from the sea of species covered by the Convention requires authorisation through a licensing system.[41]

The species (which are grouped in the Appendices according) include some 'groups' such as cetaceans (whales, dolphins and porpoises) or sea turtles as well as 'species' (such as several species of fish).[42]

- **1979 Bern Convention**

The Bern Convention on European Wildlife and Natural Habitats (1979) is intended to conserve wild flora and fauna and their natural habitats with particular emphasis on rare and endangered species. The aim of the Convention is described as "to conserve wild flora and fauna and their natural habitats, especially those species and habitats whose conservation requires the co-operation of several States, and to promote such co-operation [while] particular emphasis is given to endangered and vulnerable species, including endangered and vulnerable migratory species".[43]

In 1998, the Bern Convention led to the establishment of the *Emerald Network* of Areas of Special Conservation Interest (ASCIs). This ecological network was launched by the Council of Europe as part of its work under the Bern Convention. The Emerald Network is based on the

[40] Accession by Albania on 27 June 2003.
[41] See http://www.cites.org/eng/disc/how.shtml.
[42] See: http://www.cites.org/eng/app/index.shtml.
[43] Article 1(1) and (2) of the 1979 Bern Convention.

same principles as Natura 2000. This "de-facto" extension of the Nature 2000 to non-community countries includes Albania.

- **1982 World Charter for Nature**

The World Charter for Nature, a resolution of the United Nations General Assembly, acknowledges that humans are a part of nature and receive benefits from it. Ecosystems and organisms used by humans are to be managed to achieve optimum sustainable productivity, but not at the expense of other species or ecosystems with which they co-exist. It calls for the establishment of protection in special areas: "All areas of the earth, both land and sea, shall be subject to these principles of conservation; special protection shall be given to unique areas, to

representative samples of all the different types of ecosystems and to the habitats of rare or endangered species".[44]

- **1983 Bonn Convention**

The Convention on the Conservation of Migratory Species of Wild Animals aims to protect endangered migratory species and migratory species with an unfavourable conservation status. The convention is concerned with the conservation of wildlife and habitats on a global scale and aims to conserve terrestrial, *marine* and avian migratory species throughout their range. It facilitates species agreements among countries within the range of that species.

The convention provides an incentive to establish Marine Protected Areas in two ways. First, the Appendixes to the convention list species that are threatened with extinction. Parties to the convention have the objective to protect these animals, by, conserving or restoring the places where they live, mitigating obstacles to migration and controlling other factors that might endanger them.[45] Second, the several specific agreements have been concluded under the auspices of Bonn Convention CMS, which include the cetaceans of the Mediterranean Sea, the Mediterranean Monk Seal and the African-Eurasian Migratory Waterbirds – all affecting Albania's sea.

- **1995 UN Fish Stocks Agreement**

The Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, New York, 4 December 1995 (UN Fish Stocks Agreement)[46] builds on the provisions of LOSC concerning fish species that move between EEZs and the high seas, (i.e. international waters) or migrate over long distances. It aims to optimise use and ensure the long-term conservation and sustainable use of target species while avoiding negative impacts on other species.

Although the UN Fish Stocks Agreement does not explicitly refer to marine protected areas, it has adopted several measures that deal with the protection of marine biodiversity. These include,

[44] UNGA Res. A/RES/37/7, 48th plenary meeting, 28 October 1982.
[45] Http://www.cms.int/about/intro.htm.
[46] Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, New York, 4 December 1995; 2167 UNTS 3.

inter alia, the application of the precautionary approach; the assessment of the impacts of fishing, other human activities and environmental factors on target stocks and species belonging to the same ecosystem or associated with or dependent upon the target stocks; the adoption of conservation and management measures for species belonging to the same ecosystem or associated with or dependent upon the target stocks; to minimise pollution, waste, discards etc; and measures to prevent overfishing.[47] However, there is increasing concern that the current legal framework is not sufficient to manage these fish stocks (and related habitats) and provide for a sound basis for effective regulation. This has led to calls for additional measures, such as the establishment of marine protected areas on the high seas as well as the imposition of a global moratorium on unsustainable fishing practices, such as bottom trawling.[48]

- **1995 FAO Code of Conduct**

The FAO Code of Conduct for Responsible Fishing is a non-legally binding code, but with important links to UNCLOS. The Code expects States to implement appropriate measures within the precautionary principle framework to minimise waste, discards, ghost-fishing, and negative impacts of fishing on associated or dependent species.

Although the FAO Code of Conduct does not explicitly refer to marine protected areas, it emphasises the link between fisheries management and integrates coastal area management.[49] Article 10(1)(1) of the Code of Conduct formulates that "States should ensure that an appropriate policy, legal and institutional framework is adopted to achieve the sustainable and integrated use of the resources, taking into account the fragility of coastal ecosystems and the finite nature of their natural resources and the needs of coastal communities". As part of the policy measures relevant for the integration fo fisheries into coastal zone management, the Code of Conduct underlines that "States should promote the creation of public awareness of the need for the protection and management of coastal resources and the participation in the management process by those affected".[50]
The Code of Conduct should be viewed in relation to the four international plans of actions (IPOAs) and technical guidelines (designed to facilitate the implementation of the Code).[51] The FAO Technical Guidelines on fisheries management (FAO, 1997) formulate that marine protected areas can have a critical role to play in sustainable fishing... [and] can also play an important role in preserving critical habitats or sensitive life stages of species.

One of the conclusions of the FAO workshop on marine Protected Areas (2006) was that it can be expected that fisheries management will increasingly apply a diverse set of management tools,

[47] Article 5 (c) until (h) of the 1995 Straddling Stocks Convention.
[48] Satya N. Nandan (2005), Current Fisheries Governance, presentation at the Conference of the Governance of High Seas Fisheries and the United Nations Fish Agreements, Canada.
See also http://www.dfo-mpo.gc.ca/fgc-cgp/documents/presentations/nandan_e.htm.
[49] Salm, R.V., Clark, J.R., and E. Siirila (2000), *Marine and coastal protected areas: a guide for planners and managers*, Marine and Coastal Areas Programme, International Union for Conservation of Nature and Natural Resources, IUCN, p. 150.
[50] Article 10(2)(1) of the 1995 FAO Code of Conduct for Responsible Fisheries.
[51] IPOA–Sharks (1999); IPOA–Seabirds (1999); IPOA–Capacity (1999); and IPOA–IUU (2001).

including MPAs.[52] The FAO is in the process of preparing technical guidelines on the design, implementation and review of MPAs as a tool for fisheries management.

- **2009 Manado Recommendations**

Indonesia recently organised the World Ocean Conference (WOC2009) – which was held in Manado in May 2009. This conference was attended by Ministers and High Level Government Officials and High Level Officials from multilateral organisations to discuss current issues in the marine field, mainly including the ones which are related to climate change. This led to the adoption of the Manado Ocean Declaration, which underlines the importance of marine protected areas:[53]

> We resolve to further establish and effectively manage *marine protected areas*, including representative resilient networks, in accordance with international law, as reflected in UNCLOS, and on the basis of the best available science, recognizing the importance of their contribution to ecosystem goods and services, and to contribute to the effort to conserve biodiversity, sustainable livelihoods and to adapt to climate change.

In addition, the conference foresees in the adoption of a Plan of Action and the establishment of the World Ocean Forum, which should function as the umbrella organisation for implementing the Plan of Action.[54]

- **1991 IMO Guidelines for the Designation of Special Areas and the Identification of Particularly Sensitive Areas (Resolution A.720(17))55**

[52] Report and documentation of the Expert Workshop on Marine Protected Areas and Fisheries Management: Review of Issues and Considerations. Rome, 12–14 June 2006. FAO Fisheries Report. No. 825. Rome 2007, FAO, p.4.
[53] Para. 15 of the Manado Ocean Declaration, adopted on 14 May 20098 in Manado.
[54] Http://www.woc2009.org/woc_output.php.
[55] See also resolution A.885(21), adopted in 1999. In 2002, this resolution was superseded by resolution A.927 (22).

The IMO guidelines provide two instruments for the protection of marine areas: both Special Areas and Particular Sensitive Sea Areas are regulated through MARPOL. Whereas a Particular Sensitive Sea Area (PSSA) can be designated anywhere in the sea area, Special Areas are designed for enclosed and semi closed seas by prescribing operational discharges of oil. Designation of a sea area as Special Area further requires the fulfilment of one criterion in each of the categories in the IMO guidelines. Moreover, States can only take protective measures in a Special Area for the reason of prevention of sea pollution under MARPOL 73/78. Accordingly, MARPOL Annex I (oil), II (Noxious Liquid substances), IV (sewage) and V(garbage) set forth special discharge standards applicable inside of Special Areas designated by the IMO.[56] In Annexes I (Prevention of pollution by oil), II (Control of pollution by noxious liquid substances) and V (Prevention of pollution by garbage from ships), the MARPOL Convention defines certain sea areas as "special areas". Here, for technical reasons relating to their oceanographical and ecological conditions and to their sea traffic, the adoption of special mandatory methods for the prevention of sea pollution is required. Under the Convention, these special areas are provided with a higher level of protection than other areas of the sea.[57] The Mediterranean Sea has been designated as a special area under MARPOL Annex I (Oil) and Annex V (Garbage).

5.2.4. Specific tools for the Mediterranean Sea

- **1976 Barcelona Convention**

The Barcelona Convention (adopted in 1976 by 16 countries and the European Community as part of the Regional Seas Programme of the United Nations Environment Program (UNEP)) can be considered as the foundational document for regional cooperation with respect to the protection of the environment in the Mediterranean. Many of the diverse international cooperation initiatives in the Mediterranean are directly or indirectly targeted at the implementation of the Convention and its Protocols.

The 1976 Barcelona Convention and Protocol Concerning Specially Protected Areas and Biological Diversity in the Mediterranean have been replaced by the 1995 Protocol Concerning Mediterranean Specially Protected Areas and Biological Diversity in the Mediterranean. The 1995 Protocol formulates as a general obligation that every party shall take measures necessary to "protect, preserve and manage in a sustainable and environmentally sound way areas of particular natural or cultural value, *notably by the establishment of specially protected areas*".[58]

The 1995 Protocol provides a list of protection measures that should be established – depending on the characteristics of the specially protected area, including:[59]

- the strengthening of the application of the other Protocols to the Convention;
- the prohibition of the dumping or discharge of wastes and other substances likely directly or indirectly to impair the integrity of the specially protected area;
- the regulation of the passage of ships and any stopping or anchoring;

[56] Ünlü, N., Particularly Sensitive Sea Areas: Past, Present and Future, IMO. See http://www.imo.org/includes/blastDataOnly.asp/data_id%3D17988/Particularly.pdf

[57] Http://www.imo.org/Environment/mainframe.asp?topic_id=760

[58] Article 3(1)(a) of the 1995 Protocol Concerning Mediterranean Specially Protected Areas and Biological Diversity in the Mediterranean.

[59] Article 6 to the 1995 Protocol.

