

HOW TO STRENGTHEN THE FRIENDLY COEXISTENCE OF MAN AND NATURE, A CHALLENGE FOR ALBANIA

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ABSTRACT

Although a small country, Albania shelters a wealth of aquatic and terrestrial ecosystems, in marine, coastal, hilly and mountainous zones. Due to these circumstances, as other Mediterranean countries Albania is recognized as an important biodiversity hotspot in Europe, with rare and endangered habitats and species. Albanian nature as such has been the guarantee of survival and prosperity for humans over the centuries, in agriculture, animal husbandry, forestry, fishing, etc. It is today one of the strongest points of tourism, often fascinating many foreign visitors. A short overview of the biodiversity values and their importance for man and nature will be given here, and how to strengthen their friendly coexistence with the actual ambitious development. The friendly balance between development and conservation, and sustainable use of natural resources has not been easy in the last 70-80 years of the new Albania. Despite the efforts towards the protection and related legal acts, nature and the natural resources are seriously impacted, especially in the last 30 years of the economic transition; the protected areas are not saved either. The efforts to better understanding and real application the friendly balance of the Development & the Preservation & the Sustainable use of natural resources, must be an everlasting challenge, for an ecological society and ecological governance, through practical and concrete actions, through proper legal acts and their enforcement, through education, awareness etc. Harmonization of environmental protection policies and economic development with EU legislation and related standards is strongly recommended. The education, especially higher education, is a key driving factor for sustainable development and environmental protection. Establishing a long-term interactive science-policy platform, and building up an integrated and applied research, focused in socio-ecological aspects, is strongly suggested by renowned experts. It would help to face with the existing evident environmental problems arising from the economic development and the existing attitude towards nature. With this opinion I wish to stress the development of sustainable ecotourism, coupled with supportive government policies to ensure effective environmental conservation of natural resources while safeguarding the economic viability and social well-being of local communities.

Keywords: Albanian natural values; Man and nature coexistence; PAs; Sustainable development; Ecological approach.

INTRODUCTION

Great wealth of natural resources in Albania

Although a small country, Albania shelters a wealth of aquatic and terrestrial ecosystems, marine and coastal zones, lagoons, estuaries, rivers, springs, karstic and glacial lakes, Mediterranean evergreen and deciduous shrubs in hilly areas, deciduous and pine forests, alpine and sub-alpine pastures and meadows in high mountainous regions (Doka & Qiriazi, 2022) (Fig. 1). The favorable climate with heavy rainfall, variegate landscape with high mountains and deep valleys, marshland and coastal transitional areas supports diverse and rich habitats, and rich plant and animal diversity. Due to these circumstances, as other Mediterranean countries (Silva *et al.*, 2008; Myers *et al.*, 2000), **Albania is recognized as an important biodiversity hotspot in the Europe, with rare and endangered habitats and species** (MoE, 2015; GIZ, 2017; *Anonymous*, 2024; etc.) (Fig. 2).

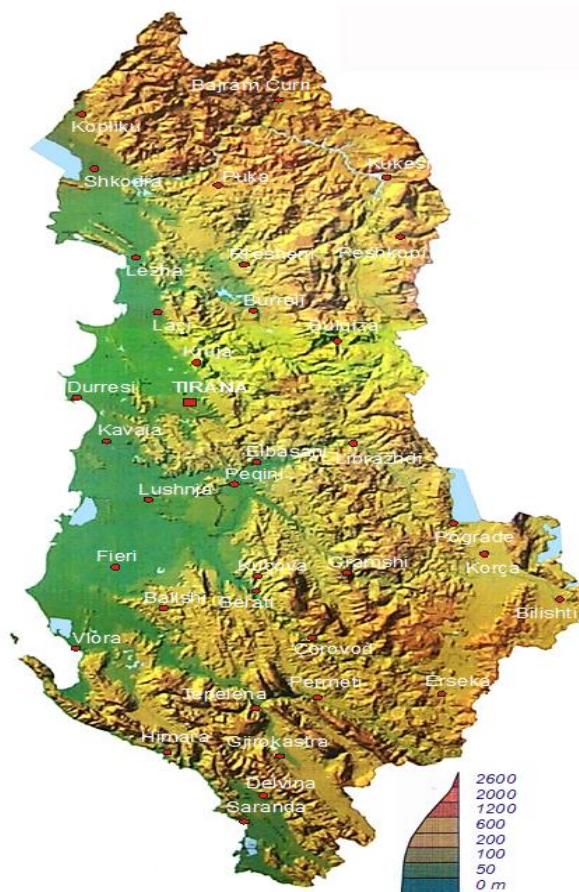


Figure 1. Geographical Map of Albania (Pano *et al.*, 2007, modified by Miho *et al.*, 2013).

