



Vjosa Basin Sustainability: A Comprehensive Water Resource Management Guide

A holistic guide to effective water resource management in the Vjosa Basin. This booklet covers seven significant topics, including **flood and flood risk management, climate change, water supply and wastewater treatment, ecotourism, protected areas, natural resources, and hydroenergy**. A general overview, insights into the legal framework, a context analysis, and recommendations on how to address the main challenges are provided for each subject. The provided information aims to assist the relevant stakeholders for an effective decision making with regard to water governance in the Vjosa basin.

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Floods and flood risk management

Expert: Assoc. Prof. Klodian Skrame, Ph.D

General description

Floods represent a very frequent phenomenon in the Vjosa River Basin (hereinafter VRB).

Vjosa River is characterized by large floods with flow values varying from 2000 to 3000 m^3s^{-1} in the upper part to 5000-6000 m^3s^{-1} downstream¹.

According to the data available, 11 major floods were observed and each of them caused significant damage to private property. Some of the most important ones include the floods of 1860, 1865, 1867, 1868, 1869, 1870, and 1871. But the biggest and most catastrophic floods have occurred in the years: 1971, 1980, 1997, 2015, 2017, and the last one in January 2021, where the flood – waters inundate the floodplain, close to the river mouth area for many days. These floods were the most devastating, drowning many livestock, inundating thousands of buildings, and damaging hundreds of business activities, covering entire lagoons and crop fields near the river estuary area.

During the flooding of December 31st, 1970 – January 1st, 1971 the waters of Vjosa/Aoos River over spilled the riverbanks in many places and inundated the villages of Mifol and Novosela. The intensive rain fall caused many landslides. In the coastal lagoon of Narta, big quantities of water have been entered, causing high changes in salt, oxygen and sediment regime.

One of the biggest flooding of Vjosa/Aoos River was the flooding of February 2015. Because of an intensive rainfall (over 150 mm/24 hours) many municipalities and villages were flooded on the VRB. The river overspilled the riverbanks and inundated almost the entire downstream section of the VRB. The floods caused the damage and sometimes the destruction of 1700 buildings (most of them near to the river bed), 16 schools, 10 bridges, around 300 business activities very destroyed, many livestock's, hundreds of evacuated families and around 13000 hectares of flooded land (most of them were agricultural lands) were the consequences.

¹) $1 m^3s^{-1}$ - Cubic meters per seconds

According to the gradient and the flood characteristics, almost all the “Vjosa floods” can be labeled as “Flash Floods”. Flash floods can have various origins but are primarily associated with extreme rainfall resulting from thunderstorms. The intensity of the rainfall, its location and distribution, land usage, topography, types of vegetation, density of vegetation, soil composition, and soil moisture content collectively influence the speed at which flash floods may occur and where they might manifest.

Another important hydrological feature is that flash floods generally exhibit minimal downstream mitigation effects, and, in fact, the opposite may occur. Furthermore, flash flooding unfolds so swiftly that people often find themselves unprepared. In certain instances, water can rise rapidly, trapping individuals or causing property damage without allowing for adequate protective measures. In the VRB the flash floods are negatively supported due to the impacts of climate change, environmental degradation and increasing urbanization.

Moreover, as a side aspect, but important due to the possibility of replenishing due to flood flows, human activities especially related to poor decisions on river management and natural resource uses such as uncontrolled extraction of sediments from the river bed had and still have a negative impact on the morphology of the Vjosa river bed and its tributaries.

Policies and legal framework

The legal framework on floods and flood risk management is based on:

- a) DCM no. 835, dated December 3, 2004 – National Civil Emergency Plan
- b) Law No. 45/2019 on Civil Protection
- c) Draft on the National Strategy for Disaster Risk Reduction (NSDRR 2023–2030)

According to the NSDRR, the institutions responsible for flood risk management, water inundations and dam breaks are: Ministry of Agriculture and Rural Development supported by the relevant municipalities and District Prefect Institutions, as well as Institute of Geosciences at the Polytechnic University of Tirana (PUT). The Institute of Geosciences is the main actor that detects, monitors, analyses, predicts, distributes and communicates timely warning information about potential floods.

In order to strengthen and increase the level of flood risk management, Albania is drafting a Flood Risk Management Plan document consisting of 3 components:

- 1** Preliminary Flood Risk Assessment that leads to the identification of areas where there is a potential flood risk or where floods are likely to occur;
- 2** Hazard maps and flood risk maps;
- 3** Flood risk management plans.

The main objectives for flood protection to be achieved within a 9-year period according to the authors of NSDRR 2023–2030 are:

- 1 Reduce flood damage to less than 50% of what has occurred in recent years;
- 2 Rehabilitate and modernize the affected infrastructure and where there is a risk of collapse;
- 3 Build new protective works where necessary;
- 4 Train the personnel of the institutions responsible for irrigation and drainage in terms of monitoring, design, construction, and repair of protective infrastructure;
- 5 Strengthen the flood response capacities of operational forces.

The NSDRR 2023–2030 foresees several Strategic Projects related to floods, early warnings, water floods and dam breaks, a good part of which are also planned in the Vjosa water basin.

Context analysis

Unfortunately, more than half of the Albanian population lives very close to river mouth areas, where the risk of flooding is very high. Based on the most recent analysis, it is evident that many areas along the Vajosa River face significant flood risks. Figures 1, 2, 3, and 4 illustrate the most vulnerable zones within the municipalities of Përmet, Gjirokastër, Vlorë, and Tepelenë.²

Figure 1

Flooded area on the Përmet Municipality: 1. Grykabardha Bridge – Dëshnica River, 2. Variboti Reservoir – Shtika River, 3. Pacomi Reservoir, 4. Kosina Village, 5. Pasarela e Buallit, 6. Bus Park of Përmet 7. Bredhi i Badlonjes, 8. Langarica, 9. Dracova Bridge and 10. Carshova.

Figure 2

Flooded area on the Gjirokastra Municipality: 1. Kardhiqi Bridge, 2. Virua, 3. Kthesa e Aznakut 4. Ura e Lumit, 5. Përroi i Cullës, 6. Varrezat, 7. Kordhoca and 8. Dropull i Poshtëm.

Figure 3

Flooded area on the Vlora Municipality: Selenice section – Adriatic Sea: 1. Delta, 2. Dëllënje, 3. Zhukë, 4. Pishë Poro, 5. Bishan, 6. Fitore, 7. Novoselë, 8. Mifol and 9. Selenicë Municipality. The river mouth, the part where Vjosa River meets the Adriatic Sea, needs cleaning and maintenance to allow the river to communicate with the sea. In this way, the risk of flooding in this sector will be reduced.

Figure 4

Flooded area on the Tepelena Municipality: Gurëz and Lekli Bridge.

2) The data consists of observations made by the expert and information gathered during workshops held with the community in the frame of Espid4Vjosa project, 2023.

Legend

■ Large dams, 2021

Westland



Water flow

■ Stream

■ Canal

■ River

■ Lake

■ Reservoir

Water flow network

— Stream

— Canal

Order 3 (Municipal Boundary)



Order 2 (District Boundary)



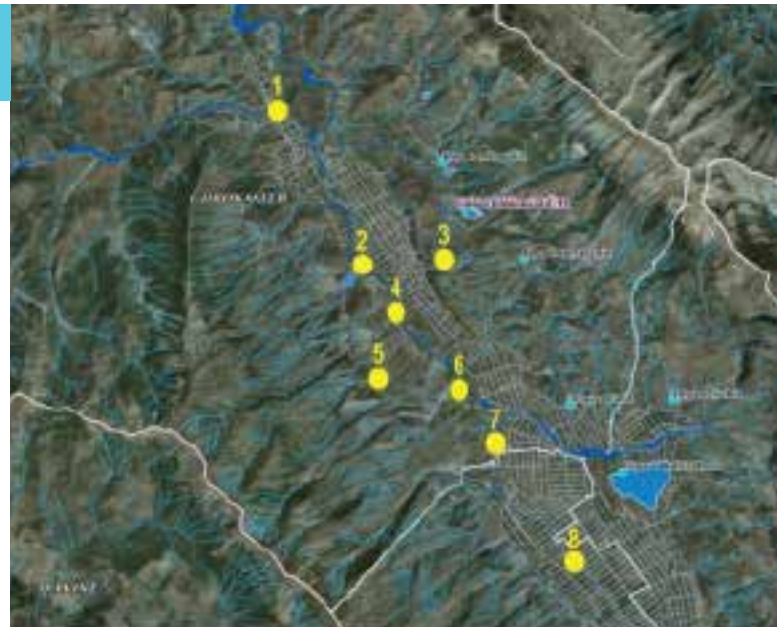
Areas at risk of flooding



Fig. 1



Fig. 2



Legend

■ Large dams, 2021

Westland



Water flow

■ Stream

■ Canal

■ River

■ Lake

■ Reservoir

Water flow network

— Stream

— Canal

Order 3 (Municipal Boundary)