- the regulation of the introduction of any species not indigenous to the specially protected area;
- the regulation or prohibition of any activity involving the exploration or modification of the soil;
- the regulation of any scientific research activity;
- the regulation or prohibition of fishing, hunting, taking of animals and harvesting of plants or their destruction;
- the regulation and if necessary the prohibition of any other activity or act likely to harm or disturb the species or that might endanger the state of conservation of the ecosystems
- any other measure aimed at safeguarding ecological and biological processes and the landscape.

In order to get these protection measures in place, the parties should include planning, management, supervision and monitoring measures, including:[60]

- the development and adoption of a management plan that specifies the legal and institutional framework and the management and protection measures applicable;
- the continuous monitoring of ecological processes, habitats, population dynamics, landscapes, as well as the impact of human activities;
- the active involvement of local communities and populations, as appropriate, in the management of
- specially protected areas, including assistance to local inhabitants who might be affected by the establishment of such areas;
- the adoption of mechanisms for financing the promotion and management of specially protected areas, as well as the development of activities which ensure that management is compatible with the objectives of such areas;
- the regulation of activities compatible with the objectives for which the specially protected area was established and the terms of the related permits;
- *the training of managers and qualified technical personnel, as well as the development of an appropriate infrastructure.

- **The Mediterranean Action Plan (MAP)**

The Secretariat for the Barcelona Convention is provided by UNEP Mediterranean Action Plan (MAP), which is based in Athens, along with the coordination unit from where the MEDPOL programme (the Programme for the Assessment and Control of Pollution in the Mediterranean Region) is managed.

- **Horizon 2020**

To combat the ongoing decline of the marine environment in the Mediterranean Sea, the Horizon 2020 initiative was launched in December 2005 following endorsement at the High level Ministerial meeting. The 2006 Environment Ministerial Conference in Cairo sustained this initiative. The aim of the Horizon 2020 initiative (hereinafter H2020) – to eliminate pollution in the Mediterranean Sea by 2020, - is ambitious, but a priority need. It should however be emphasised that de-pollution in this context cannot simply be read as clean-up activities; it also covers changes in management practices that will lead to reductions or elimination of pollution sources. This should be established through *inter alia* – identification and prioritisation of pollution reduction projects (in close cooperation with organisations such as the WB, EIB and MAP); capacity-building measures to help neighbouring countries create national environmental administrations that are able to develop and police environmental laws; research that supports environmental policy; and monitoring, steering and review (including development of indicators to measure the progress of the initiative).

This initiative operates within the existing political processes and institutions and is therefore be strongly linked to existing and future policy instruments, such as (i) EU environmental policies

[60] Article 7 to the 1995 Protocol.

and measures in the field of water quality and management, waste management and industrial pollution prevention, (ii) The Barcelona Convention, UNEP-MAP and the related activities in the Regional activity centers (RACs); (iii) The Mediterranean Strategy for Sustainable development (MSSD), the EU Water Initiative (EUWI) and its Mediterranean component. In doing so, H2020 builds upon and further strengthens these agreed actions to provide a renewed incentive to the de-pollution of the Mediterranean, rather that to create new political processes or institutions – in which it resembles the World Summit on Sustainable Development that focused on the implementation of existing agreements instead of new standard setting

- **Strategic Partnership for the Mediterranean Large Marine Ecosystem**

At the beginning of 2008, a new GEF-financed initiative -- the "Strategic Partnership for the Mediterranean Large Marine Ecosystem" was launched. The GEF Strategic Partnership is expected to accelerate the implementation of the regional Strategic Action Program (SAP) aimed at reducing land-based sources of marine pollution (SAP-MED) and at protecting biodiversity and living resources and their habitats. The initiative is a collective effort between GEF, UNEP and the World Bank to provide financial resources and technical knowledge available to countries to improve environmental conditions of the Mediterranean Sea through a combination of capital investments, economic instruments and regulatory frameworks.

The GEF Strategic Partnership is planning to achieve its objectives through the implementation of two components: (i) a regional component with the implementation of supporting actions in the countries for the protection of the Environmental Resources of the Mediterranean and its Coastal areas (by UNEP and partners) and (ii) Investment Fund for the Mediterranean Sea Large Marine Ecosystem Partnership (World Bank). The latter will become a leveraging tool of 100 million $ with grant funding facilitating 1:3 co-financing of a country specific project pipeline with the aim of assisting the implementation of the NAP priorities. The GEF Strategic Partnership is envisaged to be located in the UNEP/MAP offices in Athens. Close cooperation with this new instrument will be essential in order to create valuable synergies and avoid duplication.

5.2.5. European Framework

- **Directive 2008/56/EC (Marine Strategy Framework Directive)**

The Marine Strategy Framework Directive (which came into force in July 2008) requires Member States to put measures in place to achieve or maintain Good Environmental Status (GES) in their waters by 2020. For this purpose, marine strategies of the member States shall be developed and implemented in order to:[61]

a) protect and preserve the marine environment, prevent its deterioration or, where practicable, restore marine ecosystems in areas where they have been adversely affected; (b) prevent and reduce inputs in the marine environment, with a view to phasing out pollution as defined in Article 3(8), so as to ensure that there are no significant impacts on or risks to marine biodiversity, marine ecosystems, human health or legitimate uses of the sea.

[61] Article 1(2) of the Marine Strategy Framework Directive.

It moreover aims to protect the resource base upon which marine-related economic and social activities depend. This directive constitutes the vital environmental component of the Union's future maritime policy, designed to achieve the full economic potential of oceans and seas in harmony with the marine environment. As it seems this strategy meets a twofold objective: to protect and restore Europe's seas and ensure the ecological sustainability of economic activities linked to the marine environment by 2020. Maintaining the biological diversity of the marine ecosystem is considered as a key element in achieving GES. The Directive provides the Member States with the option to decide which measures are implemented to achieve GES. It does however explicitly refer to MPAs as an important contribution to achieve GES. These should address all human activities that have an impact on the marine environment. A specific target under the Directive is the establishment of a coherent and representative network of MPAs by 2016.

The Marine Strategy Framework Directive establishes European Marine Regions on the basis of geographical and environmental criteria.[62] Each Member State cooperating with other Member States and non-EU countries within a marine region are required to develop strategies for their marine waters. In this context Europe's seas are divided into three regions (with possible subregions): the Baltic Sea, the North-East Atlantic and the Mediterranean. In each region (and possibly in the subregions to which they belong), the Member States concerned must coordinate their actions with each other and the third countries involved. To this end they can benefit from the experience and capabilities of existing regional organisations.

Obligations to be realised:

a. Marine strategies at regional level

Member States must firstly assess the ecological status of their waters and the impact of human activities.[63] This assessment covers:

- an analysis of the essential characteristics of these waters (physical and chemical features, types of habitat, animal and plant populations, etc.);
- an analysis of the main impacts and pressures, particularly as a result of human activities which affect the characteristics of these waters (contamination by toxic products, eutrophication, smothering or sealing of habitats by construction work, introduction of non-indigenous species, physical damage caused by ship anchors, etc.);
- an economic and social analysis of the use of these waters and the cost of the degradation of the marine environment.

This initial evaluation will help to improve knowledge of European waters, thanks to instruments already used for other policies such as GMES (Global Monitoring for Environment and Security) and the programme commonly called INSPIRE (Infrastructure for Spatial Information in Europe).

b. The Marine strategy to be developed by each member state must contain a detailed assessment of the state of the environment, a definition of "good environmental status" of the waters for

[62] Article 4 of the Marine Strategy Framework Directive.
[63] Article 8(1) of the Marine Strategy Framework Directive.

which they are responsible on the basis of the criteria to be drawn up by the Commission and the results of the evaluation of waters that they have carried out.[64]

c. On the basis of the evaluation of waters, the Member States must define the objectives and indicators to achieve this good ecological status.[65] These objectives must be measurable, consistent within a particular maritime region or subregion and tied to a definite timetable.

d. Member States draw up a programme of specific measures to achieve these objectives. These measures must give due consideration to their economic and social consequences. Member States must specify the reasons preventing successful completion of any of these measures (action or inaction of another State, force majeure, etc.). Before they are implemented, the measures decided by the Member States must be the subject of impact assessments and cost/benefit analyses.[66]

e. Member States must also establish coordinated monitoring programmes in order to evaluate on a regular basis the status of the waters for which they are responsible and progress with regard to the objectives they have set.[67]

f. Strategies are reviewed every six years and interim reports are drawn up every three years.
Where Member States cannot reach the environmental targets specific measures tailored to the particular context of the area and situation will be drawn up.[68]

The goal of the Marine Strategy Framework Directive is in line with the objectives of the 2000 Water Framework Directive which requires surface freshwater and groundwater bodies-such as lakes, streams, rivers, estuaries, and coastal waters-to be ecologically sound by 2015 and that the first River Basin Management Plan should take place in 2020.

- **NATURA 2000**

Natura 2000 is an EU-wide network of nature protection areas with the objective to assure the long-term survival of Europe's most valuable and threatened species and habitats. Its focus is to create a coherent network of protected areas, which includes both Special Protection Areas (SPAs) under the 1979 Birds Directive, and Special Areas of Conservation (SACs) under the 1992 Habitats Directive. The protection of the marine environment has been made part of this programme.

Directive 79/409/EEC (the Birds Directive)
Under the Birds Directive, Member States are required to select the most suitable sites and designate them as a Special Protection Areas (SPAs) after which they automatically become part of the Natura 2000 network. The identification and delimitation of SPAs must be on the basis of scientific criteria. According to 4 of the Directive, "Member States shall classify in particular the

[64] Article 9 of the Marine Strategy Framework Directive.
[65] Article 10 of the Marine Strategy Framework Directive. Annex VI to the Directive sets out an "Indicative list of characteristics to be taken into account for setting environmental targets".
[66] Article 13 of the Marine Strategy Framework Directive.
[67] Article 11 of the Marine Strategy Framework Directive.
[68] Articles 17 and 18 of the Marine Strategy Framework Directive.

most suitable territories in number and size as SPAs for the conservation of these species, taking into account their protection requirements in the geographical sea and land area where this Directive applies". The designation of a site as an SPA has as a consequence that the legal protective requirements as formulated in Article 6 (2),(3),(4) of the Habitats Directive apply to it.

Directive 92/43/EEC (the Habitats Directive)
Under the Habitats Directive, Member States are required to draft a list of Sites of Community Importance (SCI). The criteria for selecting these sites need to be in accordance with annex III of the Habitats Directive and relevant scientific information.[69] Once a site of Community importance has been adopted, the Member State concerned shall designate that site as a special area of conservation.[70] Article 6 of the Habitats Directive lays down the main principles on the protection of areas of Community importance. Member states are required to establish the necessary conservation measures involving, if need be, appropriate management plans (Article 6(1)). Moreover, they are required to take appropriate steps to avoid, in the special areas of conservation, the deterioration of natural habitats and the habitats of species as well as disturbance of the species for which the areas have been designated, insofar as such disturbance could be significant in relation to the objective of this Directive (Article 6(2)).