Some significant examples: The country is exceptional within Europe regarding flora and vegetation with ca. 3,650 species of vascular plants (ferns, conifers and flowering plants) (Vangjeli, 2021), or ca. 30% of Europe's flora, in an area only 0.27% of Europe (Fremuth, 2000). Therefore, the species density per surface unit for vascular plants is **ca. 130 species/1000 km²**, while for the whole European continent it is only 1.2 species/1000 km² (Silva *et al.*, 2008 report up to 12,500 vascular plant species for the European continent); the same is for mosses with 459 species, or 16 species/1000 km², while for the whole European continent it is only 0.2 species/1000 km² (Miho *et al.*, 2023); and probably it would be the same for other living groups. About 2,350 species of lower plants (algae and mosses) and fungi are known in Albania, with about 1,200 diatom species. Despite the limited studies, about 5,500 animal species are known, with 4,880 invertebrates (about 4,000 insects) and more than 800 vertebrates (*Anonymous*,

1999), where 361 species of birds (19 species globally threatened) (Clements *et al.*, 2024) and 58 mammal species (5 globally endangered species) (IUCN, 2021). Albania's variety of wetlands, lagoons and large lakes also provide critical winter habitat for migratory birds (Anonymous, 2024).

All is due to the environmental features, such as climate, geology and topography, by all natural and biological interactions and human activities. Albanian nature as such has been **the guarantee of survival and prosperity for humans over the centuries, in agriculture, animal husbandry, forestry, fishing, etc.** It is today one of the strongest points of tourism, often fascinating for many foreign visitors.



Figure 2. Pristine riverine habitats (*above*) and rare and/or endangered species (*below*) from Vjosa Wild River NP (Meulenbroek *et al.*, 2020).

Natural resources & their sustainable use: Worth to define that the natural resources are all what is drawn from nature, including their valued characteristics, and with few modifications, used for commercial and industrial use, aesthetic, scientific and cultural interest; it includes sunlight, atmosphere, water, land, all minerals along with all vegetation, and wildlife (i.e. Oxford Dictionaries, 2014). Natural resources are part of humanity's natural heritage or protected in nature reserves. But the concept varied over time and from one society to another, and seems not easy to understand it properly in Albania. Let me list here some natural resources and related activities in Albania: **waters** (rivers, springs, lakes, seas & lagoons, wetlands; reservoirs, drinking, bottling, bathing, fishing & aquaculture, cooling, relaxing, etc.); **air** (industry; urban; living & working; relaxing); **sunlight** (bathing; heating; energy panels); **land** (agriculture; livestock; infrastructure: urban, tourism, roads; quarries; mining; etc.); **plants** (forests, shrubs & meadows: wood, food, grazing, medicinal-aromatic plants, harvesting, relaxing, tourism); **animals** (mollusks; fishes; amphibians; birds; poultry; harvesting; hunting; etc.); **underground** (minerals; fuel: coal, gas, oil; drinking water); etc.

True to say that the friendly balance between the development and the preservation and sustainable use of natural resources has not been easy in the last 70-80 years of the new Albania. It can be noted by the extreme reclamation of wetlands and hilly terracing for farmland in the 1970s, and the old-fashioned industrialization and mining with lots of pollution in those years; it continues still to have nowadays evident negative effects from the abandoned rests of the former agriculture, industry and mines. With the economical system change after the 1990s, the unfriendly approach to nature was even more (*see* § 4).

In ecological sense the richness in habitats and plant and animal species is an important resource, from both natural and economic perspectives. However, it also implies the responsibility to continuously preserve nature, habitats, and wildlife. Careful use, preservation, and continuous restoration are the country responsibility. It also means that ecosystem services must be always properly considered, as recognized by EU policy and international environmental conventions and standards on the environment.