Order 2 (District Boundary)



Areas at risk of flooding



Fig. 3

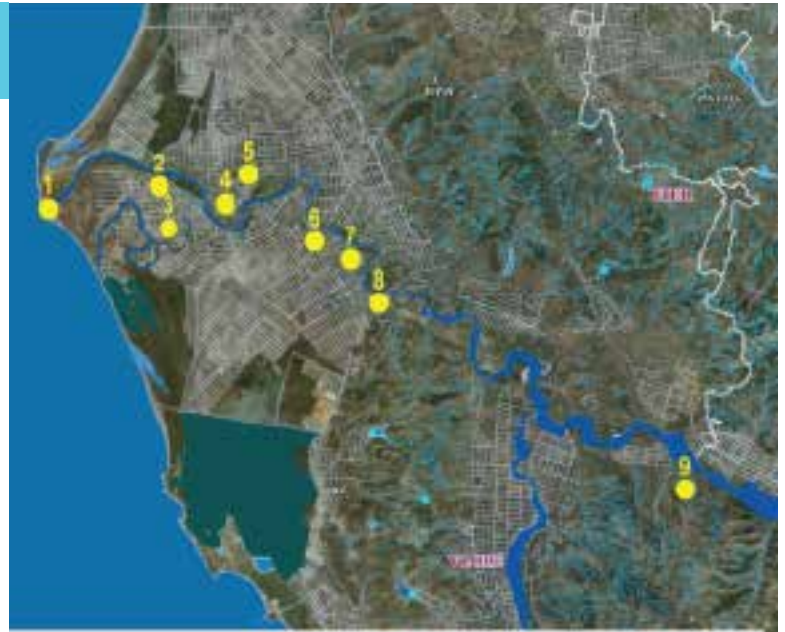


Fig. 4



Proposed solutions

1

Install digital hydro-meteorological stations accessible by all institutions and the increase of technical and operational capacities. Referring to the NSDRR 2023-2030, there is a need for modernization and rehabilitation of the network of weather stations, regular maintenance of equipment, regular reliable Internet connections, new qualified staff, such as hydrologists and meteorologists, and digitization of data in order to improve the Early Warning System of Albania. In addition, according to the NSDRR 2023-2030, the technical and operational capacities of Albanian institutions for forecasting, monitoring, and warning of hydro-meteorological data are still considered insufficient. The installation of digital hydro-meteorological stations will improve not only flood management and damage prevention but will also help knowing the amount of water passing through the VRB.

Climate change will extend already long periods of drought combined with short periods of intense rainfall. Knowledge and correct management of water in the VRB will help in the sustainable development of the areas and in ensuring proper use of land. The most important aspect would be the data-sharing. All the previous hydro-meteorological data, together with the new data obtained from the new hydro-meteorological stations have to be publicly available without any restriction, especially for the research institutions. The data could be managed and provided by a responsible institution, like IGJEO.

2

Ensure regular maintenance of secondary or tertiary canals, and the assessment of stability as well as reinforcement and monitoring of dams, ditches, embankments, etc. According to the NSDRR 2023-2030, some of embankments need repair, rehabilitation, or resizing due to the destruction and natural erosion that have occurred in recent decades.

3

Ensure coordinated management of water discharges, canals, rivers, and water-related structures, which is currently often shared between many institutions and authorities. Coordination and collegial decision-making at the local and national level is essential for establishing quantifiable benchmarks for problem resolution. Additionally, effective information sharing and early notification measures are vital for mitigating and, in some cases, preventing flooding resulting from water accumulation at elevated levels. Coordinated information dissemination and the implementation of a public information strategy are of utmost importance for safeguarding lives and properties in high-risk regions.

To ensure safety and sustainable development, it's essential that planning, land use, and people's actions take into account the potential flood risks. The main long-term solution consists of keeping urban areas outside the river floodplain. While land use planning for flood risk reduction has been extensively discussed in the literature, there is still a notable absence of a well-defined approach for flood-mitigation-focused land-use planning and its execution in Albania. A lack of hazard-informed land use planning coupled to random land cover pattern evolution characterizes the country.

An important aspect of Disaster Risk Reduction (DRR) is the implementation of risk-based land-use planning and regulations to reduce the underlying causes of disasters and their resulting losses. The integration of DRR in urban land use planning has to be set as a priority action. Land use planning plays a crucial role in safeguarding infrastructure and assets, with land use planners promoting the construction of resilient buildings away from flood-prone areas to advance community safety.

Deforestation is a major problem causing increased erosion, especially in fragile geological formations such as Flysch; composed by sandy and clay formations. This contributes to the loss of several hectares of land, which could be well used for agricultural purposes and for livestock farming. The lack of forests and vegetation on the slopes along the Vjosa valley means that in case of intense short-period rainfall, which is also enhanced by climate change, the entire amount of rain water reaches the main stream of the Vjosa river within a very short time. The surface waters, which have encountered no resistance on the slopes, will significantly increase the number of downstream flows creating frequent and increasingly larger floods of Vjosa River in the future due to climate change.

Other key measures include: developing university curricula related to river basin management and flood risk reduction; collaborating with neighboring countries to address flood management; and enhancing the theoretical knowledge of local government staff in areas such as water resource management and flood risk reduction.





Water supply and wastewater treatment

Expert: Dr. Klodian Muço

General description

Climatic changes and the irresponsible use of natural resources (land, water, air) are bringing about the environmental and territory degradation accelerating the process of climate change by bringing droughts in the summer period and floods during the winter season. According to specialists' data, around 21% of the forests in Albania are at an advanced degree of degradation. The abandonment of degraded or deforested lands, particularly in mountainous areas, has serious consequences for the activation of erosion, even years after the initial land disturbance¹. Water pollution in Albania is another issue caused by disposal of trash, and discharge of untreated wastewater and sewage. Industrial pollution of rivers has been observed in the rivers Shkumbini, Fani, Gjanica and Semani, where toxic organic compounds and metals from mining and industrial activity are heavily affecting these rivers.

The waste management system is composed by a weak collection system in cities and very little collection systems in rural areas. Private companies engage in recycling plastic, metal, glass, and paper waste, processing and packaging it before exporting these materials to other nations. The rest is mostly landfilled. Awareness on waste recycling is low. Littering and dumping trash remains a serious problem for Albania.

Water is a source of economic development in Vjosa valley, it is essential to produce agricultural and livestock products, it is the basis for growing fish, which is a source of food for the local community (sport fishing), while the river in its entirety serves for tourism and recreation. The responsible use of water is considered the only alternative to undertake in order to have a sustainable development in the environmental, economic and social dimensions. It is also the basis for curbing migration and depopulation of the country's peripheral areas.

¹ Lireza Q., Lireza N. (2014), *The problems of land degradation in Albania. European Scientific Journal*. 10(11), 71 – 76.

Pollution from sewage flowing into the river, disposal of solid materials or the use of inerts can turn into a heavy cost for the valley, compromising the health of the community and its natural values. This catastrophic situation, as already mentioned, can be seen in all Albanian rivers (main and secondary branches): Drin, Shkumbin, Seman, Vjosa, Erzeni, etc.

Policies and legal framework

The Government of Albania, focused on EU integration as its objective, has worked to harmonize the legislation with the EU legal framework, and intends to establish clear responsibilities for the implementation of the EU Acquis. Therefore, in the field of water quality, there has been progress towards the transposition of the Water Framework Directive, such as the Albanian water administration.

Law No. 9115, dated 24.7.2003, "On the Environmental Treatment of Polluted Waters" that aims to protect the environment and human health from the negative impact of polluted waters, also setting rules for environmental treatment and obligations for polluters.

Through the approval of the national Law 111/2012 "On Integrated Management of Water Resources", amended by Law no. 6/2018, the National Agency for Water Resources Management is the institution responsible for the management, provision and rational use of water resources as well as for the development and implementation of management plans. The adoption of the decision of the Council of Ministers (No. 662), dated 21.09.2016 "On the approval of fees for the extraction/use of water and liquid discharges" is considered part of the progress of the national water administration. From these Laws and the decisions of the Council of Ministers, it can be clearly observed that Albania has a relatively complete legal framework, but the implementation and enforcement of legality by public and private institutions is still a challenge.²

In the Vjosa valley, the municipalities are the authorities that currently own the waterworks that supply the residents with drinking water. In addition, the municipalities are also responsible for the treatment of wastewater and sewage. A lack of financial capacity and resources to build the necessary infrastructure for the collection and treatment of urban wastewater, makes it impossible to adequately treat water for all municipalities situated along the Vjosa Valley.