Marine protection
The 6th Environmental Action Programme of the European Community identifies 'nature and biodiversity' as one of the priority themes. Objectives and priority areas for action on nature and biodiversity include to (further) promote the protection of marine areas, in particular with the Natura 2000 network as well as by other feasible Community means.[71]

In May 2006, the Commission underlined the importance of biodiversity protection as a pre-requisite for sustainable development in its communication on "Halting biodiversity loss by 2010 and beyond: sustaining ecosystem services for human well-being". In addition, an EU Biodiversity Action Plan was established to achieve these goals – in which several references to marine protected areas are included. The EU Biodiversity Action Plan addresses the challenge of integrating biodiversity concerns into other policy sectors in a unified way. It specifies a comprehensive plan of priority actions and outlines the responsibility of community institutions and Member States in relation to each. It also contains indicators to monitor progress and a timetable for evaluations. The European Commission has undertaken to provide annual reporting on progress in delivery of the Biodiversity Action Plan.

Depending on the specific objectives of conservation of the marine SPAs and SCI (the Natura 2000 sites), Member States may envisage the implementation of certain fisheries management

[69] Article 4(2) of the Habitats Directive. Member States identify and carry out an assessment (at national level) of the relative importance of sites for each natural habitat type in Annex I and each species contained in Annex II (including priority natural habitat types and priority species) on the basis of which the Member State proposes a list of SCI to the EC.
[70] Article 4(4) of the Habitats Directive.
[71] Article 6(2) of Decision No. 1600/2002/EC of the European Parliament and of the Council of 22 July 2002 laying down the Sixth Community Environment Action Programme.

and control measures.[72] The establishment of marine areas under Nature 2000 does not have to be so-called "no take zones". It should be zones regulated on the basis of sustainable use of resources in an environmental friendly way. For this reason they may require specific fishery management measures for the purpose of conservation of those species and habitats for which the site has been designated. Fisheries management measures in those areas should be decided in the context of the Common Fisheries Policy taking into account the principles of proportionality and non discrimination.

- **Regulation 2371/2002 on the conservation and sustainable exploitation of fisheries resources under the Common Fisheries Policy**

To ensure exploitation of living aquatic resources to provide sustainable economic, environmental and social conditions, Regulation 2371/2002 establishes measures designed to protect and conserve living aquatic resources, to provide for their sustainable exploitation and to minimise the impact of fishing activities on marine eco-systems. It moreover aims at a progressive implementation of an eco-system based approach to fisheries.[73] No explicit reference to marine protected areas is included in the regulation. However, depending on the conservation objectives of the marine SPAs and SCI (Natura 2000 sites), Member States may envisage the implementation of certain fisheries management and control measures. Different procedures apply depending on the jurisdiction in which the Natura 2000 site is located: within or outside the 12 nautical mile zone.

Within the 12 nautical mile zone, "Member States should be allowed to adopt conservation and management measures applicable to all fishing vessels, provided that, where such measures apply to fishing vessels from other Member States, the measures adopted are non-discriminatory and prior consultation has taken place, and that the Community has not adopted measures specifically addressing conservation and management within this area".[74] Member States can establish conservation and management measures in the 12 nautical miles zone, applying to their own fishing vessels. If such measures may affect vessels of other Member States, measures can only be adopted after consultation of other Member States and the Regional Advisory Council (RAC).[75] If the site is located outside the 12 nautical mile zone, it means that the (proposed) measures fall under the scope of the Community. Consequently, Member States have to address a formal request to the Commission (of DG MARE).

In relation to the legal framework for the Common Fisheries Policy, several measures have been taken with the aim of improvement of the conservation status of habitats and species in the marine environment, such as:[76]

- Regulation ((EC) 1185/2003) on shark finning, adopted by the Council in 2003. This regulation aims at the prevention catch of sharks for the sole purpose of trading the fins;

[72] Fisheries Measures for marine Natura 2000 sites. A consistent approach to request for fisheries management measures under the Common Fisheries Policy, p.2. See: http://ec.europa.eu/environment/nature/natura2000/marine/index_en.htm.
[73] Article 2(1) of Regulation 2371/2002.
[74] Para. 11 to Regulation 2371/2002.
[75] Article 9 of Regulation 2371/2002.
[76] Guidelines for the establishment of the Nature 2000 network in the marine environment. Application of the Habitat and Birds Directive, May 2007, p. 106.

- Regulations ((EC) 1475/2003 and 263/2004) on the protection of deep- water coral reefs from the effects of trawling in the Darwin Mounds (North West of Scotland). These measures were made permanent in 2004 (Council Regulation ((EC) 602/2004);
- Regulation No 812/2004, including compulsory use of acoustic deterrent devices in certain gear and setting up a Community observer programme designed to provide data on by-catch of cetaceans in fisheries;
- Council regulation (EC) No 1568/2005) on the protection of vulnerable habitats such as coral reefs, thermal vents and carbonate mounds from the effects of fishing around the Macaronesian Isles;
- Regulation ((EC) 1967/2006), including measures to protect sensitive habitats such as Posidonia beds and coral aggregations and to ban fishing practices that may damage the physical environment, such as the use of explosives and pneumatic hammers. It moreover includes new technical measures on fishing gear, protection zones and minimal sizes;
- Regulations (EC) No 894/97 on the regulation of the use of driftnets in Community fishing vessels;[77]
- Council Regulation (EC) No41/2006, including the implementation of fisheries restrictive areas to protect vulnerable deep sea habitats in the Mediterranean and in the North East Atlantic.

- **Recommendation 2002/413 on the implementation of ICZM in Europe**

Recommendation (2002/413) of May 2002 adopted by the Council and the Parliament on the implementation of integrated coastal zone management in Europe underlines the need for a strategic approach and certain principles that Member States should follow both in undertaking national integrated coastal zone management (ICZM) stocktaking and national ICZM strategies. These recommendations are not binding upon the Member States.

An important element in relation to MPAs is the 'protection of the coastal environment, based on an ecosystem approach preserving its integrity and functioning'.[78] In particular, coastal zone management should be based on a broad overall perspective; a long-term perspective; adaptive management; local specificity and the great diversity of European coastal Zones; the involvement of all the parties concerned; support and involvement of relevant administrative bodies at national, regional and local level; and the use of a combination of instruments designed to facilitate coherence between sectoral policy objectives and coherence between planning and management.[79]

The evaluation of the EU ICZM Recommendation, which was conducted by the Commission in 2006, concluded that more efforts need to be deployed to support the effective implementation of integrated coastal zone management. The adaptations to climate change and risks and management of the land-sea interface and marine areas have been identified as the priority themes for the further promotion of ICZM.[80] Moreover, in discussing the future EU Maritime Policy – of which the Marine Strategy Framework Directive constitutes the environmental pillar – it is considered that this offers a platform to further strengthen the coherence and synergies among the many EU policies and instruments that affect the coastal zones.[81] The Commission moreover underlined that while further support for the implementation of ICZM on-shore is

[77] As amended by Regulation (EC) No 1235/98, (EC) No 812/2004, (EC) No 2187/2005.
[78] Chapter I (A strategic approach), (a) of the Recommendation of the European Parliament and of the council of 30 May 2002 concerning the implementation of Integrated Coastal Zone Management in Europe (2002/413/EC).
[79] Chapter II (Principles of Recommendation) 2002/413/EC.
[80] (COM(2007)308, Communication from the Commission, Report to the European Parliament and the Council: An evaluation of Integrated Coastal Zone Management (ICZM) in Europe, p. 6.
[81] Ibid., p. 8.

necessary, more emphasis needs to be placed on cooperation at regional sea level, including coherence between plans, programmes and management covering the terrestrial and the sea parts of the coastal zones. It was expected that the Marine Strategy Directive (at that moment a proposal) and the related work of regional seas conventions should provide important instruments to take this forward.[82]

- **Directive 2000/60/EC (Water Framework Directive)**

The EU Water Framework Directive (WFD) establishes a framework to enhance the protection of inland surface waters, transitional waters, coastal waters and groundwater. In doing so, the WFD contributes to:[83]

- the protection of territorial and marine waters; and
- achieving the objectives of relevant international agreements, including those which aim to prevent and eliminate pollution of the marine environment, by Community action under Article 16(3) to cease or phase out discharges, emissions and losses of priority hazardous substances, with the ultimate aim of achieving concentrations in the marine environment near background values for naturally occurring substances and close to zero for man-made synthetic substances.

For the purpose if the WFD, coastal waters are defined as "surface water on the landward side of a line, every point of which is at a distance of one nautical mile on the seaward side from the nearest point of the baseline from which the breadth of territorial waters is measured, extending where appropriate up to the outer limit of transitional waters".[84]

Relevant for the protection of the marine environment are the general objectives of the WFD, which aim at the prevention of any further deterioration in status and to achieve "good status" of all waters by 2015. "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".[85]

[82] Ibid., p. 9.
[83] Article 1 to the Water Framework Directive.
[84] Article 2(7) to the Water Framework Directive.
[85] Article 2(18) to the Water Framewrok Directive.

5.3. *Legal gap analysis*

Despite the existing international and European legal framework on MPAs, it remains a challenge to incorporate this into national law and policy. This chapter will assess the Albanian legislation and identify the main gaps for the establishment of MPAs. As defined in a previous UNDP report on Protected Areas in Albania, a gap analysis is to be considered as an assessment of the extent to which a protected area system meets protection goals set by a nation or region to represent its biological diversity.[86] From that perspective, related legislation has been reviewed to assess its relevance or possible contribution to the establishment and management of MPAs. This main focus of this legal gap analysis will be on the assessment of the law on protected areas. The Albanian relevant laws include:

- Law No.8906 dated 6.6.2002 "On protected areas"
- Law No. 9868, dated 4.2.2008 "On some supplements and changes in Law No. 8906, dated 6.6.2002 "On protected areas""
- Law No. 7908, dated on 05.04.1995 "On fishery and aquaculture"
- Law No. 8870 dated on 21.03.2002 "On amendments to law No. 7908 dated 05.04.1995 for fishery and aquaculture"
- Law No. 9587 dated 20.07.2006 "On biodiversity protection"

5.3.1. Legislation on protected areas

The establishment and management of protected areas is regulated by Law No. 8906, dated 6.6.2002, "On protected areas" (hereinafter the "PA Law'). This law, which was amended in 2008, aims at the declaration, preservation, management and usage of protected areas and their natural and biological resources. In addition, the objectives, as formulated in Article 1, include "the facilitation of conditions for the development of environmental tourism, for the information and education of the general public and for economic profits, direct or indirect, by the local population, by the public [state] and private sector".[87] To achieve the purpose of the law – to provide special protection of important components of nature – the regulation of protected areas is based on six IUCN categories.[88] The IUCN categories as such can be characterised by their broad formulation; they can be further developed for application in all types of geographical space, such as terrestrial or marine areas.

[86] Kromidha, G. (2009), Protected Areas Gap Assessment and Protected Areas Development Project, UNDP Albania and GEF project, p. 10.

[87] In case of review of the Law on protected areas, the objectives should be subject to review. A further and more detailed level of the objectives can be included, such as for example in the 2007 Marine Parks Act of Australia.

