

## The Impact of Biodiversity, Flora and Fauna on Sustainable Development in Vlora Bay.

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### **Abstract**

*Wetland ecosystems are very present in the Albanian coast, where numerous activities occurring natural and economic. They are characterized not only by high biodiversity and productivity, but also from a wide variety of flora and fauna habitats. Most of the wetlands are focused on the Adriatic coast, where lies the Bay of Vlora, which is an ecosystem and a very important habitat, creates a diversity of biological diversity and its special characteristics. Various scientific studies that have been the main goal of bringing an integrated approach to territorial development and tourism potential, in accordance with existing sectoral strategies and regional implementation of contemporary models of economic development, have played an important role in the drafting of wetland management plans, enabling ecological and environmental assessments and evaluation of sustainable development opportunities in these ecosystems.*

*The object of this article is to address the role of biodiversity, flora and fauna in sustainable development and in particular in the development of sustainable tourism in the Bay of Vlora, one of the most prominent areas in Albania. In our analysis we have dealt with the current state of marine and terrestrial habitats, where identifying problems and determining measures for their rehabilitation occupy a special place. This situation has worsened during the transition period as a result of human pressures on habitats, such as illegal construction, soil erosion, landslides, problems with sewage from buildings constructed in these areas, etc. These problems can be reduced or even eliminated through the application of efficient policies for sustainable development.*

**Keywords:** *ecosystem, habitat, flora, fauna, sustainable development, strategy, environment.*

### **Introduction**

Albania has a diversified natural landscape, which show a combination of coastal ecosystems and habitats with land ones, which is reflected in the diversity of flora and fauna, which are part of a Mediterranean and Balkan chain of natural ecosystems. The system of coastal lagoons is one of the most important complexes of wetlands in the Mediterranean region, where in addition to wetlands, coastal area is mainly rocky and in some places limestone covered by a typical Mediterranean vegetation and partly along the coast there are beaches in shape pocket with sand and gravel. All rocky coastal area show wonderful and rare landscapes, especially when we are shipping or visit to caves, canyons and small bays, such as: Haxhi Ali's Cave and Gjon Duk's Cave of (Fremuth 2000 Pergent, 2002; Qiriazzi and Sala 2006; Sala et al. 2006; Tilo and JEUDY de Grissac 1994). The coastal area of Vlora region is a protected area where nature and biodiversity conservation should provide a platform for the types of tourism and infrastructure interventions, which are suitable for the protection of Navy, wetlands and land habitats.

This diversity has always been under the impact of human pressure on the environment. Coastal habitats such as wetlands, lagoons, sand dunes and forests are threatened in particular because of the high concentration of human activity and increase the level of environmental pollution in these areas, which has resulted in the disappearance of a number of special largest species and reducing populations of some other species. One reason for the decline of these species is the illegal hunting and fishing.

The subject in this article is to address the impact of biodiversity, flora and fauna in the sustainable development of Vlora Bay and challenges in the design of development strategies and their implementation opportunities because this is the challenge of the Albanian transition. This area is not only a brilliant interweaving of natural heritage with the environment, but is also considered an important potential at the national level, where tourism development is considered one of the most important scenarios of economic growth. Biodiversity is an irreplaceable value of income economic, scientific, educational, cultural, recreational and spiritual ones for the community of the area.

A very important priority is the expansion and strengthening of protected areas in the area ensuring not only the protection of them, but also the sustainable development of these areas and local communities that live in them without compromising their preservation because they contain some of the values of the country's largest ecological and economic terms.

A number of key projects are under implementation in the area of the Bay of Vlora, such as: Project "Development of Integrated and Sustainable Southern Coast", "Assessing the Gap in Protected Areas and Development of Marine Protected Areas," etc. ., which aimed at promoting economic growth throughout the South Coast, through the implementation of modern models of economic development and community involvement in decision-making in the area of direct beneficiaries.

Movements free demographic, abandonment and increase the rate of soil erosion as a result of migration, damage to flora and fauna, lack of legality, etc., Have brought pollution of the natural landscape, becoming a serious obstacle to increased circulation tourists and to ensure the safety of pollution, landslides and floods. Fishing and aquaculture, as one of the main directions of economic sustainable development of the area can have a negative impact on the pollution of water and soil, if not managed according to EU parameters.

### **Ecosystems**

Vlora Bay is characterized by natural ecosystems created by nature, on the basis of natural selection that have resisted longer time and date displayed with a larger number of individuals, such as different types of forest vegetation and pasture and types non - migratory animals and birds. A part of the flora and fauna is represented by a large number of individuals, such as the forests of oak, pine, acacia and some other ecosystems are represented by a limited number of the trend toward extinction, such as curly pelican, seal nun, etc.