2) Law 111/2012 "On Integrated Management of Water Resources", amended by Law no. 6/2018; Law No. 9115, dated 24.7.2003, "On Environmental Treatment of Contaminated Waters".

Context analysis

River waters today are considered an important resource for the development of a variety of commercial activities, generating income and employment. Their use must be in compliance with the law and with well-defined criteria since the destruction of river flows or their pollution damages organisms, vegetation, or becomes a source of distribution of bacteria and viruses that are absorbed by fish and mollusks that are intended for consumption.

Referring to the National Environmental Monitoring Program 2021 (NEA, p.6), there are three strategic documents for water management³ whose primary purpose is to ensure an integrated and functional management of water resources, establishing monitoring and management systems for risks from floods and insufficiency of water resources. There are currently 38 monitoring stations in the country's main rivers, of which 5 are in the Vjosa River Basin.⁴ The results of the monitoring shows that the waters of the Vjosa River have a good quality⁵ where the rate of sewerage coverage is in the range of 1,7 to 66,8% for different municipalities. In terms of economic aspects, referring to the data of Instat (2022) and the study of Muço (2020), there are about 25 commercial activities in the valley of Vjosa with the river water or riverbed being their primary resource (aquaculture and inert collection points) and dozens of other businesses focused on agriculture and farming that are closely linked to the river water.

Further, there are a number of drinking water sources in the Vjosa valley that are used by residential areas, which are managed by the municipalities. The real challenge of water use is the management of water used for irrigation, where water is often considered as common good and pollution and exhaustion of water resources are not taken into consideration. Referring to the decision of the Council of Ministers No. 550, dated 15.07.2020, point 2a and 7, the authority responsible for issuing permissions for the use of water is the Water Basin Management Agency (AMBU in Albanian).

3) The National Integrated Water Resource Strategy 2018-2027, the National Water Supply and Sanitation Strategy 2011-2017, the National Irrigation and Drainage Strategy 2019-2031 and the action plan identify strengths, weaknesses, opportunities and threats for irrigation, drainage, dams and reservoirs and flood protection.

4) Vj1 Lumi i Vjosës; Vj2, Lumi i Vjosës ura e qytetit; Vj3 lumi drino Ura e Leklit Tepelene; vj4 Lumi i Vjosës Ura e Memaliaj; Vj5 Lumi Vjosë Ura e Mifolit Vlorë.State of Environment, report 2022.

5) The waters of Vjosa River are rich in oxygen, falling under Class I. Based on the values of NBO5, which is an important parameter for the evaluation of river water quality as an indicator of the degree of pollution, it is estimated that the stations are classified in Class II - Good quality.

Today, Vjosa river is threatened by public or private activities that use it for: solid waste disposal, sewage discharge, discharge of polluted water from aquaculture activities, as well as for the operation of inert material collection points. Municipalities such as Tepelena and Përmet fail to separate rainwater from wastewater, while most of the municipalities along the Vjosa River use the riverbanks as solid waste disposal points.

There are also several other businesses such as paint production, slaughterhouses or shoe production which dispose their wastewater into the Drino River (tributary of Vjosa River) without filtering it first.⁶

Their cumulative effect constitutes a threat to the quality of water resources and the organisms living in it. Another problem remains the scarcity or lack of sewage systems and urban water treatment plants, with infrastructure in most municipalities being missing or poor. Sufficient sewage coverage in the municipalities located along the Vjosa valley is from 1.7% in Dropull to 68.6% in Përmet, in Memaliaj 31.9%, Gjirokastra 40.3% and Tepelena 48.5%.⁷ The scarcity of available data does not further allow us to have a trend regarding water treatment in the Gjirokastra region.

As the Vjosa valley is increasingly becoming a tourist destination, it is crucial for the community to address issues such as water pollution, riverbed damage, and the legal regulation of water filtration stemming from economic activities, mirroring the standards of the European Union, which Albania aims to join. This includes finding solutions for the treatment of sewage from the municipalities of Përmet, Këlcyra, Gjirokastra, and Tepelena.

Proposed solutions

1

Ensure measures to be taken by local institutions to solve the problem of separating rainwater from sewage to reduce pollution similar to Technical Assistance for the Durres Wastewater Management Project financed by Western Balkans Investment Framework; Greater Tirana Sewerage System Improvement Project supported and finalized by the Japan International Cooperation Agency in 2008.

2

Take legal measures for economic activities to use depuration filters: currently there is no mandatory legislative regulation on the use of depuration filters in economic activities. The legislation only provides sanctions in the event of territorial waters pollution.

6) Verifications made by experts in the field.

7) NEA (2021). *The quality of ground water in our country*, p.50-51.



3

If supportive and according to the National Park Policies, ensure EU-certified use of pesticides and fertilizers in agriculture along the Vjosa valley, as they penetrate the ground and contaminate the groundwater, contaminating the water sources that are consumed by the inhabitants of the area. Most of them end up in Vjosa River, polluting it and endangering the river's species.⁸ Currently, regarding this issue, action is being taken by Rural Development Programme under the Instrument for Pre-Accession Assistance of the Republic of Albania 2021-2027. The geographical scope of the Programme is the entire territory of Albania.

4

Plan rehabilitative and improving investments in water supply and wastewater treatment prohibiting the discharge of polluted water into the river by channeling it into a functioning sewage network, e.g., through the investment of Swiss Agency for Development and Cooperation in Albania, Gjirokastra inaugurated the completion of works to improve water utility performance and expand freshwater water supply (January 2023).

5

Raise community awareness about responsible use of water by avoiding waste of water and water pollution, e.g., "Don't Chose Extinction" Campaign: UNDP joins hands with the Ministry of Tourism and Environment and "One Telecommunications" to raise awareness of the detrimental effects of climate change on people and planet.

6

Make intervention to develop a plan for implementing measures and applying penalties for cases of detected pollution. Albanian legislation continually converges with that of the EU in terms of land protection and conservation. The main problem remains the implementation of sanctions as defined in national legislation.⁹ *"In November 2022, the waters of the Gjanica River (Fier Municipality) were polluted by the sludge from the waste of hydrocarbon companies and olive factories. This situation lasted for almost 10 days in a row. 3 months after this environmental incident, it is not clear if the Regional Environment Agency (REA) has identified the company that dumped the waste in November, although a task force has since been set up. In its response to Investigative Network Albania, REA says that it has not imposed fines, as this was not the purpose of the field investigation".*¹⁰ This case is documented by INA on its portal, but a similar situation can also be seen in many other areas of the country: rivers, lakes, and forests.

8) *The disappearance of the water otter is an indicator of the pollution of Vjosa River according to the Dean of Natural Sciences of the University "Eqrem Çabej", Prof. Uruçi.*

9) Selimi Sh., Zaganjori Xh.(2017). *Environment protection in the legal system of Albania: The current situation in Albania on combating environmental crimes and the new reform directions. Academicus – International Scientific Journal. Available at <https://academicus.edu.al/nr14/Academicus-MMXVI-14-028-041.pdf> (accessed on 29/09/2023).*

10) Investigative Network Albania, <https://ina.media/?p=6831&lang=en>.



Hydroenergy

Expert: Dr. Ines Jaho and Dr. Elton Qëndro

General description

The 270 km (168 miles) long Vjosa River was declared a Category II National Park, according to the IUCN on March 13, 2023,¹ after a long struggle between the Albanian Government, (local, national, and international), civil society communities, national and international media, and science. Indeed, the campaign to protect Vjosa River was a campaign launched against hydropower development as one of its core threats. From 2005–2015, many concession permits were issued by the Albanian Government for the construction and operation of small hydropower plants in Vjosa River basin. However, the accuracy of concession permits issued has always been a debate of numbers, not only in Albania but also in the Balkans, where 3,281 hydropower dams are planned, of which 1726 are operational, 108 are under construction and 50% of them (1689) in protected areas.² Given the large water flows of Vjosa River³, where the average annual discharge to the Adriatic Sea is about 195 m³/s and the minimum flow during summer is 33 m³/s (Seferlis et al. 2008), the Albanian government has traditionally appreciated the hydric potential of Vjosa River.

A total of 59 hydropower plants were planned to be built in the Vjosa Water Catchment during 2000–2022. However, only some of them have been completed: there are still 3 HPPs in the construction phase, 11 already operating, and 45 awaiting approval (MIE, 2022). The operational HPPs are allocated along Vjosa tributaries, while the most damaged rivers seem to be the Çarshova and Langarica rivers. Therefore, these two tributaries are not part of the Vjosa Wild River National Park. Most of the remaining HPPs are still at an early stage of planning.