[88] Article 2(3) of Law No. 8906, dated 6.6.2002 on protected areas. It can be noted that the IUCN uses seven categories. Category I of the IUCN is divided in IA and IB. IA contains a 'strict nature reserve/wilderness area (science/research)' which, as a protected area, is managed for scientific and research purposes. Category IB contains a 'strict nature reserve/wilderness area (protection) which, as a protected area, is managed for wilderness protection purposes. From the wording of Article 5 on 'strictly nature reserve' is can be concluded that this reflects IUCN Category IB.

By their nature, MPAs present particular management and protection challenges that may require a different approach as to protected areas in terrestrial environments. IUCN takes the view that marine sites should not be operated under a separate definition. The current definition of 'protected area' in the Albanian legislation suggests that protected areas can be declared in the marine areas:[89]

Protected areas are declared land, aquatic, marine and coastal territories determined for the protection of biological diversity, natural and cultural resources, associative, which are managed legally and by contemporary scientific methods.

This definition is not without ambiguity in terms of MPAs. The main issue of concern is the use of the term "territories", which normally applies to land. Even though the definition includes reference to "aquatic, marine and coastal", with the term "territories" it is not evident whether it applies only to the seabed, or whether this notion can also include the water column or surface.[90]

Article 3.1 of the PA Law and Article 3.1(a) of the Law "On Biodiversity Protection" do not specify whether the marine areas only cover the Territorial Sea or also cover the EEZ. Article 3(a) of the 1995 Law "On Fisheries and Aquaculture" stipulates that the law applies to the waters of Republic of Albania, which include "the territorial marine waters and any other marine area reserved exclusively for the Republic of Albania based on the law of international right, as well as rivers, lakes, lagoons, hydro-graphic habitats and other waters of the territory of Albania".[91]

Protected Area or Marine Protected Area?

The Albanian legislation does not include a separate definition on *marine protected area*; it is part of the definition of *protected area*. There is no internationally agreed definition on marine protected area; however all the definitions are built upon similar elements. The international definitions for marine protected area that are most commonly used are provided by the IUCN (1999):[92]

Any area of intertidal or subtidal terrain, together with its overlying water and associated flora, fauna, historical and cultural features, which has been reserved by law or other effective means to protect part or all of the enclosed environment

and the Convention on Biological Diversity:[93]

Any defined area within or adjacent to the marine environment, together with its overlying waters and associated flora, fauna and historical and cultural features, which has been reserved by legislation or other effective means, including custom, with the effect that its marine/ and or coastal biodiversity enjoys a higher level of protection than its surroundings.

[89] Article 3(1) of Law No. 8906, dated 6.6.2002 on protected areas.
[90] In the process of drafting the law on protected areas discussion has taken place on the use of the term 'territories' or other terms such as 'spaces'. This discussion should also be placed in context of language/translation, as according to Department of Protected Areas, the term territories includes more dimensions (such as seabed and the water column).
[91] Formulations are from the Compendium of Environmental Legislation of Albania, established by the Republic of Albania Ministry of Environment, March 2004.
[92] Adopted by Resolution 17.39 of the IUCN General Assembly (1988); reaffirmed in Resolution 19.46 (1994).
[93] Conference of the Parties (Convention on Biological Diversity), Decision VII/5.

At the 2006 FAO Workshop on Marine Protected Areas, the main differences between these definitions have been subject to discussion.[94] An issue that can be taken into account when negotiating a legal definition is the focus on 'terrain' in the IUCN definition, whereas the CBD places the term 'area within the marine environment' at the centre. The latter can apply on a water column (such as fisheries related zones), without necessarily including the seafloor. A second issue that was identified is that the CBD definition requires different levels of protection (using the words 'enjoys a higher level of protection than its surroundings'), whereas the IUCN definition uses a less dynamic terminology ('means to protect part or all'). It could even be argued that the CBD definition – explicitly providing for more levels of protection – finds a better connection with the IUCN Categories on which the Albanian law on protected areas is based.

In 2008, the IUCN redefined its definition on *protected areas*, taking into account the need to apply the definition on all types of protected areas:

A clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values.

The revised and overall definition of IUCN on *protected area* aims at superseding the 1999 specific *marine protected area* definition. It is underlined in the 2008 IUCN report that, although the new definition loses the specific reference to the marine environment, it does "ensure a clearer demarcation between conservation focused sites and those where the primary purpose is extractive uses i.e., fisheries management areas".[95] A further explanation of the revised PA definition has been provided by the IUCN:[96]

Phrase	Explanation (IUCN)
Clearly defined geographical space	Includes land, inland water, marine and coastal areas or a combination of two or more of these. "Space" has three dimensions, e.g., as when the airspace above a protected area is protected from low-flying aircraft or in marine protected areas when a certain water depth is protected or the seabed is protected but water above is not: conversely subsurface areas sometimes are *not* protected (e.g., are open for mining). "Clearly defined" implies a spatially defined area with agreed and demarcated borders. These borders can sometimes be defined by physical features that move over time (e.g., river banks) or by management actions (e.g., agreed no-take zones).
Recognised	Implies that protection can include a range of governance types declared by people as well as those identified by the state, but that such sites should be recognised in some way (in particular through listing on the World Database on Protected Areas – WDPA).
dedicated	Implies specific binding commitment to conservation in the long term, through e.g.: ● International conventions and agreements ● National, provincial and local law ● Customary law ● Covenants of NGOs ● Private trusts and company policies ● Certification schemes.
Managed	Assumes some active steps to conserve the natural (and possibly other) values for which the protected area was established; note that "managed" can include a decision to leave the area

[94] Young, T.R. (2006), *The legal framework for MPAs and success and failures in their incorporation into national legislation*, Background paper produced for the FAO Expert Workshop on Marine Protected Areas and Fisheries Management: Review of Issues and Considerations (12-14 June, 2006).
[95] Dudley, N. (ed.), (2008) IUCN, Guidelines for Applying Protected Area Management Categories, p. 56.
[96] Dudley, N. (ed.), (2008) IUCN, Guidelines for Applying Protected Area Management Categories, p. 8-9.

	untouched if this is the best conservation strategy.
Legal or other effective means	Means that protected areas must either be gazetted (that is, recognized under statutory civil law), recognized through an international convention or agreement, or else managed through other effective but non-gazetted means, such as through recognised traditional rules under which community conserved areas operate or the policies of established non-governmental organizations.
to achieve	Implies some level of effectiveness – a new element that was not present in the 1994 definition but which has been strongly requested by many protected area managers and others. Although the category will still be determined by objective, management effectiveness will progressively be recorded on the World Database on Protected Areas and over time will become an important contributory criterion in identification and recognition of protected areas.
Long-term	Protected areas should be managed in perpetuity and not as a short-term or temporary management strategy.
Conservation	In the context of this definition conservation refers to the *in-situ* maintenance of ecosystems and natural and semi-natural habitats and of viable populations of species in their natural surroundings and, in the case of domesticated or cultivated species (see definition of agrobiodiversity in the Appendix), in the surroundings where they have developed their distinctive properties.
Nature	In this context nature *always* refers to biodiversity, at genetic, species and ecosystem level, and often *also* refers to geodiversity, landform and broader natural values.
Associated ecosystem services	Means here ecosystem services that are related to but do not interfere with the aim of nature conservation. These can include provisioning services such as food and water; regulating services such as regulation of floods, drought, land degradation, and disease; supporting services such as soil formation and nutrient cycling; and cultural services such as recreational, spiritual, religious and other non-material benefits.
Cultural values	Includes those that do not interfere with the conservation outcome (*all* cultural values in a protected area should meet this criterion), including in particular: ● those that contribute to conservation outcomes (e.g., traditional management practices on which key species have become reliant); ● those that are themselves under threat.

Source: IUCN 2008.

Revision of the Albanian definition should be discussed, while taking into account that it is important for Albania to have the option to include waters/coast near the sea in one protected area. This requirement provides an argument in favour of using a broad PA definition that includes reference to all areas (including clear application on all marine spaces –such as the seabed and the water column).

Definition of categories and levels of protection

The 2002 Law "On Protected Areas" is based on the IUCN categories, covering a wide range of management tools with an overall objective of biodiversity protection. As a result of their broad formulations, the categories can apply to all types of geographical space and are commonly used for MPAs. Review of the 2002 Law on Protected Areas identifies a number of issues that should be subject to consideration when discussing the establishment of a marine protected area.

The Albanian law on protected areas includes IUCN six categories that describe 'territories' that are subject to certain levels of protection. In doing so, the law has not copied the exact wording of the IUCN guidelines. Both the description of the areas (included in the first paragraphs of Articles 5, 6, 7, 9, 10 and 11) and the related level of protection (described in the second paragraph of Articles 5, 6, 7, 9, 10 and the third paragraph of Article 11) have been written with a strong terrestrial focus. This mainly follows from the list of actions that are prohibited to safeguard certain levels of protection. For example, Article 5(2) defines the first level of protections prohibits activities as:

(a) Cutting of trees and bushes
(b) Utilization of chemicals and chemical fertilizers

(c) Construction of any kind
(ç) Mining of minerals and peat;
(d) Hunting and fishing;
(dh) Lights of fires
(e) Grazing, domestic animals' passage and construction of objects for their shelter;
(f) Establishment of recreational, amusement and sport complexes;
(g) Passage through paths except of the landlord or the person that uses the land;
(h) Circulation with vehicles of any kind with the exception of the vehicle of protection of the reservation administration and the fire brigade;
(gj) Sailing in boats, canoe and other means of sailing;
(i) Intensive reproduction of hunting animals.

The different types of activities that are now listed in the PA legislation (for all 6 categories of conservation) have no relevance for the regulation of marine protected areas. To (better) fit the inclusion of marine areas in the Albanian system of protected area law, a necessary step would be to ensure that the categories (and the related level of protection) apply to all types of protected areas (including terrestrial, marine or freshwater or brackish water systems). The current lists of prohibit activities have a strong terrestrial focus and can complicate the application of the law on marine protected areas.

Assuming that the Albanian government has a preference to maintain the IUCN categories as the basis of its legislation, it needs to reconsider the necessity of such lists. Some examples of the types of activity that might it might be appropriate to prohibit in an MPA (pursuant to, say, an amended Article 5.2) could be:

(*) to include discharge of any kind of effluents from land-based sources, or ballast waters or other ships' wastes;
(d) to include harvesting of any natural marine organisms by any means;
(gj) to include passage by shipping and mooring boats;
(h) to include mariculture et seq. for other types of protected area.

As the lists that are currently used in the PA law are not exhaustive, it might be also be an option to describe in addition the level of protection and the prohibited actions in a more general way – thereby building upon the IUCN management objectives. For the purpose of *protected area managed for science*, these objectives include:

- to preserve habitats, ecosystems and species in as undisturbed a state as possible;
- to maintain genetic resources in a dynamic and evolutionary state;
- to maintain established ecological processes;
- to safeguard structural landscape features or rock exposures;
- to limit public access.

On the other hand the objectives for a protected area mainly for wilderness protection include:

- to ensure that future generations have the opportunity to experience understanding and enjoyment of areas that have been largely undisturbed by human action over a long period of time;
- to maintain the essential natural attributed and qualities of the environment over the long term;
- to provide for public access at the levels and of a type which will serve best the physical and spiritual well-being of visitors and maintain the wilderness qualities of the area for present and future generations.