Protected areas as a need to maintain ecological processes

How to well balance the economic development and the nature protection is a strong and challenging need worldwide, and for Albania as well. Therefore, declare and proper management of protected areas (PAs) represent a Constitutional obligation in Albania, supported by many legal and by-laws that guarantee the protection of nature and biodiversity, in accordance with many international conventions and standards (i.e. Dudley, 2008). PAs are declared as such for their integrity, i.e. for their intact nature, compared to other areas, for their rich biodiversity, rare and sensitive habitats and species, but at the same time endangered from the economic development and unfriendly human activities. Due to recent efforts, the system of protected areas (PAs) in Albania covers today about 22% of the territory (ca. 6,240 km² (Fig. 3) (data from March 2024), with 12 National Parks (terrestrial) and 1 Marine NP (IInd Category after IUCN), 719 Natural Monuments (III), 34 Managed Nature Reserves & Municipal Nature Parks (IV), 5 Protected Landscapes (V) and 4 Managed Resources (VI); moreover, the PA system encompass 4 World Heritage sites and 1 Biosphere Reserve (UNESCO), 4 Ramsar sites, 45 Important Plant Areas (IPAs) and 16 Important Bird Areas (IBAs) (see also UNEP-WCMC, 2024). The national policy for the governance and management of PAs is implemented by the Ministry of Tourism and Environment (MTM) through the National Agency of Protected Areas (NAPA) and its local administrations in each county (<https://akzm.gov.al/zonat-embrojtura/>) and its local administrations.

Legal and institutional achievements and gaps towards nature conservation

Environmental legislation: Albanian Constitution (adopted by the Law 8417/1998, last amended by the Law 137/2015) possesses a modern view towards the environmental approach and natural heritage. Rational exploitation of natural resources on the basis of the principle of sustainable development is included in the social objectives of Article 59; the State ‘*aims to supplement private initiative and responsibility*’ with: ‘*a healthy and ecologically adequate environment for the present and future generations*’ (Article 59/d); and further ‘*the rational exploitation of forests, waters, pastures and other natural resources on the basis of the principle of sustainable development*’ (Article 59/dh). To implement these basic requirements towards the nature protection, the Law 81/2017 ‘*On Protected Areas*’, sanctions that the State must ‘*ensure special protection of important components of natural resources, biodiversity and nature as a whole, through the declaring the PAs (in situ conservation)*’.



Figure 3. The current map the Albanian PAs (elaborated after the NTC map; Decision 10/2020; <https://planifikimi.gov.al/index.php?eID=dumpFile&t=f&f=6098&token=c6c19e064a3ec8bcc0d0736c1d92ddb745655fde>)

The law 10431/2011 'On Environmental Protection' sanctions to 'preserve, protect and improve nature and biodiversity; to use nature and its resources in a prudent and rational manner' (Article 3); then after 'to preserve, protect and restore environmental sustainability with public participation', in accordance with Article 56 of the Constitution, crucial attitude towards the environment. Other laws support these Constitutional obligations: 'On Protected Areas' (Law 81/2017, amended by the Law 21/2024), 'On Protection of Biodiversity' (Law 9587/2006), 'On Environmental Permits' (Law 10448/2011, amended by the Law 52/2020), 'On Environmental Impact Assessment' (Law 10440/2011, amended by the Law 128/2020), 'On Water Resources' (Law 29/2024), 'For Strategic Environmental Assessment' (Law 91/2013, amended by the Law 51/2023); etc. Due to mismanagement of forests and hunting, accumulated in decades, two major Moratoria are still in vigor in Albania, a 10 years Moratorium on Forests (Law 5/2016) and the other one on Hunting, first 2 years (Law 7/2014), extended by the Law 61/2016 (Mullaj *et al.*, 2017). Both had some effects in restoring the poor state of forests and shrubs, and some increase of animal populations (especially birds).