1) Ministry of Tourism and Environment (2023); <https://www.vjosanationalpark.al/about>

2) Schwarz, U., 2022. Hydropower Projects on Balkan Rivers – 2022 Update. RiverWatch & EuroNatur, Vienna/Radolfzell, 37 pp.

3) The average annual discharge of the Aos is about 70 m³/s which includes the flow from the Sarandoporo Branch (18 m³/s; the average annual discharge of Drinos River in Hormova 39 m³/s and Shushica River has an average annual discharge of 19 m³/s.

The government's interest in hydropower in the Vjosa Basin was assessed in the Sogreah 2008/9 study, which analysed the hydropower potential of Vjosa through the construction of dams for HPPs with a total production capacity of 458 MW, including HEC Kaludh (54 MW), HEC Dragot (109 MW), HEC Kalivaç (92 MW), HEC Poçem (99.5 MW) and HEC Karbonari (68 MW). These HPPs would generate 1810 GWh of energy annually, supplying power to around 276,823 families. However, the government's plans to build HEC Kalivaç and Poçem, with a combined capacity of 210 MW and a 250 million Euro investment, were faced with strong opposition from residents, civil society, and public figures on legal, media, political, and scientific fronts.⁵

Policies and legal framework



Kutë village © Photo from Adrian Guri

Albania has developed a national energy strategy 2018–2030 through a decision of the Council of Ministers (no. 480 dated 31.07.2018) which defines its energy sector development based on 5 scenarios. Again, hydropower plays an important role in achieving the obligations of reaching a share of 38% renewable energy and 9% energy efficiency, as stipulated by the Energy Community Treaty.

Further, the government has developed a National Energy and Climate Plan 2021–2030 (NECP), as an obligation deriving from the EU Green Deal and the Paris Agreement, which are legally binding.

NCEP includes targets and goals such as GHG emissions savings of 18.7%, a reduction in energy consumption of 8.4% and a renewable energy share in final energy demand of 54.4% by 2030. In this strategic and policy context, the government has updated the law on the energy sector 43/2015; the law on hydrocarbons no. 7746/1993, the law on protected areas 81/2017; and the renewable energy law 2017. The analysis of the developments of Vjosa River Basin has been seen from the perspective of these energy policies.

4) Ylliad (2015) *Analysis and Diagnosis of the Current Situation in Vjosa River*. February 2015

5) For more, refer to the activities and publications on Ecoalbania website; www.ecoalbania.org

Context analysis

Albania currently produces almost 100% hydropower [99% hydropower: 1% PVC; 2022] but it sells much of it abroad, then buys back fossil fuel and sells it at a premium to consumers during peak hours. Hydropower decreases in dry years or seasons of little rainfall, thus, the annual energy that Albania can produce is fluctuating and unpredictable. Par example, in 2020 it was 5.3 TWh; in 2021 it was 8.9 TWh and in 2022 it was 7 TWh. On average, the demand for consumption is 7.5 – 8 TWh and the country usually has a minimum energy gap of 30% throughout the years.⁶

In this electricity overview of the country, and in light of the designation of the Vjosa River as a National Park – the hydropower potential of the basin will have to be replaced with other renewable energy alternatives (Solar, Wind, Geothermal energy), to fill the gap created, i.e. either the strategic or operational gap in the country (demand for energy closer to consumption) only in the Vjosa basin. This would also contribute to a more stabilized and secure supply of energy at lower costs. Currently, the Albanian government has three non-renewable energy projects in the adjacent Vjosa area with the aim of supporting the energy gap and crisis, as follows:

- 1** Diesel power plant of 97 MW, worth 112 million dollars in the north of Vlora constructed in 2005: The project was supported by a loan of 74.5 million dollars (the rest is invested by KESH, the Albanian Energy Corporate). The government's long discussion to convert the diesel power plant into a gas-powered plant has not worked yet and the plant is not operational.
- 2** The licenses for hydrocarbon exploration in Block 4 from Shell Albania, which were previously granted by the Albanian Government and encompass the regions surrounding the Vjosa valley. There is still uncertainty regarding the actual hydrocarbon potential and the potential repercussions these projects might have on tourism and the environment in the area.⁷
- 3** Floating thermal power plants anchored in Vlora. The contract between KESH and Exceleerate Energy is another government project to address the energy emergency.

According to the International Renewable Energy Agency (IRENA 2021), the potential of solar PV for Albania is estimated at 2,378 MW, with a production of 3,706 GWh per year. The IRENA study proposes in its scenario an installed capacity of solar PV of 1,074 MW by 2030, with an annual generation potential of 1,697 GWh. Figure 1 shows the areas suitable for the development of solar PV that are mostly located in the upper part of Vjosa catchment (Fier, Karavasta, Spitalle, etc.).

6) E. Qëndro (2021). *The contribution of HECs to energy security in Albania, the current situation, and challenges for the future. RETRO 15+*.

7) **Impact on tourism.** *Tourism is a major contributor to the economy of the entire Vjosa Valley. Much of the tourist attraction lies in its extremely beautiful nature. Wild rivers like Vjosa and its tributaries, canyons and gorges, mountain ranges, castles, history, and a stunning coastline attract millions of visitors every year – a number that is expected to grow. They also firmly believe that this opportunity will be destroyed if Shell drills for oil in or around the area. Impact on Vjosa River.* Block 4 consists of a wide variety of environments. These include stunning mountain ranges complete with canyons and gorges, Vjosa River and several smaller streams and rivers that feed into it, lush forests, scrubland, rolling hills and quaint villages full of fascinating culture, tradition, and beauty. Much of this part of the country is still untouched by development and retains a truly unique and unspoiled quality that is becoming increasingly rare in other parts of the country. Shell has stated that they are not going to drill in Vjosa River, but drilling around it or near the rivers and streams that feed into it is just as dangerous.

The country, has a competitive wind potential of up to 7,400 MW under the low-cost capital scenario (IRENA, 2017). The IRENA study proposes in its scenario an installed wind capacity of 616 MW by 2030, with an annual generation potential of up to 1,794 GWh (IRENA, 2020a). Figure 2 above shows the areas with the highest potential for wind energy development in Vjosa Valley. From this analysis the high potential for alternative renewable energy forms could respond to a smooth transition from hydropower. Vjosa Valley has a high potential for such energy, but there is a lack of detailed analysis or relevant zoning for these alternative renewable energies, especially where and how much electricity could be produced. The construction/installation of renewable energy sources without proper planning, and in an uncontrolled manner, would pose a threat to the Vjosa basin and the new Vjosa Wild River National Park.

Figure 1

Albania's solar potential and the main areas

Figure 2

Albania's wind potential and the main areas



Proposed solutions

1

Increase energy literacy along Vjosa valley. In general, there is little energy literacy among many stakeholders along Vjosa river basin. This does not apply to technical and engineering expertise, but to the lack of general appreciation and understanding that the relationship between humans and energy is changing. Energy discussions continue to be technocratic, focused on supply and production. Today, there is a need for humanizing energy and for active commitment and clarification of the role of "energy communities". Citizens should know more about the forms of energy, energy efficiency, saving and suppliers of energy. Therefore, the role of civil society is essential in the creation of energy communities. For example, the successful model developed by EcoAlbania for Solar Panels in the village of Kutë,⁸ Mallakastër has enabled the production of solar energy by installing an independent power generation system to supply electricity to five public buildings and the street lights of the village.

8) <https://solar-ne-kute.ecoalbania.org/>



Solar in the Kutë village © Photo from Adrian Guri

2

Develop in-depth studies for renewable energy areas in the river valley. While hydropower aspects have been analysed in detail, there is a lack of analysis and zoning of the economic potential for solar and wind resources in the area. This hinders policy development in setting achievable targets and planning the lowest-cost energy system in the area.

3

Develop genuine public hearings, with the residents of the area, local authorities, and river basin councils. Local authorities should genuinely implement the legal framework (including Aarhus Convention principles) that mandates public hearings for significant projects or decisions affecting local communities. They should also use official channels to disseminate information about these hearings, making sure that the venues are accessible to all. Also, the Vjosa River Basin Council can contribute by sharing information on river basin projects and acting as intermediaries between local authorities and the community. They can and should provide expert support during hearings and maintain transparent records of discussions.

4

Raise awareness about energy efficiency among the local communities to promote sustainable practices and reduce energy consumption. Despite this option sounds like the simplest solution, it is indeed the most time and resource-engaging. To raise awareness about energy efficiency in local communities, it is needed to start by organizing educational workshops, partnering with local grassroots organizations, and creating informative materials. Another instrument would be to offer pilot energy audits for demonstrative purposes and host community events, to engage schools and youth groups. To encourage feedback and incentive programs, it is important to involve local media for wider coverage. Demonstration projects and guest speakers can add credibility to the efforts.