The advantage of such reformulation is twofold. In the first place it can be applicable on all types of geographical spaces (including protected areas combining different spaces). Secondly, the uses of more general formulations on the objectives (and prohibitions) can increase the scope of protection (which is now limited to the listed actions). This also provides the possibility to adapt the law to the specific purposes on protection of marine areas.

Further guidance on the specific application of the IUCN categories on marine protected areas have been defined by Dudley in the 2008 IUCN Guidelines:

Tab. 13: Application of categories in marine protected areas

IUCN Category	Notes relating to use in MPAs
Ia	The objective in these MPAs is preservation of the biodiversity and other values in a strictly protected area. No-take areas/marine reserves are the specific type of MPA that achieves this outcome. They have become an important tool for both marine biodiversity protection and fisheries management (Palumbi 2001; Roberts and Hawkins 2000). They may comprise a whole MPA or frequently be a separate zone within a multiple-use MPA. *Any* removal of marine species and modification, extraction or collection of marine resources (e.g., through fishing, harvesting, dredging, mining or drilling) is not compatible with this category, with exceptions such as scientific research. Human visitation is limited, to ensure preservation of the conservation values. Setting aside strictly protected areas in the marine environment is of fundamental importance, particularly to protect fish breeding and spawning areas and to provide scientific baseline areas that are as undisturbed as possible. However such areas are extremely difficult to delineate (the use of buoys can act as fish-aggregating devices, nullifying the value of the area as undisturbed) and hence difficult to enforce. Whenever considering possible category Ia areas, the uses of the surrounding waters and particularly "up-current" influences and aspects of marine connectivity, should be part of the assessment criteria. Category Ia areas should usually be seen as "cores" surrounded by other suitably protected areas (i.e., the area surrounding the category Ia area should also be protected in such a way that complements and ensures the protection of the biodiversity of the core category Ia area).
Ib	Category Ib areas in the marine environment should be sites of relatively undisturbed seascape, significantly free of human disturbance, works or facilities and capable of remaining so through effective management. The issue of "wilderness" in the marine environment is less clear than for terrestrial protected areas. Provided such areas are relatively undisturbed and free from human influences, such qualities as "solitude", "quiet appreciation" or "experiencing natural areas that retain wilderness qualities" can be readily achieved by diving beneath the surface. The issue of motorized access is not such a critical factor as in terrestrial wilderness areas given the huge expanse of oceans and the fact that many such areas would not otherwise be accessible; more important, however, is minimizing the density of use to ensure the "wilderness feeling" is maintained in areas considered appropriate for category Ib designation. For example, fixed mooring points may be one way to manage density and limit seabed impacts whilst providing access.
II	Category II areas present a particular challenge in the marine environment, as they are managed for "ecosystem protection", with provision for visitation, recreational activities and nature tourism. In marine environments, extractive use (of living or dead material) as a key activity is generally not consistent with the objectives of category II areas. This is because many human activities even undertaken at low levels (such as fishing) are now recognised as causing ecological draw-down on resources, and are therefore now seen as incompatible with effective ecosystem protection. Where such uses cannot be actively managed in a category II area to ensure the overall objectives of ecosystem protection are met, consideration may need to be given to whether any take should be permitted at all, or whether the objectives for the reserve, or zone within the reserve, more realistically align with another category (e.g., category V or VI) and should be changed. The conservation of nature in category II areas in the marine

	environment should be achievable through protection and not require substantial active management or habitat manipulation.
III	The protection of natural monuments or features within marine environments can serve a variety of aims. Localized protection of features such as seamounts has an important conservation value, while other marine features may have cultural or recreational value to particular groups, including flooded historical/archaeological landscapes. Category III is likely to be a relatively uncommon designation in marine ecosystems.
IV	Category IV areas in marine environments should play an important role in the protection of nature and the survival of species (incorporating, as appropriate, breeding areas, spawning areas, feeding/foraging areas) or other features essential to the well-being of nationally or locally important flora, or to resident or migratory fauna. Category IV is aimed at protection of particular species or habitats, often with active management intervention (e.g., protection of key benthic habitats from trawling or dredging). Protection regimes aimed at particular species or groups, where other activities are not curtailed, would often be classified as category IV, e.g., whale sanctuaries. Time-limited protection, as in the case of seasonal fishing bans or protection of turtle nesting beaches during the breeding season, might also qualify as category IV. Unlike on land where category IV may include fragments of ecosystems, in the marine environment, use of this category has a significant opportunity for broader-scale ecosystem protection, most frequently encompassing patches of category Ia or b and category II interest.
V	The interpretation of the seascape concept in protected areas is attracting increasing interest. Category V protected areas stress the importance of the "interaction of people and nature over time" and in a marine situation, Category V might most typically be expected to occur in coastal areas. The preservation of long-term and sustainable local fishing practices or sustainable coral reef harvesting, perhaps in the presence of culturally-modified coastal habitats (e.g., through planting coconut palms) could be a suitable management mosaic to qualify as category V.
VI	MPAs that maintain predominantly natural habitats but allow the sustainable collection of particular elements, such as particular food species or small amounts of coral or shells for the tourist trade, could be identified as category VI. The point where an area managed for resource extraction becomes a category VI marine protected area may sometimes be hard to judge and will be determined ultimately by reference to whether the area meets the overall definition of a protected area or not, as well as whether the area achieves verifiable ecological sustainability as measured by appropriate metrics.

Source: IUCN 2008

The definition of categories and the established level of protection also need to fit transnational or regional marine protected areas. This would require Article 26 of the PA law (on network of protected areas) to include provisions for cross-border MPAs to regulate conservation and the joint management of straddling and or migratory fishery resources. This provision can be established in relation to Article 18 of Fisheries Law which enhances the Albanian Government to enter into agreements with governments of other countries of international organisations in the field of fishing.

Zoning within the MPA

Although the primary purpose of management will determine the category to which an area is assigned, management plans will often contain different management zones. This increases the flexibility of the protected area as it can be adapted to local conditions.

The 2008 amendment to the PA Law introduces the principle of internal zoning. According to Article 4/2 of the amendment, the territory of the protected area can divided into subzones, according to the importance of habitats and ecosystems which are part of. The purpose of zoning becomes clear from the second paragraph of Article 4/2, stipulating that internal zoning "may contain central area, recreation area, the area of traditional use, the area of sustainable

development and other subzones which fit to the territory". Here, zoning can be used as an important management tool to establish MPAs that can provide multiple benefits, such as combining fisheries management with nature conservation or sustainable tourism.

It is argued that to establish the appropriate category of protection, at least 75% and preferably more of the area is recommended to be managed for the primary purpose. In addition, the management of the remaining areas should not be in conflict with that primary purpose.[97] This is referred to by the IUCN as the 75-percent rule. An example mentioned is an area (less then 25% of the total area) where fishing is permitted within what is otherwise a strictly protected marine or freshwater protected area.[98] No such indications or minimum requirements have been included in the PA Law.

In addition to the use of 'functional zones' (such as recreation or traditional use), paragraph 3 further sets out the 'protection zones'. The law formulates that the zoning shall be adjusted to the scale of protection required for the specifics of the sub zoning, while taking into account the nature of the area, types of human activities taking place in and their impact on nature. In this context, zoning can be used as a management tool to identify the level (or the different levels) of protection within the protected areas. Inclusion of examples, such as the MPA legislation in the United States, might be interesting as it provides an approach which is straightforward in describing MPAs in purely functional terms for both agencies and stakeholders.

Tab. 14: Level of protection in Marine Protected Areas classification System

Level of protection	Description	Example (U.S.)
Uniform Multiple-Use	MPAs or zones with a consistent level of protection and allowable activities, including certain extractive uses, across the entire protected area.	Uniform multiple-use MPAs are among the most common types in the U.S., and include many sanctuaries, national and state parks, and cultural resource MPAs.
Zoned Multiple-Use	MPAs that allow some extractive activities throughout the entire site, but that use marine zoning to allocate specific uses to compatible places or times in order to reduce user conflicts and adverse impacts.	Zoned multiple-use MPAs are increasingly common in U.S. waters, including some marine sanctuaries, national parks, national wildlife refuges, and state MPAs.
Zoned Multiple-Use With No-Take Area(s)	Multiple-use MPAs that contain at least one legally established management zone in which all resource extraction is prohibited.	Zoned no-take MPAs are emerging gradually in U.S. waters, primarily in some national marine sanctuaries and national parks.
No-Take	MPAs or zones that allow human access and even some potentially harmful uses, but that totally prohibit the extraction or significant destruction of natural or cultural resources.	No-take MPAs are relatively rare in the U.S., occurring mainly in state MPAs, in some federal areas closed for either fisheries management or the protection of endangered species, or as small special use (research) zones within larger multipleuse MPAs. Other commonly used terms to connote no-take MPAs include marine reserves or ecological reserves.

[97] Guidelines for protected area management categories, interpretation and application of the protected area management categories in Europe, IUCN, EUROPARC and WCMC (2000), p.16.
[98] Dudley, N (2008) IUCN Report, p. 35.

No Impact	MPAs or zones that allow human access, but that prohibit all activities that could harm the site's resources or disrupt the ecological or cultural services they provide. Examples of activities typically prohibited in no-impact MPAs include resource extraction of any kind (fishing, collecting, or mining); discharge of pollutants; disposal or installation of materials; and alteration or disturbance of submerged cultural resources, biological assemblages, ecological interactions, physiochemical environmental features, protected habitats, or the natural processes that support them.	No- impact MPAs are rare in U.S. waters, occurring mainly as small isolated MPAs or in small research-only zones within larger multiple-use MPAs. Other commonly used terms include fully protected marine (or ecological) reserves.
No Access	MPAs or zones that restrict all human access to the area in order to prevent potential ecological disturbance, unless specifically permitted for designated special uses such as research, monitoring or restoration.	No-access MPAs are extremely rare in the U.S., occurring mainly as small research-only zones within larger multiple-use MPAs. Other commonly used terms for no access MPAs include wilderness areas or marine preserves.

Source: U.S. Marine Protected Areas / www.mpa.gov

The level of protection such as described in the table above can (with some changes) be formulated as to apply in all types of 'geographical space' and can be linked to IUCN categories.

Article 4/2(4) of the 2008 Amendment to the Law on Protected Areas refers to the "degree of protection" that shall be established by the decision of the Council of Ministers. The identification of the different levels of protection can moderate this task, while providing a high level of uniformity in the system of protected areas.

MPA and Specially protected areas

In addition to the introduction of zoning, the 2008 Amendment mainly places its orientation on Directive 92/43/EEC on the conservation of natural habitats and wild life fauna and flora. It adds several definitions which find their origin on the 92/43/EEC Directive (and 79/409/EEC) to the law and further elaborates on the *special protected areas*.[99] It should be underlined that the definitions included in the Habitats Directive are divided amongst the 2008 amendment of the law on protected areas and the 2006 law on biological diversity (to be discussed below). Relevant for the regime on protected area is the inclusion of the definition of special protected area, which are:[100]

are important areas for the European community, such as determined by the Republic of Albania with a normative act, administrative or contractual, which defines the necessary measures for maintaining or restoring in a favorable status the natural habitats or populations of species, for which the area is stipulated.