Environmental institutions: The Ministry of Tourism and Environment (MTE) is the most important body in charge of environmental regulation, the sustainable use of natural resources, promotion of renewable resources, protection of nature and biodiversity, sustainable development, management of forestry and pastures, and the quality monitoring of water resources (Dervishi, 2006). Going through the current written priorities, MTE aims to prevent and limit erosion through reforestation and hydro-technical works in riverbeds; the improvement of air quality and waste treatment; drawing up the National Plan for the Integrated Management (NPIM) of PAs, to protect their ecosystems, but also to integrate them in a long-term plan with infrastructure and tourism projects (<https://turizmi.gov.al/tueizmi-dhe-mjedisi/>). But their implementation in practice is almost irrelevant; while the drafting of the NPIM of the PAs would clearly lack the proper vision towards the nature conservation and sustainable development if we consider the amendments of law 81/2017 (see § 4). The same missed attitude is clearly shown in practice by the National Agency of Protected Areas (NAPA) and its local administrations, **more focused towards the tourism than to real protection.**

National Environment Agency (NEA) and its 4 regional agencies is an important body under MTE, in charge of: ensuring environmental performance; environmental research and knowledge; environmental impact assessment and licensing; as well as inspection and thematic control for compliance with legal requirements and environmental conditions (<https://akm.gov.al/>). Another important body is the of Water Resources Management Agency (WRMA) (<http://www.ambu.gov.al/>), the central executive body of the National Water Council, with 4 local Water Basin Administration Offices, deals with the good governance of water resources for the fulfillment of life needs, taking also care of the sustainability of ecosystems. To my opinion they are actually **more focused towards the quick than to sustainable development.**

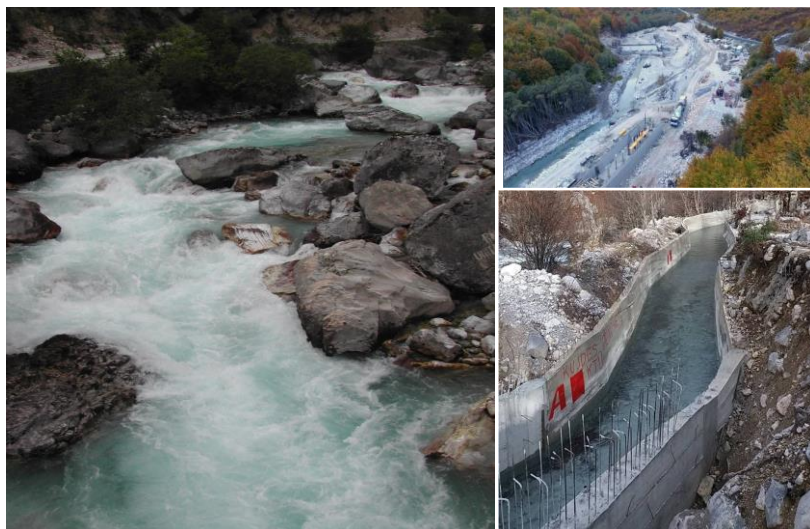


Figure 4. *Left*, view of the Valbona River, the core part of the former Valbona River NP (now part of the Albanian Alps NP); *right*, construction works of Valbona HPPs, core area of the NP, now under operation (i.e. Shala, 2022) (photos from: <https://pamfleti.net/tag/hec-et-ne-valbone>).

However, it is clear that the government, MTM and its affiliated bodies (NAPA, NEA), and WRMA are often too weak towards law enforcement, often undervalued or ignored the needs towards proper nature conservation, and proper use of natural resources. Moreover, all are not well shaped, with a scarce infrastructure and logistic means, scarce and none properly qualified staff, far to the current needs. I.e. the number of experts with a master or a PhD in conservation biology is scarce, less than 10%. Some aspects, both from the legal and institutional side will be discussed shortly further.

Albanian nature and PAs under the pressure of development

Despite the efforts towards the protection and related legal acts, the Albanian nature continues to be seriously impacted in the last 30 years; PAs are not saved either (i.e. GEF, 2011; EEA, 2015; MoE, 2015; GIZ, 2017; NAPA, 2019; Nika & Skëndaj, 2021; *Anonymous*, 2024). The natural resources were constantly threatened by the illegal logging, fires, extreme river mining, uncontrolled and unfriendly urbanization of fertile land, large-scale construction of hydropower plants (Fig. 4), mostly in the last 20 years, pollution (urban, industrial, agricultural, livestock, aquaculture, etc.), unfriendly use of aromatic-medicinal plants, illegal fishing and hunting, etc. Therefore, many pristine ecosystems, their habitats or species are threatened at the National level (Urdhër 1280/2013), European and global level, that require protection or sustainable use. **As mentioned it was not due only to the missing legislation, but mostly the scarce vision, scarce law enforcement, scarce authority and awareness.** Let's give some significant examples.