Natural resources management

Expert: Prof.Dr. Etleva Muça

General description

Natural resources are related to the support and maintenance of soil, air, water and biodiversity quality (Pessoa & Silva 2009). The evaluation and analysis of the natural resources in Vjosa river takes on a special importance not only because of the local environmental values, but also the social and economic development of the population living there. Vjosa is considered one of the last wild rivers in Europe (Frank 2018; Pessenlehner et al 2022) and flows through 13 of the 61 municipalities of Albania (Kolonja, Përmet, Këlcyra, Dropull, Libohova, Gjirokastra, Tepelena, Memaliaj, Mallakstra, Himara, Selenica, Fier and Vlora). The river serves as a habitat for over 1,100 species, of which 13 are globally endangered (MTM 2022).

With the Decision of the Council of Ministers no. 155 of March 13, 2023, Vjosa River, together with its tributaries Drino, Shushica and Bënça, was designated a National Park, category II, according to the IUCN with an area of 12,727 ha. Forest, freshwater and agricultural ecosystems play a dominant role in the landscape of Vjosa valley (Schiemer et al. 2020). This basin, in addition to the water surface area and the river bank of 11,822 ha, contains an area of 99,835 ha of forest, an overall pasture area of 17,542 ha, arable agricultural land with an area of about 32,418 ha, as well as about 22,296 ha of land planted with orchards and vineyards. In the upper and middle part of the basin, agriculture and livestock are mainly characterized by extensive patterns due to small areas and high fragmentation of agricultural farms.

According to INSTAT (2022), there is a declining trend in livestock in the upper and middle part of the basin compared to previous years, with currently about 28,000 cows, 596,000 goats and sheep, and 388,000 poultry at the moment. Despite a decline of livestock over the last year, forest mass has decreased by 9% for 20 years, from 2000 up to 2020 (Leiter&Toromani 2022) due to fires and logging. The model of intensive use in both agriculture and livestock has been practiced mainly in the lower part of Vjosa basin and has created greater economic income for farmers compared to the income from the development of agriculture and livestock in the upper and middle flow.



Agriculture in this part is focused on the cultivation of vegetables in the field and with solar greenhouses as well as fruit trees with high yields. Although artificially bred trout is offered in various tourist areas along this basin, the Ministry of Agriculture has not confirmed this activity in the region. Because it can only be caught with a hook and there is no official data on its cultivation, fishing in this area has all the characteristics of an adventure sport.

Vjosa Valley is also rich in natural mineral resources such as natural gas, oil, bitumen and coal. More precisely, these natural minerals in the underground of Drashovica, Gorisht-Kocul and Cakran-Mollaj, which are found in the form of natural gas and oil at a depth of 100-4500 meters (AKBN 2019-2022). In the region of Selenica are minerals in the form of bitumen and bituminous sand. In the Memaliaj municipality, they are found in the form of coal, which comprises a deposit of 4.4% of the entire national reserve (National Agency of Natural Resources 2019).

In the region of Selenica are minerals in the form of bitumen and bituminous sand. In the Memaliaj municipality, they are found in the form of coal, which comprises a deposit of 4.4% of the entire national reserve (National Agency of Natural Resources 2019). Surface mining for limestone and silica with a total surface area of 9.2 km² is also taking place in the Vjosa valley, as it does across Albania (National Agency of Natural Resources, February 2023). Taking raw materials such as sand, gravel, and stones from the water basin's coasts and beaches is forbidden in protected areas (Law 11/2012 on Integrated Management of Water Resources, article no.67).

The current monitoring data on the quality of water resources in the Vjosa basin are insufficient and not representatives of the whole basin. The last report on environment status on 2021, prepared by National Environmental Agency present the monitoring program implemented in five monitoring stations in Vjosa river basin.¹ There are no installations that burn fossil fuels since there are no manufacturing or processing plants that employ this technology. Even the oil processing refinery is no longer operational, having been decommissioned since 2019. There is a thermocentral in Vlora for the production of electricity, which must consume fossil resources for burning, but it has never functioned.

Policies and legal framework

The management and oversight of natural resources in Albania, encompassing the Vjosa basin, involve the application of multiple concurrent laws. This is a result of the unique characteristics of resource divisions, which encompass forests and pastures, agricultural land, freshwater bodies, and both surface and subsurface mineral deposits. More precisely, the relevant legal framework is summarized as follows:

- ▶ Law no. 57/2020 "For Forests" and the National Agency for Forests
- ▶ Law no. 9693, dated 19.3.2007, "On the Pasture Fund", as amended

1) Vj1 Lumi i Vjosës; Vj2, Lumi i Vjosës ura e qytetit; Vj3 lumi drino Ura e Leklit Tepelene; vj4 Lumi i Vjosës Ura e Memaliaj; Vj5 Lumi Vjosë Ura e Mifolit Vlorë. The waters of these 5 monitored stations are waters rich in oxygen, classifying them in Class I - High status. State of Environment, report 2022.

- ▶ Law no. 9817, dated 22.10.2007 "On Agriculture and Rural Development"
- ▶ Law no. 111/2012 "On the Integrated Management of Water Resources"
- ▶ Law no. 10 304, dated 15.7.2010 For the Mining Sector in the Republic of Albania, as amended by Law No. 65/2021
- ▶ Law no. 7746, dated 28.7.1993, On Hydrocarbons (exploration and production), as amended

Also, the policies and management of natural resources are oriented through sectoral and national strategies.

National Strategy for Integrated Development (NSID), 2021–2030. The NSID 2021–2030 serves as a crucial platform for prioritizing policies in both sector-specific and cross-sectoral strategies. The alignment of NSID implementation will be guided by the attainment of the 2030 Sustainable Development Goals (SDGs), to which Albania is fully committed throughout the entire process. Consistent with this overarching strategy, the following inter-sectoral plans have been endorsed:

- ▶ The National Strategy for the Integrated Management of Water Resources according to decision no. 3, dated 13.12.2017 of the National Water Council and Decision of Council of Ministers no. 73, dated 7.02.2019.
- ▶ National Irrigation and Drainage Strategy 2019–2031 and Action Plan according to Decision of Council of Ministers no. 345, dated 22.05.2019.
- ▶ Strategy for land consolidation 2016 – 2030, according to Decision of Council of Ministers no. 700, dated 12.10.2016.
- ▶ Agriculture, Rural Development and Fisheries Strategy 2021–2027 according to Decision of Council of Ministers no. 460, dated 29.06.2022.

Context analysis

The natural resources within the Vjosa basin have historically served as the primary source of income for its residents. The manner in which these resources are utilized is closely tied to both tradition and the level of technological investment. Various agricultural practices employed over time have had detrimental effects on the ecosystem. These repercussions include a decrease in forested areas, unregulated grazing, and occurrences of fires caused by activities like collecting firewood and clearing land for new pastures. Furthermore, the environment has suffered from contamination of soil and water due to the use of chemical fertilizers and pesticides, as documented in Sovinc (2021). The result has been a reduction in biomass and the depletion of agricultural biodiversity, primarily due to land usage, often driven by personal consumption and uncontrolled grazing on natural pastures, which is favored for its cost-effectiveness in livestock feed.

Challenges for agricultural land, pastures and forests are related to:

- ▶ Limited agricultural and livestock production. These are a consequence of the existence of small farms with a high level of fragmentation and low yields.
- ▶ The continuous use of agricultural lands, which has interrupted the natural vegetation (Leiter&Toromani 2022).

- ▶ Loss of soils due to erosion and lack of vegetation cover, especially along the river banks.
- ▶ Loss of biomass due to livestock grazing, indiscriminate logging and deliberate burning.
- ▶ Lack of environmental education on sustainable strategic policies of natural resources.
- ▶ Water pollution from agricultural treatments with chemical fertilizers and pesticides, which will bring irreparable consequences if not addressed in a timely and professional manner.
- ▶ Lack of up-to-date breeding plans for forest and pasture economies, where managers of the forest fund plan holding capacities and determine the extent of use such as for grazing, cultivation of aromatic medicinal plants, tourism, utilization of secondary materials, etc.
- ▶ Inadequate coordination between central and local authorities in monitoring and managing forests and pastures remains an issue. Power division, particularly concerning monitoring, is unclear. The delegation of responsibilities lacks a prior allocation analysis and lacks adequate funding for functions like forest management, agriculture, and fire protection. (MTM 2020)

The extraction of minerals often causes environmental pollution in nearby areas due to gases which are sometimes emitted by burning, and due to waste spills or discharges into surrounding water bodies. The risk of Vjosa water being polluted at its middle section is high due to the discharge of polluted urban waters along the river and in its lower section due to mineral exploitation activity of Selenica region (Sovinc 2021). Mining activities involving limestone and siliceous stones result in water pollution due to solid waste. However, the most significant impact is the irreversible physical damage inflicted on the environment during the extraction process. As a result, all living organisms are forced to vacate the area due to noise pollution and dust.