[99] It should be noted that the 2008 amendment to the PA law uses the term 'special protected area' which is central in the Birds Directive, whereas the definition of this term closely resembles the definition of 'special areas of protection', which is central in the Habitats Directive.

[100] Article1.29 of the 2008 Amendment of the Law on protected areas.

This provision corresponds to the definition of special area of conservation, as set out in Article 1(l) of the Habitats Directive (consolidated version).[101] In the Habitats Directive, selection and delimitation of sites under the Birds and Habitats Directives (Natura 2000) needs to be established on the basis of ecological and/or scientific criteria.[102] The law on protected areas includes a list, requiring that for the declaration of a protected area, the territory must fulfil at least one of the listed criteria:[103]

a) to have high species and / or habitats diversity;
b) […]
c) to have representativeness;
d) to have at least the minimum of the size of the ecosystem;
e) to have naturalism, heritage and integrity;
f) to have scientific value;
g) to [have] ecologically sensitive /vulnerable species
h) to be characterized by distinctiveness / endemic species;
i) not to be compromised by the interference of human activities;
j) to have the opportunity for the conservation of wild life

In doing so, the Albanian legislation provides a list of ecological/scientific criteria that is mentioned in the Directive. The list included in Annex III, Stage I to the Habitats Directive (establishing the criteria for selecting sites eligible for identification as sites of Community importance and designation as special areas of conservations)[104] has been included in Article 4/3 of the 2008 Amendment of the Law on protected areas. This Article that regulates the stipulation of the specially protected areas uses the criteria of Annex III for evaluation of the area for certain types of natural habitats and for species.

Article 4/4 of the 2008 Amendment of the law on protected areas, which is based on Article 6 of the Habitats Directive, deals with the management of the specially protected areas. Article 6.2 of the Habitats Directive includes the obligation to Member States:

to take appropriate steps to avoid, in the special areas of conservation, the deterioration of natural habitats and the habitats of species as well as disturbance of the species for which the areas have been designated, in so far as such disturbance could be significant in relation to the objectives of this Directive.

In answering to this obligation, the Albanian legislation requires the use of an environmental permit:[105]
To avoid destruction of natural habitats and the habitats of the species in areas of special

[101] Article 1(l) of the Habitats Directive formulates that *special area of conservation* "means a site of Community importance designated by the Member States through a statutory, administrative and/or contractual act where the necessary conservation measures are applied for the maintenance or restoration, at a favourable conservation status, of the natural habitats and/or the populations of the species for which the site is designated".
[102] See Article 4 of the Habitats and Birds Directives (unofficial translation).
[103] Article 4/1 of the 2008 Amendment to the law on protected areas.
[104] See the 2007 Commission's "Guidelines for the establishment of the Natura 2000 network in the marine environment. Application of the Habitats and Birds Directives" for the application of the criteria in the marine environment.
[105] Article 4/4(2) of the 2008 Amendment to the law on protected areas.

conservation, and disturbances of the species for which these areas are defined, the ministry responsible for environment requires form natural or judicial persons, whose activity adversely affects in the area, to implement the requirements specified in the environmental permit.

The limits to the environmental permits should be an issue for further critical review: in case national law is not specific about standards for environmental permits this might create possibilities where conflicting activities are included.

Stakeholder involvement

The establishment of MPAs involves another issue which is public participation. It is increasingly acknowledged that the success and sustainability of protected areas relates directly to collaboration with stakeholders. Stakeholders form a broad group of people or agencies that are interested in, impact on or are influenced by (the level of protection established in) a protected area. The IUCN underlines in that "the identification of zones in MPAs should be based on the best available science and judgement, and also should be developed following consultation with relevant stakeholders".[106]

A participative approach can be found in the 2002 Law on Protected Areas. Article 13(1) formulates that a declaration of a protected area shall be made "upon receipt of opinion from local government organs, specialised institutions, non-profit organisations and from private owners in case their estate is includes in the protected area". In addition, it is required that the proposal declaring the protected area includes "the results of consultation process with civil society stakeholders, in particular the approval by the local municipality within and around the proposed area, including received comments and reflection into the proposal".[107]

These provisions reflect a focus on community involvement in protected area governance. A recent gap analysis report on the Fiji Islands underlines the importance for good governance of the identification, designation, management and enforcement to be undertaken in partnership with local communities.[108] In addition, it warns that the stakeholder involvement should not be 'limited' to local communities, but equally include the relevant agencies: "tensions between environmental, developmental and fisheries management agencies are counterproductive and therefore designation, and in particular management of MPAs, must be integrated with other economic and social considerations".[109] The managing 'agency' in the protected area system is the Ministry of Environment; consisting of departments involving fisheries and forestry. Although this process should not necessarily be included in the legislation, a protocol that lays down the involvement if the relevant agencies is generally recommended.

Enforcement

The issue of enforcement – sanctions in the case of violations – is minimally addressed in the current PA law. Article 32 that stipulates that violations of the provisions of this law, when they do not constitute a criminal offence, constitute an administrative contravention. The law does not stipulate who is responsible for its enforcement. For the enforcement of the MPA regulation, the

[106] Dudley, N. (ed.), (2008) IUCN, Guidelines for Applying Protected Area Management Categories, p. 57.
[107] Article 14(1)(b) of Law No. 8906, dated 6.6.2002 on protected areas.
[108] Marine Protected Areas Policy and Legislation Gap Analysis: Fiji Islands, IUCN 2009, p. 16.
[109] Marine Protected Areas Policy and Legislation Gap Analysis: Fiji Islands, IUCN 2009, p. 17.

law should not only include environmental inspectorates, but also the fisheries inspectorates and the Coastal Guard.

Monitoring of Protected Areas

The task of monitoring of the protected area is laid down in Article 20 of the PA law. This Article stipulates that the "Ministry of Environment shall formulate objectives of monitoring of protected areas, direct their organization and realization and elaborate and publish monitoring results". The formulation of this crucial article is too vague. In the process of review of the protected area legislation, amendment should provide for more specific information on the procedures for monitoring. For example, amendment of the article could include that the "Ministry of Environment shall formulate objectives of monitoring of protected areas, *including appropriate indicators with special regard for achieving the objectives of the management plan and adequate management effectiveness*; direct their organization and realization; and elaborate and publish monitoring results".

5.3.2. Fisheries legislation

The management of marine protected areas can be complemented by existing legislation regulating fisheries activities. The main legislation currently in force on the management of fisheries are 'Law No. 7908, dated on 05.04.1995 on fishery and aquaculture' and 'Law No. 8870 dated on 21.03.2002 on amendments to law No. 7908 dated 05.04.1995 for fishery and aquaculture'. When considering the establishment of a MPA, the law on fisheries management should be carefully taken into account. Of direct relevance of the protection of the marine environment is the description Part of (part of) the tasks of the Directorate of fisheries policies as 'to determine periods of biological cessation, to determine the forbidden fishing zones, the technical restrictions for ships and fishing tools in order to establish a legal fishing and to protect the environment'.

One of the overarching objectives of the Albanian fisheries legislation is to 'provide protective conservation measures in order to ensure the protection of biological water resources' as well as to 'support the sustainable development of fishery and aquaculture sectors, as well as create better social-economical conditions for producers'.[110] Law No. 7908, dated on 05.04.1995 on fishery and aquaculture contains several connecting factors to marine protected areas:

Fisheries licences

Article 16 of the law lays down criteria on the conditions and the duration of professional fishing licenses, including "the area where the activity will be performed; fishing equipment; the presentation on information and statistical data; and the obligation to allow observers on board". In addition, a legal basis for the establishment of measures to regulate fisheries (gear restrictions, seasonal restrictions etc) can be found in Article 24(1)(a) of the 1995 Law on Fisheries Management. These criteria can form important management tools in regulation of fisheries activities in protected zones. Fishing is prohibited:

[110] Article 2(c) and (ç) of Law No. 7908, dated on 05.04.1995 on fishery and aquaculture.

- In areas and periods of time prohibited with by-laws for application of this law;
- With sailing means, fixed or movable equipments prohibited with by-laws for application of this law;
- Water organisms of prohibited species with by-laws for application of this law aiming at their protection or for other motives;
- Water organisms of a size prohibited with by-laws for application of this law;
- In greater quantities than those determined as the maximal quantity with by-laws for application of this law;
- Fish eggs, larva, offspring of any water organism species without necessary authorization or license based on by-laws for application of this law;

These criteria can reflect the management regime of protected areas in two manners. In the first place the criteria in the licences adhere to the regime of protection. The protection regimes are established in relation the IUCN categories used in the 2002 law on protected areas. These can be reduced to three main regimes, which are permanent; conditional; or temporary:

Protection regime	**Description**	**Examples (U.S.)**
Permanent:	MPAs or zones whose legal authorities provide some level of protection to the site in perpetuity for future generations, unless reversed by unanticipated future legislation or regulatory actions.	Permanent MPAs include most national marine sanctuaries and all national parks.
Conditional	MPAs or zones that have the potential, and often the expectation, to persist administratively over time, but whose legal authority has a finite duration and must be actively renewed or ratified based on periodic governmental reviews of performance.	Conditional MPAs include some national marine sanctuaries with 'sunset clauses' applying to portions of the MPA in state waters.
Temporary	MPAs that are designed to address relatively short-term conservation and/or management needs by protecting a specific habitat or species for a finite duration, with no expectation or specific mechanism for renewal.	Temporary MPAs include some fisheries closures focusing on rapidly recovering species (e.g. scallops).

Source: U.S. Marine Protected Areas / www.mpa.gov

A second manner in which the criteria in fishing license can adhere to the management regime of the protected area is through the classification of measures that reflect the constancy of the protection:

Constancy of protection	**Description**	**Examples**
Year-Round	MPAs or zones that provide constant protection to the site throughout the year.	Year-round MPAs include all marine sanctuaries, national parks, refuges, monuments, and some fisheries sites.
Seasonal:	MPAs or zones that protect specific habitats and resources, but only during fixed seasons or periods when human uses may disrupt ecologically sensitive seasonal processes such as spawning, breeding, or feeding aggregations.	Seasonal MPAs include some fisheries and endangered species closures around sensitive habitats.
Rotating:	MPAs that cycle serially and predictably among a set of fixed geographic areas in order to meet short-term conservation or management goals (such as local stock replenishment followed by renewed exploitation of recovered populations).	Rotating MPAs are still rare in the U.S. They include some dynamic fisheries closures created for the purpose of serially recovering a suite of localized population to harvestable levels.