The identification and publication of environmental indicators, assess the situation marine environmental and Vlora Bay is not at the level of standards allowed, as a result of the emission of different nature, physical-chemical and biological untreated, bringing not only damage the flora and fauna in the area, but the damage and pollution of the marine environment. Worsening of some ecological, physico-chemical and biological factors of the marine ecosystem has led to reduction of populations of flora and fauna to a minimum with the consequences biological incorrigible, by associating it with the passage of some species, in one of the "Categories of threat ", according to IUCN, 1994, in order of particular effective in reducing marine reserve certain populations of some benthic fish.

### **Natural reserves**

In Vlora Bay locate Narta and Orikum lagoon. Each of these lagoons offers rich variety of animal species where some of them are endemic and characteristic species of this area. Narta Lagoon is situated in the north of Vlora, which is the second largest lagoon in Albania size, with an area of 4.180 hectares. Narta Lagoon is an important natural ecosystem. It is known internationally because it meets the requirements of Ramsar, with a number of water birds, with more than 48700 varieties. For the three types, the area receives 1% of the total number of birds. In winter, more than 23% of Albania's water birds, housed in this area. There are 195 species of birds, while the cord that separates the lagoon from the sea is covered with Mediterranean forest. This is a good place for observation of aquatic birds and for fishing. The lagoon waters are rich in fish, especially in eel and bass.

From various studies that have been done in this area, it shows that the number of migratory birds and the number of wintering birds, especially in the lagoon is reduced by 5% in recent years. One of the main reasons of this phenomenon is illegal hunting in these areas as a result of the failure of legality and the failure of the state. Besides the Narta Lagoon in Vlora Bay Area is and Orikum Lagoon. It is also available. This lagoon, which is located on the south of the city of Orikum is designated as a protected area with manageable resources onshore and offshore. There are four main types of fish caught in the lagoon: Sparus aurata, Mugil cephalus, Anguilla anguilla and Dicentrarchus labrax. Bivalore lagoon shellfish are very important as in economic and ecological terms. Aurea Rudipates decussatus and clams are two main types of shellfish area (Zuna V. 2005: 34). Average

annual production of fish in Orikumi Lagoon is 100 quintals as the production of calms is 15 - 20 quintals with high quality and very favorite on the market. In addition to fishing activity in the Orikum Lagoon, another activity is the growth of fish. Expanding borders, doubling the area, the development of management plans, zoning territories and the restructuring of the network of protected areas, is part of the implementation of the policy of the Albanian Government to increase the surface of protected areas in Albania, in alignment with levels the European Union, as part of the natural heritage of the country and European one. The coastal lagoon system constitutes one of the most important complexes of wetlands in the Mediterranean region, where 1% of the European flora species and a significant number of fauna found in Albania (Miho, A; Witkowski, A. 2005: 123). Current models of economic development, pose a major threat in these areas.

### **Forests**

Forests have been a victim of cleansing and massive damage as a result of the legal and illegal cutting. The area of forests is reduced from 45% to 36% in the period at about 50 years. The average height of forest has decreased by 50%. Pine, poplar, linden, oak, birch and beech forests are in the national risk. Unstudied and logging practices in mountainous areas caused major soil erosion. Estimates of the loss of coastal wetlands are approximately 60,000 ha. During the transition, the phenomenon of illegal cutting of forests, has been one of the main concerns of the environmental situation in the Bay of Vlora (Guri, S. 2006: 65). New strategies of development must be oriented towards "Vision Green" aimed at the rehabilitation and protection of forests and pastures existing breaches of the situation, planning of new plantings especially those with greenery all year, the management of the territory and the implementation of sustainable development practices.

### **Plants**

Vlora Bay area is characterized by the variety of habitats and specific plants. These qualities make this area have important national, study, economic and historical values. The number of plants of this area runs roughly in 1400, constituting 42% of the flora of Albania (Guri, S. 2006: 69). There are 9 species at risk in this area, with special interest where the existence of two endemic species: Orchis Papparisti and hybrid form Orchis Albanica which are also the most endangered species in the area. About 25% of plants or 7.5% of the total number of endangered plant species of Albania, found in wetland complexes. In the fields, meadows and forests of this area grow traditional and cultivated vegetation.