Challenges regarding mineral resources and their use:

- ▶ Preservation of the natural landscape. It is a fact that the process of extracting minerals is accompanied by damage to the landscape and vegetation that covers the surface in that region.
- ▶ Achieving a reduction of water pollution, derived from the extraction of minerals from the underground

Proposed solutions

Prevention of the destructive effects on land, water, biodiversity, natural resources – should be addressed not only by those who work or live in Vjosa valley, but also by relevant interest groups in its vicinity

1 Develop a management plan for Vjosa water basin through a multi-sectoral approach, that promotes the balanced utilization of water resources in both the agricultural sector and the hydrocarbon industry.

2 Restricting mining activities in the basin requires a comprehensive and critical evaluation of existing licenses and their impacts on the river system. This evaluation should consider various environmental, social, and economic factors to ensure a well-informed decision-making.

3

Orient agriculture towards a multi-functional agricultural model which positively affects good management of the rural area, the preservation of the environment and rural identity as well as the increase of employment in the area. This way, integrated farming is encouraged by optimally reducing damage to the environment.

4

Create an enabling condition for livestock food base by establishing forage systems in order to completely eliminate irresponsible grazing of livestock in forests.

5

Support farm families with alternative forms of energy security, avoiding logging.

6

Develop support programs in terms of environmental education through Regional Agency for Protected Areas (RAPAs) in the Vjosa National Park in order to raise awareness at the community level (e.g. by the creation and implementation of a Junior Ranger program).

7

Encourage local communities to create a Local Action Group (LAG) as a long-term solution towards sustainable economic development.

8

Develop joint plans for forest and pastures breeding between institutions at the local and central level. Measures to preserve the environment, ensuring the replacement of the biomass lost due to uncontrolled use of forests.

9

Improve managerial and law-enforcement capacities serving sustainable management of natural resources.

10

Increase necessary capacities of farmers and ranchers in order to inform them about sustainable practices in developing agriculture and livestock through cooperation with the extensive service at the regional directorates of agriculture.

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Protected areas

Expert: Prof.As. Elena Kokthi

General description

Protected areas (PAs) serve as a vital conservation tool for the preservation of natural habitats and both land and water ecosystems, ultimately helping to mitigate the loss of biodiversity (Relano et al., 2022). This protection mechanism is also legitimate for Albania, as the country hosts about 32% of the biodiversity of the European flora (IUCN). Within the national network of protected areas in Albania, as reported by the Ministry of Environment and Tourism, national parks (category II) encompass approximately 45% of the total PAs, while natural parks (category IV) account for 27.6%, and protected landscapes (category V) encompass around 21%. Moreover, the combined total of categories I, III, and VI represents about 5% of the PAs.

The Vjosa Wild River National Park was officially established on March 15, 2023, encompassing the primary river along with three of its tributaries. Designating the National Park under IUCN category II signifies its safeguarding in accordance with the most rigorous global conservation standards. This includes the implementation of a comprehensive strategy to effectively address the various challenges confronting the aquatic ecosystem, encompassing issues like water and soil pollution, waste management, and deforestation.

The Vjosa Wild River National Park is part of a larger network of PAs within the extended Vjosa River basin, as illustrated in Table 1. A cartographic illustration in Figure 1 reveals the potential for establishing a shared network of PAs, offering chances for promoting local development through sustainable tourism initiatives.

Policies and legal framework

Albania's journey in nature conservation dates back approximately five decades, with ongoing initiatives to enhance and update legislation and protective measures since the 1990s. Furthermore, as part of its integration process into the European Union, Albania is compelled to uphold and oversee its natural ecosystems in accordance with the regulations and directives of the European Union. Law No. 81/2017 "On Protected Areas" is the framework law, showing the broad convergence of the national biodiversity conservation legislation with that of the EU. In this law, a special section (or Section V) is dedicated to PAs of international interest and, in particular, Natura 2000 sites. In addition, the Decision of the Council of Ministers No. 1156 of 24.12.2020 represents a very important step towards generating income from ecotourism services and activities in PAs and towards financial independence. The National Network of Protected Areas includes 800 such areas (including natural monuments), which in total cover about 21% of the country's territory.



© Photo from Rajmond Kola

Context analysis

The implementation of Law No. 81/2017 on Protected Areas provides for the relevant administrative structures¹, with the National Agency for Protected Areas (NAPA) as the central public body within the Ministry of Tourism and Environment (MTE) that leads and manages the protection and management activities of all natural PAs, and the Regional Administrations of Protected Areas (RAPAs) as the competent local bodies at the district level (in particular, RAPA Vlorë, Fier and Gjirokastër are responsible for the Vjosa Basin) that cover the management and monitoring aspects. The municipalities that implement the Law on Protected Areas on their territory cooperate with the RAPAs. The law also provides for management committees as an organization with oversight role for the implementation of the management plans. The latter consist of municipalities, NAPA and other local stakeholders from agriculture, tourism, forestry, business, civil society, etc. Currently, there is no strategy for PAs that would allow cooperation among the different actors.

In general, the operation of RAPAs often faces challenges due to limited resources, both in terms of human resources, which are usually insufficient to cover the area of jurisdiction, and in terms of financial capabilities to professionally perform all management and monitoring tasks. Although according to Law No. 81/2017, the management of PAs must be done in accordance with the Specific Plan for Protected Areas and the Plan for the Management of the Country's Ecological Network, there is still no real study on this. In general, the PAs in the Vjosa Basin do not have an updated management plan approved by the Ministry of Tourism and Environment.

Proposed solutions

- 1 Ensure continued development of the technical and logistical capacity of NAPA /RAPAs personnel to be constantly updated on the various aspects of work related to planning, managing, promoting, or monitoring in the field.
- 2 Create management plans for PAs where they are currently absent and revise existing plans. It is crucial at this stage to facilitate collaboration among institutions and ensure alignment in the development of the management plan for the Vjosa Basin's protected areas with the concurrent development of the Water Resources Management Plan for the Vjosa Water Basin.
- 3 Promote sustainable tourism, ecotourism, agro-tourism, etc. in accordance with IUCN protected area standards for specific PA categories as a way to improve revenues in the PA.

¹) Chapter IV Management Structures of Protected Areas

4

Ensure that the revenues generated within the PA are reinvested in the area itself, supporting the improvement of management, monitoring, and the promotion of the PAs. These revenues should also contribute to the welfare of the local community residing in proximity to the PA.

5

Advocate for educational and awareness initiatives that underscore the significance of the PA network in the Vjosa Water Basin, emphasizing its role in conserving biodiversity and fostering sustainable growth within local communities. This strategy aims to secure the enduring preservation of natural ecosystems that, in turn, underpin the well-being of these communities.

6

Develop a guide for empowering, informing, training, and fostering collaboration among stakeholders to enable sustainable management of PAs while ensuring sustainable development of local communities.

7

Elaborate a unique selling proposition (UPS) that encompasses both ecotourism and sustainable development principles while maintaining the ecological integrity of the Vjosa Basin, without compromising it.

8

Encourage an inclusive management approach that considers various ecosystem services within the Vjosa Basin, fostering favorable economic, social, and environmental benefits for local communities.