Hydropower large scale construction (HPPs): After the assessment carried on by Schwarz (2012), more than 85% of the hydromorphological state of the Albanian rivers was high or very high. Up to the present ca. 320 HPPs are in operation (Keta, 2024), but still planned to build up to 530 HPPs (in year 2030) (Muço, 2021); it means ca.19 HPPs/1000 km², almost double compared with the density of other countries in the region (Schwarz, 2015). Such a large extent and dense activity as well, will all separately or in synergy for sure will have strong socio-ecological impact to riverine habitats, species and water quality (Fig. 4). Experts have argued in years about it dealing with HPP protection of Valbona River (Diku *et al.*, 2013) and mostly of Vjosa River and its tributaries (ActaZooBotAustria, 2018; Hauer *et al.*, 2019; Schiemer *et al.*, 2020; 2021; *Anonymous*, 2021; Schiemer & Miho, 2021). There are also present negative effects caused in dammed rivers, i.e. by Drini cascade.

Reduction of the area of some important PAs: The Government considered few years ago the importance of reconciling environmental and biodiversity protection with the need to provide development opportunities for people living in PAs. Some DCMs, 59/2022, 60/2022 and 694/2022, and some others in the process, **reduced by 11% the area of Wetland PAs:** National Parks (II): Butrinti (Saranda), Dajti (Tirana), Lura-Deja (Peshkopi); Natural Parks (IV): Korab–Koritnik (Peshkopi), Kune–Vaini–Patoku–Fushekuqe–Ishmi (Lezha & Laçi), Shkodra Lake (Shkodra); Protected Landscapes (V): Pishe Poro–Narta (Fieri & Vlora); Buna-Velipoja (Shkodra); etc. It can be noted by the white spots, now not protected, in the PAs maps of the figure 5, approved by the National Territory Council (NTC) (Decision 10/2020). The areas left out of protection are now threatened by unfriendly economic activities, such as residential urbanization, especially mass tourism; tourist resorts and supporting infrastructure are in process or planned.

As such, these decisions affect the ecological integrity of each PA, especially the coastal wetlands, even with international protection; they fragment or cause loss of habitats and species, and threaten directly their core areas.

Soon after the DCM 59/2022 was approved, 800 ha in the Manastiri Bay, former part of Butrinti NP (Saranda) was transformed in a tourist resort. While with DCM 694/2022 the Pishe Poro-Narta Protected Landscape (Fieri & Vlora) was reduced by 5,551.7 ha; the previous status of the Pishe Poro Managed Nature Reserve (Fieri) (IVth Category) was decreased to Protected Landscape (Vth Category). Worth to mention, the whole area of Pishe Poro-Narta is an important part of the Vjosa/Aoos River Delta, recently declared as the Vjosa Wild River NP (DCM 155/2023), identified as the last free-flowing river in Europe, outside of Russia (ActaZooBotAustria, 2018; Schiemer *et al.*, 2020; Sovinc, 2021; etc.); Vjosa/Aoos River is a trans-boundary ecosystem between Greece and Albania. However, the Vjosa Delta was not considered in the zoning process of the Vjosa Wild River NP (MTE, 2022), even though it is an inseparable hydrodynamic and ecological part of the River (Miho *et al.*, 2024). On the contrary, the Vlora airport started to be built almost arbitrarily within the Pishe Poro-Narta PA (in November 2021) (*see* the large white rectangle in figure 5). And through the amendments made by Law 21/2024 on PAs (*see* below), the Vjosa Delta is endangered by the infrastructure development plans (POLITIKO, 2024; Pearce, 2024; Miho *et al.*, 2024; Harlan *et al.*, 2024), suggesting further challenges to its conservation and protection. Through the Recommendation 219/2023, the Bern Convention on the Conservation of European Wildlife and Natural Habitats asked Albanian government to stop construction works in protected Vjosa/Narta area. Despite that, the construction continues and the airport, expected to be ready by 2025.