### **Fauna**

Fauna of this area appear diverse. Vlora area has about 33 migratory species of animals, 14 of which are endangered, such as seal nun, triton turtles, pelicans and eagles, etc. Narta Lagoon is an area of international importance, with a number of aquatic birds that go about 48 700 species. Sea and lakes lagoons containing a large number of fish and eels. In this area houses about 390 species of vertebrates, such as mollusks, butterflies, crustace, etc. There are at about 32 species of aquatic molluscs only at Narta Lagoon which are part of the family Gastropoda and Bivalvia. This area is inhabited by 102 species of fish, 9 species of amphibians and 26 reptile species (February, F., 2013: 24).

### **Fish and sea assets**

The fisheries sector in the Bay of Vlora not only occupies an important place in employment, but the potential income source is different from that of other marine areas. The geo-morphological suitable make the area of Bay of Vlora one of the most lucrative fisheries where overfishing in the breeding time in forbidden isobaths (to below 30 m), by a large number of fishermen has resulted reducing fish populations mainly bentonite, crustaceans, etc.. The area also faces other problems, such as: lack of sale markets of the fish standard and certification European lack of commercial transactions, the lack of necessary capacities storing and processing, lack of education and training relevant to the fishermen, the supply of fishing vessels with diesel, the small number of control inspectors of the sea fishing, fishing fleets mismanagement, etc. All these problems identified

have done that Vlora recent years to be part of a series of important projects, which aim to achieve scientific cooperation to improve the sustainable management of the fishery based on optimum use of fish resources in the Adriatic (mainly fish end stocks), based on the concept of ecosystem based on Fishing (EAF), FAO-AdriaMed project and international MEDITS.

## Lands

The main types of soils that are found in this area are: ash brown soils, ash brown meadow and alluvial soil. The ash-brown soils are found more in hilly areas, under the cover of the coastal plants and in the bottom of the oak forest. This area is characterized by high levels of the erosion phenomenon resulting damage to vegetation during the transition period.

## Natural parks

**Karaburun Peninsula** that lies to the west of the Bay of Vlora and is the largest peninsula in Albania, about 16 km long by 4.5 km wide, at the north of which is the Cave of Haxhi Ali, (which is one of the largest in Albania at about 30m in deep, 18 m high and 12 m wide), Dafina beach, Grama beach, the Bay of Bear and Slave cave. This area is known for its clear and deep water, where can develop alternative forms of tourism especially diving tourism. This area is known for habitats, ecosystems, flora, fauna and typically Mediterranean landscapes, but faces with some problems, such as: lack of the development strategies, territory organisation, lack of infrastructure, bad management of the environment and the lack of signage related of the orientation of tourists .

**Sazan Island** that lies at the entrance to the Bay of Vlora and has an area of 5.7 square kilometers, less rugged coastline, mild climate, where the average annual temperature ranges around 16.2 celsius. There is grits Admiral beach, one of the most frequented by the adventure tourists. The ecosystem is a real park, very rich and protected, in which there are 7 species of amphibians, of which 3 are rare species and 15 reptile species, of which 13 are rare species. The most prominent types of amphibians and reptiles are: squamous lizard with blue gills, Balkan Green Lizard, Amodite serpent, etc. This so-called island ever "treasure island" should be called "The Forgotten Island" in the years of Albanian transition, because it has been abandoned since 1990. In recent years he has been involved in a number of important intended to preserve the biodiversity of protected areas and sustainable tourism development in the South Coast, through the implementation of sustainable development practices.

## Conclusion

**In conclusion** - we can say that the Vlora Bay represents an ecosystem and a very important habitat, creating a biological diversity, with its diversity and special features. Scientific studies that have been done in this area show that biocenosis of this area is constant or varies around an average value, which is the capacity of the far and stands out for the diversity of habitats and the wealth of species of flora and fauna which is in equilibrium biological. An important place occupied by wetland ecosystems, which are characterized by diversity and high productivity that represent a variety of habitats for flora and fauna and represent important centers of fishing, aquaculture, salt production, wintering many migratory aquatic birds where a part of them have globally endangered status (Miho et al., 2013). Plans to hedging and management of coastal zones constitute a challenge that requires a coordination of work between the local structures of the central associations of environmental protection, unification of the legal basis for environmental protection according to the criteria of the European Union as well as community participation in decision-making. Environmental sustainability is considered to be key to promoting economic growth, especially in the tourism sector without endangering natural resources, but rather using the environment as an opportunity to pursue a new development model of production and consumption. The area represents the best example in the area a long coexistence of the local population and nature, where socio-economic interests often dominated by those conservation. New strategies of development must aim: to preserve and improve the diversity of landscape and natural habitats, the inclusion of environmental component in the sustainable use of natural resources, creating conditions for endemic, rare,

precious, to endangered national importance and beyond, the development of research activity intended to preserve nature and to foster and promote the preservation of habitats and species.

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