Figure 1. Protected Areas Network, Vjosa River Water Basin

Legend

 Vjosa River Water Basin

Protected Area

Category

 Marine National Park

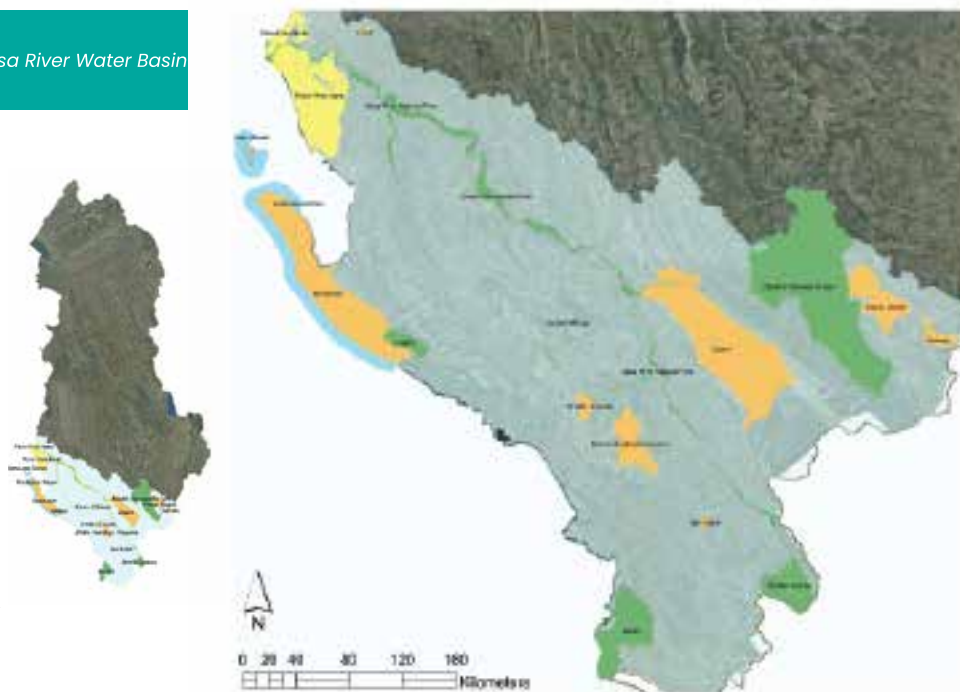
 National Park

 Natural Park

 Protected Landscape

Figure 1: Map of PA in the Vjosa Basin according to IUCN classifications.

Source: processed with the PA latest data, May 2023



These maps are produced under ESPID4VJOSA project, implemented by Euronatur and EcoAlbania and financed by Austrian Development Agency

Table 1. Network of Protected Areas within the Vjosa River basin

Protected Area	Size (ha)	PA category (According IUCN)
Bredhi i Hotovës - Dangëllia National Park	36003,76	II
Gërmenj Nature Park	1410	IV
Bredhi i Kardhiqit-Rzëzomë Nature Park	4303,6	IV
Pishë Poro-Nartë Protected Landscape	16124,61	II
Karaburun-Sazan Marine National Park	12437,7	II
National Park Llogora	1769,2	II
Butrint National Park	8622,2	IV
Bredhi i Zhulatit Nature Park	936,2	IV
Syri i Kaltër Nature Park	293,3	IV
Bredhi i Sotirës Nature Park	4927,67	IV
Zagori Nature Park	24607,63	IV
Porto Palermo Nature Park	1694,98	IV





Ecotourism

Expert: Dr. Klodian Muço

According to a 2023 World Bank analysis, “Albania is known as a beach destination for tourists who usually prefer shorter stays with low levels of individual spending – a profile associated with an undiversified tourism value chain with a limited range of attractions and activities”¹. The Vjosa Valley, and in particular the Vjosa Wild River National Park, has the potential to provide Albania with a destination that is different from the sea and sand market that currently prevails.

Sustainability is at the heart of the vision for the Vjosa Wild River National Park and the valley in which it flows. This includes protecting the core ecosystem of the river and the environment associated with the river, engaging the communities associated with the river to ensure they are part of the development process of the region, and increasing the economic benefits that local communities derive from ecotourism in the valley in a way that also improves the ecological systems of the landscape.

1) *Tourism 2.0 in Albania: A new opportunity for resilient growth – European Perspectives Feb 2023*



© Photo from Katja Pokorn

General description

The Vjosa is considered one of the last wild rivers in Europe, whose tributaries flow freely from the mountains of Greece to the Adriatic coast of Albania. Together with its tributaries, it forms a river ecosystem over 270 kilometers long, characterized by a biodiversity of national and global importance.

Tourism in the Vjosa Valley has grown steadily, especially in recent years, when lovers of natural beauty and wild nature have begun to pursue a variety of activities in the area, from hiking to rafting, with an emphasis on enjoying the natural beauty of the river and the cultural values of the valley.

Tourism in Përmet

Përmet, the second largest city in the Gjirokastra region, where the Vjosa River flows, is becoming increasingly popular, especially with outdoor tourists. While visitors who visited Përmet used to stay in Gjirokastra or stop over on their way to Korca, today more tourists use Përmet as a base for an overnight stay. One reason for this is that in the last decade local tour operators from Përmet have developed tourist offers around outdoor activities, making the town and its surroundings a designated destination for river rafting, hiking and biking, as well as for culinary experiences. As a result, tourism in Përmet is growing, even if it is only in its nascent stages: much of the tourism in Përmet and in the entire region revolves around the Vjosa River.

Policies and legal framework

The legal basis in Albania consists of Law no. 93/2015 "On Tourism", as amended. In addition, within the framework of the National Strategy for Development and Integration (SKZHI), the Republic of Albania has approved a sectoral strategy named "National Strategy for the Sustainable Development of Tourism (NSSDT) 2019 - 2023".

The strategy defined by the NSSDT is the basis for the action plans for the development of ecotourism and agrotourism, and there is even a legal basis for the latter, from Council of Ministers Decision No. 22, 12.01.2018. This strategy contains "the approved criteria and procedures for the certification of agrotourism activities and the construction of structures/objects that serve agrotourism". The action plans contained in the aforementioned strategy provide the methodological and administrative basis for the development of agrotourism as one of the most promising forms of sustainable tourism. This is also due to the possibility of directly involving farmers in this type of activity, which guarantees a capillary increase in revenues while connecting communities with the territory.

The NSSDT has classified the "Vjosa-Zagoria area", i.e. the 441 km² area between the sanctuary of Këlcyra and the Greek border, as "a priority area for tourism development". Under the vision of "Albania, a welcoming, attractive and authentic tourist destination, for sustainable development of the country's economic, natural and social potential", the strategy identifies three groups of tourism types, namely "coastal tourism", "nature tourism" and "thematic tourism". The "ecotourism" is considered as one of the three tourism types of the "natural" sub-sector. The "development of the nature tourism program and the creation of new products" is known as one of the specific objectives of the strategy.

With reference to the legislative base, the Ministry of Tourism and the Environment is the principal public body responsible for the definition and implementation of tourism policies in Albania. Other responsible bodies in the field of tourism, related with the Ministry of Tourism and the Environment, are:

- ▶ Tourism Advisory Committee for the Private Sector
- ▶ National Tourism Agency
- ▶ National Coastal Agency
- ▶ The tourism sector inspectorate
- ▶ Local government units (municipalities)
- ▶ Standardization commission of tourism activities.

Recently, the Vjosa River has been declared a National Park, which will further increase the ecotourism potential of the wider Vjosa Valley for the development of outdoor activities such as rafting, mountain biking, trekking, mountaineering, nature walks, horseback riding, study tours, etc.) In this context, the entire Vjosa Valley and its catchment area, due to its high environmental values, fully meet the conditions set out in the Strategy for the promotion and development of tourism in the natural sub-sector. At the private level, tourist demand has been met by an increase in the range of activities, including investments for developing tourism infrastructure, mostly financed by Albanians.

Context analysis

The use of natural resources for tourism purposes is experiencing rapid development in the Vjosa Valley. Currently, the most common types of ecotourism practiced in the valley are: Rafting, hiking, canoeing, mountaineering, thermal tourism, bird watching, etc. The typical Mediterranean climatic conditions in the Vjosa Valley, with rainy and mild winters and hot and dry summers, favor the diversification of nature-related tourist activities throughout the year. This has underlined the need to promote the area and its values, including natural values, cultural heritage values and other special aspects of culinary tourism, such as enogastronomy, etc.

These activities will focus on the Vjosa River and its free-flowing tributaries, now declared a National Park. Tourist activities will spread from the river to the edge of the valley, where voluntary associations have been created of companies operating in the field of tourism, agri-food, handicrafts, agro-tourism etc. The best structured association of this type is "Pro Përmet", which operates in the territory of the Municipality of Përmet. The growing tendency of this type of business is positive for the area, but it faces the following obstacles and challenges:

Limited capacity.

Although the demand for tourism activities classified as ecotourism or agrotourism has increased, there are still deficiencies in recognizing the natural potentials and making them available for sustainable tourism.

Limited community environmental education.

The tradition of classical "economic development" establishes a proportional relationship between "economic benefits and environmental damage", which means that in the free market economy there is generally a belief that "environmental damage is an inevitable consequence of economic development". This mentality is the main risk to sustainable development in the Vjosa Valley as well and it can only be overcome through environmental education and by promoting economic activities that create economic benefits without harming the environment. So basically, by using natural resources and promoting tourism, economic value can be created without harming them. This would lead to sustainable development, either for the current local community or for future generations thanks to the creation of complementary activities related to tourism.

Rural exodus and abandonment.