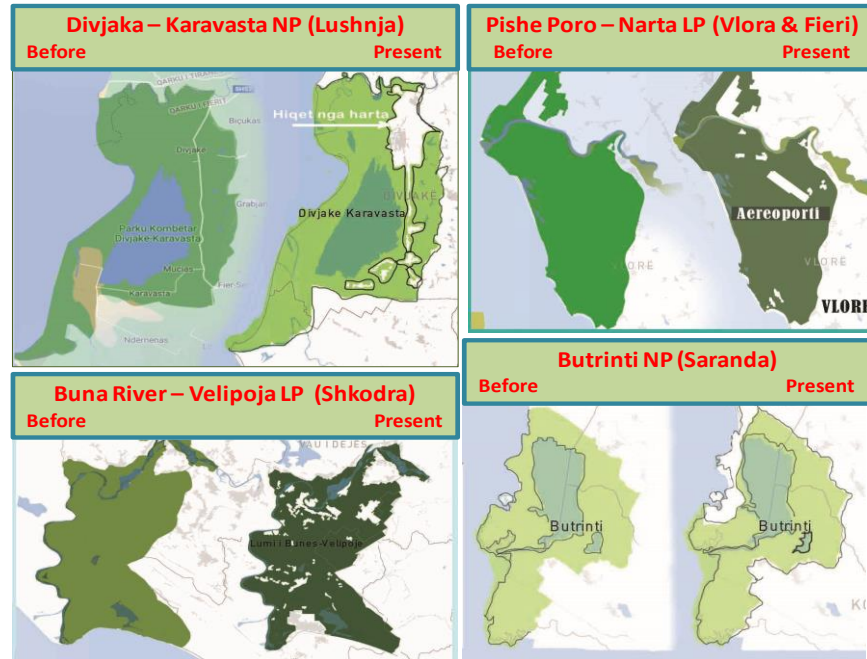


Figure 5. Revised borders and internal zoning of some PAs, zoomed from the map of the figure 2, based on Decision 10, December 28th, 2020 of the National Territory Council (Aurel, 2021).

Amendment of the Law 81/2017 on PAs: Lastly, Parliament, through the Law 21/2024 amended the Law 81/2017 on PAs. The Law 81/2017 allow environmentally friendly and environmentally sustainable activities within the development e recreational zones of PAs, such as non-intensive agriculture, recreational activities or similar. After the new amendments, PAs of all categories, even in their core areas can be developed for ‘*infrastructure and hospitality activities, with highest architectural and environmental standards for supporting tourism of excellence (with 5 stars) and the related infrastructure*’. Article 13 of the Law 81/2017 about PA zoning was cancelled (Article 6, the Law 21/2024), which conflicts with the most common protection requirements. The power of today's management institution, the National Agency of PAs (NAPA), was also weakened, and entrusted to the National Territory Council (NTC), a collegial body chaired by the Prime Minister. It clearly centralizes the protection process to an unprofessional body, contradicting with the mission of the Law 81/2017, but also the EU Directives and IUCN standards.

Law 21/2024 establishes for all the PA categories that the NTC, after specific requests for development/construction permits, approves the rules and technical criteria for the development of the allowed activities and the supporting infrastructure. Hence, it contradicts the main principle of the Law 81/2017 to 'provide special protection of the PAs and of their important components of biodiversity and nature'. Moreover, the Point 3 of Article 17 (Law 81/2017), was cancelled by the new amendments; it means that the Natural Monuments (NMs) are not surrounded by a buffer zone of up to 200 meters width from the perimeter of the Monument, letting them exposed by law to the infrastructure development.

All these recent developments towards the nature protection and especially the PAs have raised the concern of many environmental organizations in the country and region, many environmentalists and environmental experts. Since the hearing process, the EU Delegation in Tirana expressed concern about planned changes to the law on PAs (Gjoka, 2024) and also in the Annual Report for Albania, Chapter 27 (SWD, 2024), towards the protection of biodiversity, as it may allow large tourism and industrial investments in the protected areas. Worth noting that all the unfriendly mentioned changes are not in accordance with the requirements and obligations for the protection of nature, sanctioned in the Albanian and international legal acts. This approach is against the quality of life for the living world and for man himself, decreasing the economic and especially touristic values as well.