Source: U.S. Marine Protected Areas / www.mpa.gov

Minimum protection measures

The 1995 fisheries legislation establishes a minimum level of protection which applies throughout all Albanian waters, including all types of marine protected areas. These measures include that "fishing of corals and sponges shall be prohibited".[111] Article 24(1)(b) formulates a general prohibition of "the use of explosive matters, of chemical or poisoning matters, of electrical energy capable of stun, paralyze or kill water organism, as well as during the aquatic life activity".[112] Relating to the quality of water, Article 24(1)(d) prohibits "to change the quality and direction of water in such manner that they cause damage to the habitat or water organisms or to the aquatic life plants except in cases authorized by law". The amendment to the 1995 fisheries law moreover prohibits sport fishing in protected marine zones.[113]

The fisheries law moreover sets out the minimum requirements that apply to aquaculture. According to Article 27(1), the activity of aquaculture is subject to a licence. This licence shall only be issued when "implementation of the project does not cause negative effects to the environment". From Article 27(3) it follows that the effect on the environment are at least based on an "environmental inconformity assessment". In the case where a licence is issued or renewed, the Ministry may impose conditions in relation to conditions, such as the on use of chemical substances; control of water quality; signalling of diseases and keeping registers of information.[114]

Management of lagoons or other areas

The 1995 fisheries legislation provides the Ministry of Environment with the ability to "sign agreements with public and private subjects for the management of lagoons or other areas of water…aiming at the preservation of ecological equilibrium and rational utilisation of fish resources of these areas".[115] This can overlap with the protection provided on the basis of the Law on Protected Areas. However, as the latter includes better guarantees for the participation of stakeholders and provides a more options to define the a tailored made protection regime, it can be assumed that the 2002 Law on protected areas shall be used to regulate the protection of lagoons and other areas. According to the Fisheries Directorate, there are several measures that apply in lagoons (such as seasonal fishing).

In addition, the 2002 amendment creates *co-management zones*. These are fishing zones "designated in accordance with Article 31/14 of this present law, in which at least one organisation of fishing management participates in the management of fishing resources".[116]

[111] Article 22 of Law No. 7908, dated on 05.04.1995 on fishery and aquaculture.
[112] Article 39(B) of Law No. 7908, dated on 05.04.1995 on fishery and aquaculture adds that "the use of explosives, chemical or poisoning matters, electrical energy capable of stun, paralyse or kill fish and other water organisms…shall be condemned in accordance with provisions of the Criminal Code".
[113] Article 6 of the Law No. 8870 dated 21.03.2002 on some addition and changes to law no. 7908 dated 5.04.1995 on fishing and aquaculture (with reference to Article 23 of the 1995 Fisheries law).
[114] Article 28(1) of the 1995 Fisheries law.
[115] Article 31(1) of Law No. 7908, dated on 05.04.1995 on fishery and aquaculture.
[116] Article 2 of the Law No. 8870 dated 21.03.2002 on some addition and changes to law no. 7908 dated 5.04.1995 on fishing and aquaculture.

Chapter VII/III of the 2002 Amendment lays down the regulation of co-management of fishing:[117]

Upon written request by the organisation, the Minister may designate a co-management zone any given geographical space in the waters of the republic of Albania. The co-management zone may be available for any kind of fishing activity or only for fishing activities that exploit specific techniques or fishing instruments and or certain periods of the year.

The fisheries management organisations that are involved in a co-management zone, can participate in the preparation and the implementation of the co-management zone's plan.[118]

When linking the fisheries co-management organisations to the MPAs, it should however be taken into account that fisheries and conservation interests have followed separate paths towards the establishment of 'protection zones', with fisheries production remaining the primary objective of fishermen. The Albanian Government should aim at a win-win situation when it includes the co-management organisation in the process of MPA management.

Co-management of fisheries communities

The 2002 amendment to the 1995 fisheries law adds to the objective of the law the involvement of "communities of fishermen in the decision-making process by instituting co-management of the fishing resources in the sectors of fishing and aquaculture".[119] In this context, it introduces the Organisation for Fishing Management.[120] The establishment of these organisations can be relevant for the management of marine protected areas; they present organised groups of stakeholders which have their organisational infrastructures in place.

Monitoring and control

For the purpose of the monitoring of the marine protected areas, the management organisations can make use of Article 25 (and also 16(1)(c)(d)) of the fisheries law. They oblige both professional and sports fishermen to submit statistical data on fish stocks and use of equipment.

Moreover, Article 35 of the 1995 fisheries legislation establishes that the Ministry shall co-ordinate the activity of control organs on fishing and aquatic life. In addition, the fishing inspectorate is established as the responsible body and competent organ for the control and application of Albania's fisheries legislation (including by-laws).

Article 37 of the 1995 fisheries law formulates the duties and rights of fishing inspectors in cases of "violations of this law". It can be subject to discussion to reformulate these rights, such as to

[117] Article 31/14(1) of the Law No. 8870 dated 21.03.2002 on some addition and changes to law no. 7908 dated 5.04.1995 on fishing and aquaculture

[118] Ibid., Article 31/14(2).

[119] Article 1 of the Law No. 8870 dated 21.03.2002 on some addition and changes to law no. 7908 dated 5.04.1995 on fishing and aquaculture.

[120] Article 2 of the Law No. 8870 dated 21.03.2002 on some addition and changes to law no. 7908 dated 5.04.1995 on fishing and aquaculture. This organisation is created "in accordance with Article 26 of the Civil Code of the Republic of Albania and Article 31/1 of the same law".

add the right to stop a person violating regulations of a protected area. Similarly, powers laid down in Article 38 can be specifically linked to protected area management.

5.3.3. Protection of biological diversity

Finally, Law No. 9587, dated 20.7.2006 on biodiversity protection is relevant for the establishment of marine protected areas. The overall objective on the law on biodiversity protection is "to ensure the protection and the preservation of biological diversity" and to "regulate the sustainable use of the biological diversity components, through the integration of the key elements of biodiversity in strategies, plans, programs and in decision making at all levels".[121] The scope of the law on biodiversity includes aquatic and marine areas.[122] This follows from the scope, as laid down in Article 3.1, as well as from the definition of biological diversity, which means the "diversity of living organisms of all kinds, including, inter alia, terrestrial ecosystems, *marine and other aquatic ecosystems* and ecological complexes, where those are part. This term includes the diversity within and between species and ecosystems diversity".[123] It should however be noted that the definition of wetlands (Article 2(11) of the Law on Biodiversity Protection) follows the Ramsar Convention in including marine waters, to the depth of which at low tide does not exceed six metres.

As underlined before, the definitions included in the Albanian law on biological diversity, are based on the Habitats Directive and have been transposed by both this law and the 2008 amendment on protected areas. Several key definitions – such as conservation; natural habitats; natural habitat types; priority types of natural habitats; habitat of species; priority species; area ("site"); area ("site") of interests for the European Community; and the special protected area – are included in the 2008 amendment; the rest of the definitions can be found in the 2006 law of biological diversity.[124]

The law includes a high number of definitions (based on the Habitats Directive and others definitions) that can be relevant for the overall purpose as well as specific protection regimes in marine protected areas. For the formulation of overall purpose of the marine protected area (or certain zones) cross-reference can made to the definitions of sustainable development and sustainable use.[125] Sustainable use is defined as "the use of the biodiversity component in a way and a pace that does not result in long-term reduction of biodiversity, and maintain its potential to meet the needs and aspirations of the present and future generations".[126]

[121] Article 1 of the Law No. 9587, dated 20.7.2006 on Biodiversity Protection.
[122] Article 3, defining the scope of the law of biodiversity, refers to " aquatic and marine areas" without further specifications.
[123] Article 2.1 of the Law No. 9587, dated 20.7.2006 on Biodiversity Protection.
[124] See section the law of protected areas above.
[125] Article 2.37 defines sustainable development as having the meaning given in section 25 of article 3 of law no.8934, dated 5.9.2002 "On environmental protection".
[126] Article 2.24 of Law No. 9587, dated 20.7.2006 on Biodiversity Protection.

The law on biodiversity protection defines "ecosystem" and "habitat" which are the key components on which a marine protected area is build.[127] After identification of fragile and rare ecosystems and habitats in Albanian waters, the MPAs regime should provide a level of protection that allows its habitats and ecosystems to remain at a healthy state or recover from depletion. A management tool to achieve this is "in-situ protection"; a management measure that aims "to preserve ecosystems and habitats to maintain or restore populations of species that can live in their habitats".

Relevant measures for measurement for the status of protection and conservation can also be found in Article 2 of the law. Based on the Habitats Directive,[128] the Albanian legislation refers to "status of preservation of an ecosystem, habitat or landscape" and "protection status of a type/species". The Albanian legislation defines them as: [129]

28. "Status of preservation of an ecosystem, habitat or landscape" is set of influences that operate in an ecosystem, habitat or landscape and typical species that may affect the distribution, structure, natural functions and the long-term survival of typical species.
29. "Protection status of a type/specie" is the set of influences that operate in the types of interest that may affect the distribution and long-term influx of their populations.

Articles 1.30 and 1.31 elaborate on when the status is considered favourable.[130]

The biodiversity law moreover foresees in terms and/or tools that can be used to prohibit or limit certain uses of the protected area. "Use" as such is defined as the shooting, killing, injury, capture, collection, harvest, eradication, uproots, cutting, destruction, processing, embalmment /mummification, transport, consumption, sale or removal of a species, of its life forms, its parts or derivatives, as well as attempts to engage in these actions.[131] In addition, cross-reference can be made to the probation of "deliberate introduction" of other organisms in a certain area.

[127] Article 1.5 described the "ecosystem" as a dynamic complex, composed of plants, animals and microorganisms committees , as well as non-living environment, which interact among themselves as a functional unit, whereas Article 1.7 defines "habitat" as the environment of some individuals, plant or animal, of the populations or of their communities.
[128] Article 1(e) of Directive 92/43/EEC (consolidated version) defines the "conservation status of a natural habitat" and identifies when the conservation status of a natural habitat will be taken as favourable. Similarly, Article 1(f) defines the conservation status of a species, while adding when this conservation status will be taken as favourable.
[129] Articles 1.28 and 1.29 of Law No. 9587, dated 20.7.2006 on Biodiversity Protection.
[130] It should be noted that the Albanian legislation uses other terms; such as type (lloj)
[131] Article 1.33 of Law No. 9587, dated 20.7.2006 on Biodiversity Protection.

Planning instruments of biodiversity protection

The law provides for the protection of biodiversity through the adoption of planning instruments: The national Strategy plan, which should be adopted every 10 years, and the action plan for biodiversity. A network of inventory and monitoring is established through this law. Article 10 on 'emergency planning' focuses on the situations of unforeseen or unexpected harm to the environment that can form a threat to biodiversity. An action plan that foresees disasters that specifically would relate to marine areas – such as oil spills at sea or waste from land – would be complementary to a MPA system.

Preservation of ecosystems, habitats and landscapes

Chapter IV of the law on biological diversity regulates the preservation of ecosystems, habitats and landscapes, placed outside of the protected areas network. According to Article 12.1 of the law "ecosystems, habitats and landscapes are preserved even when are located outside the representative network of the protected areas, public or private property". This means that all areas defined as *ecosystem*, *habitat* and/or *landscape* (see Articles 1.5; 1.7 and 1.21 of the law), is assigned a minimum level of protection.