The rural areas of Albania are completely affected by rural exodus based on rural poverty. This phenomenon is particularly pronounced in the Vjosa Valley due to its proximity to Greece, which has been an attractive destination for migration over the past decades. Rural exodus represents a risk for any local development strategy, as it leads to a loss of human resources that threatens social, environmental and economic stability. This phenomenon must be counteracted, and this can only be achieved by creating opportunities for self-sufficiency in ecotourism and agrotourism for the local population.

Globalization of local products and culture.

Maintaining the authenticity of local food, plant and animal products, which is the main guarantee for maintaining the quality flag of local gastronomy as an essential attraction for ecotourism and agrotourism, is a particular challenge.

Low level of local collaboration.

The lack of ability to create networks of ecotourism and agrotourism stakeholders is an obstacle to the development of these activities and to the economic, social and environmental sustainability of the area.

Lack of promotion of ecotourism.

Ecotourism can be considered today as one of the best models for the sustainable development of a given place. It creates added economic value and increases the well-being of people without harming the environment.



Proposed solutions

- 1 Strengthening institutional awareness.** Ecotourism is the use of nature for tourism purposes without harming it. Local institutions should pay more attention to keep the environment of the valley clean and stop the use of inert material dumps along the river basin. There is also a need to improve the legal framework and logistical infrastructure to promote ecotourism.
- 2 The Vjosa National Park brand and institutional support for the certification of local organic products in the Vjosa Valley.** This means moving from labeling local products by area to a comprehensive brand that markets the entire valley and not just products from specific areas.
- 3 Promote ecotourism** in the Vjosa Valley at international fairs organized/attended by Albania.
- 4 Introduction of courses** at the College of Gjirokastra dealing with ecotourism or adventure tourism in the educational offer.
- 5 Creation of joint tourist offers** to promote ecotourism by the municipalities in the Vjosa Valley in cooperation with National Administration of protected Areas and the Regional Directorate for Cultural Heritage as the institutions responsible for managing the natural and cultural potential.
- 6 Training and raising awareness** among communities and promoting organizational models at the local level between public and private stakeholders can be considered a very good option to promote ecotourism as a development alternative for the Vjosa Valley.
- 7 Creating opportunities for self-reliance by promoting ecotourism** in the Vjosa Valley through local and national tourism institutions. This initiative would boost the need for accredited guides and accommodations, as well as stimulate a greater demand for locally sourced products, thereby enhancing the value of the agricultural sector.



Climate changes

Expert: Prof. Dr. Romeo Hanxhari

General description

Climate change (and biodiversity loss respectively) represents the greatest non-military threat humanity has ever faced. Such a threat could call into question any natural and social systems on which human existence as a natural species and as a social being relies on. In the area of the Vjosa valley, climate change puts the economic sustainability of local communities at risk, due to reduced water availability, climate extreme conditions, changes in the hydrological cycle of waters, changes in plant cover, decline in livestock yields, and agricultural crops. Thus, the increasingly frequent and severe droughts put the water supply of agricultural farms at risk. Likewise, the increased frequency and severity of floods puts lives and property of communities in the entire area at risk.

According to UN reports, the increase of average temperatures will bring the harvest time closer, reducing the quality of products, while the frequency of waves of cold will endanger the success of agricultural crops. The United Nations (UN) has two strategies in place for climate change: mitigation and adaptation. For the "mitigation" of climate change, in 2015 the UN activated the Paris Agreement, which aims to keep the increase in the average global temperature to no more than 2°C compared to the pre-industrial period, while so far temperatures have already increased by 1.2°C. Regarding the prevention of further increase in temperature, the implementation of the principles of sustainable use of natural resources as a whole and water resources throughout Vjosa basin, as well as keeping the bed of Vjosa river in a natural state, contribute positively.

At the same time, the UN has also strongly suggested the strategy of "adaptation" to climate change, which aims to change human social and economic systems, making them more resilient to the impacts of climate change and as less affected as possible.

Policies and legal framework

The Government of the Republic of Albania signed the Paris Agreement on April 22, 2016 in New York. Following this, Albania has submitted to the UN its National Determined Contribution (NDC) document with commitments to reduce greenhouse gas emissions by 2030 by 11.5% compared to 2011. In implementing these commitments, Albania has developed its "National Strategy for Climate Change & Action Plan" (NSCC&AP) as the main strategic document that aims to strengthen coordination between sectors related to climate change mitigation and adaptation measures, environmental protection, and sustainable development.

The NSCC&AP was drafted in 2018 and approved in 2019 in accordance with and in support of the then EU legislation, but the new European Commission, through the approval of the "Green Deal" on December 11, 2019, raised European ambitions for the environment and climate to a qualitatively new level. The Green Deal aims for Europe to become the first climate-neutral continent, i.e., with net zero carbon emissions, by 2050. On October 6, 2021, the EU transposed the "Green Agreement of the Western Balkans" at the "European Union & Western Balkans" Summit in Sofia, which also represents a new level of national commitment for Albania as well. The legal basis for action in this context in the Republic of Albania consists of Law no. 155, dated 7.12.2020 "On climate change", as amended.

Context analysis

Climate change has complex consequences. It is not only a question of raising the average global temperature, but also of the whole chain of natural and social and economic consequences connected with it. Until now, the Intergovernmental Panel on Climate Change (IPCC), which is the only scientific authority on climate change in the world, and of undisputed prestige, has published six official Reports on climate change on the planet. The most recent of them, the "AR6" Report, was made public in 2022 and early 2023. This report is the only reliable source of data on climate change. The data of this report are specifically for the category "terrestrial ecosystems of the Mediterranean area", and therefore for the entire Vjosa. According to this report, in the area of Vjosa, several consequences related with high reliability to climate change are evident, such as the consequences in changing the structure of ecosystems, in the displacement of species towards the north or towards the heights, and in the change of phenological phases.

The report emphasizes that very likely climate changes in the above-mentioned areas would lead to adverse impact on human systems, especially in the decline of agricultural production capabilities due to i) limited amount of water; ii) decline in the health and productivity of livestock; iii) reduced productivity of fishing or aquaculture resources, etc. Damage to key economic sectors is linked to some degree to climate change. A decrease in economic productivity related to livestock and agriculture would push the community of Vjosa valley either to emigration or to increased impact on the area's natural resources, which would pose a long-term threat to the quality of the area's natural ecosystems. This makes it urgent to develop and implement an action plan for adapting to climate change for the economic activities of communities.

Elaboration of local data are made also by World Bank. According to this, Albania is one of the most vulnerable to changing climate trends in the Mediterranean region. Changing weather patterns have already been observed over the last 15 years with increasing temperatures, decreasing precipitation, and more frequent extreme events like floods and droughts. The snowfall has been less and less and it melts earlier and faster than in previous years. Projections indicate a decline in summer rainfalls of about 10 percent by 2020 and 20 percent by 2050.

Proposed solutions

Sustainability in increasing the well-being of the community of Vjosa valley area is a prerequisite for the success of any strategy for protecting nature and water resources, even among increasingly aggravated consequences of climate change. In terms of adapting to climate change, changes must be planned and implemented in a way respecting the economic and social life of the communities in the Vjosa area.

1 Promote environmental literacy for climate change. Any solution would start with environmental literacy, i.e., informing the community about the causes of the changes identified in the productivity and efficiency of their agricultural and livestock economies. Community awareness should aim at conveying the following messages: i) the identified problems are related to global changes, which require not global, but local solutions; ii) solutions are urgent, but they cannot have immediate effects; iii) intensified use of natural resources is not a solution because this would only worsen the chances of success; iv) the solution for the community is only to adapt to the new climatic conditions through small and sustainable changes. This awareness campaign would guarantee the cooperation of the community in protecting the environmental quality of Vjosa protected area and in ensuring the sustainable use of water resources in Vjosa basin.

2 Climate related risks management. Climatic changes demonstrate themselves in increasing average temperatures, increasing the frequency and severity of rains in the form of torrential rains, long periods without rains, extreme temperatures, etc. The analysis of the consequences (impacts) includes the assessment of the occurrence and intensity of events such as floods, droughts, heat waves, cold waves, etc., as well as the corresponding damage to natural resources and local economies.

3 Develop a climate change adaptation action plan. The development of a Plan of measures for adaptation to climate change, which would also include the gradual change of the economic structure of the communities, from an economy based entirely on the primary sector (agriculture and livestock), towards a more resilient structure that combines the primary sector with the service sector, especially with ecotourism and agrotourism, which are the most suitable activities among reduced agricultural productivity due to climate change, and with Vjosa river bed being designated a protected area.

4 Ensure integration of policies and strategies. There is a need for full integration of the obligations arising from the legal framework on climate change with regional and local sectoral and cross-sectoral policies. This is urgent for planning and decision-making processes, with the aim of harmonizing efforts to mitigate climate change and to prevent severe negative consequences of climate change.



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