Tourism industry, development and environment: Tourism is one of the fastest-growing industries in Albania, with significant contribution in its global GDP. The economic growth is mostly based on tourism and real estate. More than 10 million tourists visited Albania in year 2023, and foreseen to be more in 2024. After UN Tourism data,

the tourism contributed to economic growth of nearly 5% growth in 2022. As of 2023, the GDP reached USD 23 billion compared to USD 12.3 billion in 2012. International tourism constitutes 46% of total exports and 65% of exports in the services sector (UN Tourism, 2024).

The World Tourism Organization (UNWTO) highlights tourism as one of the fastest-growing industries, contributing more than 10% to the global GDP (Baloch *et al.*, 2023).

However, this **rapid growth in tourism has been accompanied by environmental pollution witnessed in various regions around the globe, as well in Albania** (i.e. IntelliNews, 2024). A substantial, large-scale tourism industry inevitably brings both positive economic benefits, such as employment opportunities and increased wealth, as well as environmental impacts. These impacts can manifest as air emissions, noise pollution, solid waste, littering, sewage discharge, oil and chemical pollution, architectural and visual degradation, increased energy consumption, and heightened vehicle use, among others. Tourism is recognized as a threat to deforestation, air and water pollution, and poses risks to biodiversity and ecosystem resilience (Azam *et al.*, 2018; Baloch *et al.*, 2023; Sun *et al.*, 2021; etc.).

Therefore, there is an urgent need to increase the awareness regarding the environmental consequences of quick mass tourism development in Albania. Striking a balance between business interests and environmental conservation is imperative for maintaining the integrity of the ecological systems, especially in PAs. Instead, experts advocate for **the wise development of nature-based tourism (ecotourism) projects**, supported by government policies to ensure effective conservation of environmental and natural resources. All would be possible, the combination of family tourism, agro-tourism, cultural & heritage tourism, culinary tourism, hiking & nature tourism, etc., instead of the large-scale bathing tourism of the present days.

CONCLUSIONS

What can be suggested?

- The friendly coexistence of man and nature should be an everlasting challenge for Albania, a priority in all economic sectors, tourism, energetic (hydro-, sun-, thermo-), agriculture and livestock, forestry and aquaculture, etc. **The harmonization of environmental protection policies and economic development with EU legislation and standards** is strongly emphasized by experts of academia, environmentalists and EU institutions. More strongly it should be towards the present attitude towards the development of PAs. Be in line with EU directives and other international standards would be a long-term guaranty for the better quality of life for the living world and for man himself, and also to better conserve the economic and touristic values.
- Renowned experts we work together in years towards assessment of the natural values and conservation of the Vjosa River and its tributaries, often stress that **the management decisions should be evidence-based**. They strongly suggest establishing a **long-term interactive platform between scientists (local and international)** where science can '*speak to*' policy and decision makers, authorities, stakeholders, practitioners, etc. (i.e. ActaZooBotAustria, 2018; WRSS, 2019; Schiemer *et al.*, 2020; 2021; Schiemer, 2024; Miho, 2023). It would help to find acceptable and develop sustainable solutions. Moreover, the science and democracy go together (i.e. KNAW, 2014); **the more policymakers let science '*speak to*' them in important decision-making, the healthier democracy will likely be**.
- Here the education, especially **higher education, is a key driving factor for economic growth**. The science quality, the academic performance, would condition greatly and directly the quality of decision- and policy-making institutions mentioned above, but also the quality of investing companies, the quality of projects, their implementation, and the working performance afterwards. Serious vision and efforts are needed to support capacity building and strengthen the professional knowledge, not only in universities, but also in other research institutions and responsible bodies (MTM, NEA, NAPA, etc.), with proper space, logistic means, qualified and wellmotivated staff, and promoted after their performance. On the other side, building up an integrated and more applied research should be a priority for the scientific community, **focused in socio-ecological aspects**, facing properly with the urgent needs rising from the economic development (i.e. ActaZooBotAustria, 2018; Schiemer *et al.*, 2020; Miho, 2023). Only in this way Albania will face properly with the existing evident environmental problems and correct the present attitude.

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