Protective measures for land, water and marine species

In case the protected species are listed after approval of the Council of Ministers includes marine species, Article 20 provides a legal basis for additional MPA management measures. This Article finds its basis in Article 14 of the Habitats Directive. Most of these measures provide overlap with measures that can be taken under other relevant laws, such as the law of protected areas and the fisheries legislation. The measures that see on the "adjustments related to the access to certain properties"; and the "regulating the purchase, sale, offer for sale, keeping for sale or transport for sale of types" can provide possibilities that further broaden the scope of the MPA regulation.[132]

Articles 22 and 23 regulate the identification and the status for the protection of specially protected species. Data gathered from the biodiversity strategy plan, the action plan, the inventory and monitoring network of biological diversity, as well as by the other possible sources shall be at the basis of the identification of 'specially protected species'.[133] One of the criteria listed for the inclusion of species in the register (developed by the ministry) is lack of or insufficient data.[134] This category applies on a fair share of marine species and accordingly this instrument can be of complementary use for registration and mapping purposes. Regarding the 'status' of the specially protected species, the law of biodiversity builds upon Articles 12 and 13 of the Habitats Directive, in establishing its protection regime:

[132] Article 20.3 (a) and (f) of the 2006 Law of biological diversity.
[133] Article 22.2 of the 2006 Law of biological diversity
[134] According to Article 22.3(c) refers to "species for which there are insufficient data".

2. The especially protected plant species are subjected to a strict regime of protection, stopping:
a) The intentional collection, cutting, weeding out or the destruction of these plants in their natural area, in the wild state;
b) The maintenance, transport, sale, exchange or the offer for sale or exchange of these species, taken in the wild state.
3. The species of the especially protected animals are subject to a strict regime of protection in their natural area of proliferation, stopping:
a) All the forms of the deliberate capture or killing of these species;
b) The deliberate disturbance of these species, especially during the propagation period, growth, wintering and migration;
c) The deliberate destruction or taking their eggs;
d) The damage or the destruction of the proliferation areas or of the residence places;
d) The maintenance, transport, sale, exchange or the offer for sale or the exchange of these species, taken in the wild state.

Again, these measures can provide additional value for the MPA systems because it provides a legal basis for prohibition of transport, sale or exchange of protected species.

The management plans for the specially protected species, registered with unfavourable conservation status provide an example of a coordinated approach between institutions as well as stakeholder involvement. According to Article 26.1 on management, the plans are drafted by "the ministry, in cooperation with the state bodies, central and local, specialized institutions, nongovernmental organizations and legal and individuals". The type of coordination for these plans can serve as an example for the PA system, where cooperation between different (state and non-state) actors is essential for its actual enforcement.

Research activities relating to biodiversity
Article 41 of the biodiversity law requires and environmental permit for research activities that exploit and use the biological diversity. The law describes the situation in which a permit is required as:

a) The research activity is in accordance with the requirements of this law;
b) Are provided information on legal and physics persons, who will conduct research for a subsequent use of the research materials, study object, as well as other accompanying information;
c) It is anticipated that the research activity will have a negative impact on the biological diversity.

This Article can be relevant for MPAs. Article 4.1 of the 2002 Law on Protected Areas lists the (IUCN) categories of protected areas including category I for scientific reservation. According to the IUCN this category applies to "an area of land and/or sea possessing some outstanding or representative ecosystems, geological or physiological features and/or species, available primarily for scientific research and/or environmental monitoring". As such description has not been included in the law, the specific procedure for an environmental permit for research activities that exploit or use the biological diversity can be applied within the MPA system. From the point of view of insufficient data on marine species in Albanian, paragraph 5 of Article 41 is equally relevant for the future establishments of MPAs. This paragraph provides the legal

obligation to include in an environmental permit, provided for foreign research activities, the obligation the Albania with use of the samples and assess the data that was collected.

Knowledge, innovation and practices of local communities

Chapter XI discusses the role of local communities in preservation, maintenance and use of biological diversity. Article 45.1 of the law formulates that:

The knowledge, innovations and practices of the local communities for preserving the biodiversity and for a sustainable use of its components are respected and promoted. Those are used to meet the practices of conservation and of the sustainable use of the biological diversity components in the Republic of Albania.

The identification of local communities and the definition of their role in protection and use are highly relevant for the management of the MPAs. With local communities often depending on fisheries, their role should (after consultation) be defined in the management plans. The law on biodiversity takes the point of departure that "communities or the individuals within the community have the right to benefit from the commercial or non-commercial use of their knowledge and practices".[135] This provision might be used as guideline when a MPA includes internal zoning on the basis of Article 4/2 on the 2008 Amendment of the law on protected areas. Especially since Article 19 on "users of protected areas" – discussing the rights of owners of the property – is difficult to use for an MPA because marine areas are not subject to private property. Article 18 establishes 'ownership' in protected areas; however it does not regulate 'use'.

Public information and participation

Although Article 13.1 of the 2002 Law of Protected Areas includes a participative approach in establishing the protected area, the law on biodiversity further elaborates on the importance of participation. The legislation on the PA system can include a cross-reference to this section.

Control

Control on the measures imposed on marine protected area can be considered as one of the most important aspects of legislation. This aspect is currently not included in the protected area legislation. Article 49.1 formulates that:

For the preservation of the biodiversity and its components, in implementing the requirements of this law, the Environmental Inspectorate, State Police, Forest Service Police, Fisheries Inspectorate, Plant Protection Inspectorate, Zoo-veterinarian Inspectorate and other inspectorates exercise control under the laws in support of which have been created.

No specific structure for cooperation between the state bodies and institutions is included.

On the basis of the findings during control, closure or partial or complete suspension of the activity is decided, specifying the measures to rehabilitate the state.[136] Sanctions are provided in

[135] Article 45.3 of the 2006 Law of biological diversity.
[136] Artcile 49.3 of the 2006 Law of biological diversity.

Article 54 of the law. In relation to control are the economic measures.[137] Economic incentives can be relevant for enforcement and participation of local communities or previous users. This can for example require schooling or training or availability of equipment leading to sustainable catch methods. This type of economic incentives could be used in MPA management.

5.4. *Synthesis of legal gaps*

In sum, the main gaps that have been identified in the law on protected areas include:

- The use of the term 'territories' in the PA law is ambiguous. Although the law on protected areas applies to "marine territories', it is not clear whether this term includes seabed, water column, surface and air.
- The description of the categories (territories) and the activities that are prohibited are written from a purely terrestrial perspective and are not or are hardly relevant for marine protected areas. The provisions moreover provide non-exhaustive lists of prohibited activities, which create gaps. Reformulation of these categories might lead to the inclusion of the activities described in more general terms that not allow for exclusion or gaps (such as the extraction of natural resources rather that hunting or fishing).
- The current PA law includes possibilities for exceptions on the basis of an environmental permit. It is not listed what types of activities can be covered by this, neither this has been subject to (parliamentary) debate. Including such broad options for exceptions could be subject to further discussion when drafting the law/amendment on the protection of marine protected areas.
- The 2008 amendment of the PA law, which is mainly based on the Birds and Habitats Directives, provides several relevant definition in relation to zoning.. Revision of the PA legislation as a whole could lead to a better connection between the two laws and their interrelationship.
- Article 13(1) of the PA law indicates the important position of stakeholders in the process of establishing a marine protected area. Revision of the law could lead to the inclusion of further and more specific stakeholder involvement, both in the process of the establishment and management.
- Legislation closely related to the PA law includes valuable terms and tools that can be relevant for the regulation of MPAs. Revision of the law on protected areas could lead to the inclusion of cross-references of these relevant provisions.
- The provision that sets out the obligation for monitoring provides minimal information. The provision that formulates the task for monitoring could include more information about the process of monitoring, such as indicators or specific objectives of the management plan.
- The legislation should clearly indicate the responsibilities that are attributed to the management committee. The management organisations, tasks and responsibilities should be described in a more comprehensive and detailed manner.
- The issue of enforcement should be explicitly included in the revised PA law. From the current PA law it is not clear who enforces the legislation. In the case of enforcement of the MPA regulation, the law should not only include environmental inspectorates, but also the fisheries inspectorates and the Coast Guard.

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The gaps or omissions identified in the current PA law should lead to a revision of the law as a whole. It would however be advisable to learn from current practice while rethinking and drafting the PA law. A first MPA shall be established by the Council of Ministers. This declaration builds upon the Constitution and on the 2002 Law on protected areas (amended in 2008). Although the decree cannot add new categories to the law – it can be seen as a first step to further stimulate the debate on how to interpret the protection categories in the PA law in marine areas.

Tab. 15: Applying the IUCN's definition of 'protected area' to Albania's first MPA (source: IUCN 2008)

Phrase (component of definition)	Explanation (IUCN)	Application to Albania
Clearly defined geographical space	Includes land, inland water, marine and coastal areas or a combination of two or more of these. "Space" has three dimensions, e.g., as when the airspace above a protected area is protected from low-flying aircraft or in marine protected areas when a certain water depth is protected or the seabed is protected but water above is not: conversely subsurface areas sometimes are *not* protected (e.g., are open for mining). "Clearly defined" implies a spatially defined area with agreed and demarcated borders. These borders can sometimes be defined by physical features that move over time (e.g., river banks) or by management actions (e.g., agreed no-take zones).	
Recognised	Implies that protection can include a range of governance types declared by people as well as those identified by the state, but that such sites should be recognised in some way (in particular through listing on the World Database on Protected Areas – WDPA).	
dedicated	Implies specific binding commitment to conservation in the long term, through e.g.: ● International conventions and agreements ● National, provincial and local law ● Customary law ● Covenants of NGOs ● Private trusts and company policies ● Certification schemes.	
Managed	Assumes some active steps to conserve the natural (and possibly other) values for which the protected area was established; note that "managed" can include a decision to leave the area untouched if this is the best conservation strategy.	
Legal or other effective means	Means that protected areas must either be gazetted (that is, recognised under statutory civil law), recognised through an international convention or agreement, or else managed through other effective but non-gazetted means, such as through recognised traditional rules under which community conserved areas operate or the policies of established non-governmental organizations.	
… to achieve	Implies some level of effectiveness – a new element that was not present in the 1994 definition but which has been strongly requested by many protected area managers and others. Although the category will still be determined by objective, management effectiveness will progressively be recorded on the World Database on Protected Areas and over time will become an important contributory criterion in identification and recognition of protected areas.	

Long-term	Protected areas should be managed in perpetuity and not as a short-term or temporary management strategy.	
Conservation	In the context of this definition conservation refers to the *in-situ* maintenance of ecosystems and natural and semi-natural habitats and of viable populations of species in their natural surroundings and, in the case of domesticated or cultivated species (see definition of agrobiodiversity in the Appendix), in the surroundings where they have developed their distinctive properties.	
Nature	In this context nature *always* refers to biodiversity, at genetic, species and ecosystem level, and often *also* refers to geodiversity, landform and broader natural values.	
Associated ecosystem services	Means here ecosystem services that are related to but do not interfere with the aim of nature conservation. These can include provisioning services such as food and water; regulating services such as regulation of floods, drought, land degradation, and disease; supporting services such as soil formation and nutrient cycling; and cultural services such as recreational, spiritual, religious and other non-material benefits.	
Cultural values	Includes those that do not interfere with the conservation outcome (*all* cultural values in a protected area should meet this criterion), including in particular: ● those that contribute to conservation outcomes (e.g., traditional management practices on which key species have become reliant); ● those that are themselves under threat.	

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