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Legal regulation of the use of forest resources

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Abstract. The purpose of the study was to carry out a comprehensive analysis of the legislative framework in the field of forest resource management in Albania in the context of forest ecology, and species diversity, and to identify the main problems and prospects for sustainable development of the country's forestry. The research methodology included the analysis of statistical data from the National Institute of Statistics of Albania on the structure of forest ecosystems and forms of their management. The results of studies conducted by international organizations such as the World Bank, Global Environment Facility, and Oikon d.o.o. were also used. The structure and composition of Albania's forest resources, including those of natural and semi-natural origin, are analysed. The legal framework in the field of forest management in Albania is summarized. Different management structures for forestry land are characterized, with the identification of the specifics of use for different forms of ownership. The main problems of forest management are identified, including intensive exploitation of private forests, lack of subsidies and investments, as well as imperfect legislative regulation. Adaptation measures to increase the sustainability of Albania's forests within the framework of the Albanian Forest Policy Document for the period 2019-2030 are substantiated. Strategic areas of development, such as the expansion of protected areas, the development of ecotourism and the attraction of green investments, are proposed. The study also emphasizes the importance of international cooperation for financial and technical support, which will facilitate the implementation of sustainable forest management practices and biodiversity conservation. The practical significance of the study is that these results can be used to develop strategic directions for the development of the forest sector in Albania, aimed at ensuring sustainable management and conservation of forest resources, which is a key factor for the country's economic and environmental well-being

Keywords: integrated management; ecosystem services of forests; legislative framework for nature protection; agroforestry; biodiversity protection

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Introduction

Forest resources are one of Albania's key natural assets and play an important role in the country's environmental and economic development. The diversity of the forests is due to climatic conditions that range from Mediterranean in the coastal lowlands to continental in the highlands and contribute to the presence of more than one hundred species of trees, such as beech, oak, fir, spruce, pine, as well as acacia, poplar, maple, willow, chestnut, walnut, and fruit trees. Despite this diversity, Albania has become one of the few European countries where, since the 2000s and over the next 20 years, approximately 100 thousand ha of forest have been lost to intensive logging, landslides, soil erosion, overgrazing and firewood collection. These processes exceed the natural annual growth rate of forests, leading to a reduction in timber stocks and a deterioration in timber quality. Economic constraints also make it difficult to access a large part of the forests (AGT International, n.d.).

Albanian forests are under pressure from increasing demand for land-based products and services, leading to their conversion or degradation to unsustainable land uses. The loss or severe degradation of forests reduces their ability to perform important ecological functions such as regulating the water cycle, providing safe drinking water, producing biomass and controlling water erosion. This increases flood risks, reduces soil fertility and contributes to biodiversity loss, making the supply of forest goods and services unstable (Petrovic, 2023). The legal regulation of the use of forest resources in Albania includes numerous challenges that need to be addressed to ensure effective forest management and sustainable use. Despite the existing legislative framework aimed at protecting and preserving forest resources, its implementation in practice remains insufficiently effective. The main problem is that the

legal framework is outdated and incomplete, and does not take into account modern international standards and best practices in forest management.

Another important aspect is the insufficient integration of environmental issues into the legal system governing forest use. Environmental aspects, such as biodiversity conservation and climate change mitigation, are often overlooked by legislators. Prior to the creation of the Albanian nation-state in 1912, both the rural population and the local elite actively exploited forests without due attention to their restoration, as A.R. Hoxha (2018) indicates. In the interwar period, the Tirana governments tried to control the population's access to forest resources. After the communists came to power, the problems only worsened due to excessive deforestation for industrialization and the inability to stop misuse. In the first decade after the fall of communism in 1991, Albania had the highest percentage of illegal logging in Eastern Europe. This situation shows that problems with legal mechanisms for sustainable forest management have existed in the country for more than 30 years.

Since the 2000s, the Albanian government has been trying to implement effective forest management programmes, which include a number of measures aimed at strengthening the overall management of forests and rangelands. D. Suli *et al.* (2020) substantiate in their work the peculiarities of improving the methods of managing forest resources and protected areas. The authors note that an important aspect of forestry sector development programmes is to support local communities in benefiting from forest resources, which contributes to poverty reduction. G. Fanelli *et al.* (2020) emphasize in their works the fact that although mesophilic forests of Albania, in particular *Fagus sylvatica* forests and *Corylus avellana* foothill forests, are

important ecosystems, they remain little known and have not been included in the latest syn-taxonomic revisions at the European level. This situation calls for the development of special legal mechanisms that would ensure the protection of different types of forests in accordance with their ecological characteristics and needs.

It is worth noting the significant potential of the Teti National Park for the development of geotourism, in particular the recognition and promotion of geosites such as canyons, waterfalls, glacial lakes and karst caves, as noted by M. Dollma (2019). To achieve this goal, it is important to introduce effective legal mechanisms that would ensure the preservation of natural landscapes, avoid overexploitation of forest resources, and support the development of infrastructure that meets environmental standards. At the same time, F. Pazari & M. Dollma (2019) mentioned in their research web-based geographic information systems (GIS) applications to inform tourists and local residents about the availability of forest resources in the Zall Gjoçaj Park. In the authors' opinion, it is crucial to ensure legal regulation of access to public information in order to preserve their ecological condition and avoid excessive tourist pressure on these forests. The importance of local ecological knowledge (LEK) for the monitoring and management of useful medicinal plant species in Prespa National Park in Albania remains important. S. Tomasini & I. Theilade (2019) note that from the point of view of legal regulation of forest management, it is important to develop a legal framework that would integrate LEK into official programmes of monitoring and management of forest resources.

The purpose of the study is to substantiate the legal aspects of forestry regulation in Albania, with a focus on creating incentives for sustainable use of forest resources and integration of environmental components into the

country's legal system. To achieve the study's objective, several tasks were performed, in particular: analysis of Albania's forest resources, their classification, environmental status, as well as justification of the system of monitoring and evaluation of the effectiveness of implemented measures to ensure sustainable forest use; detailed analysis of the current legal framework and regulations governing forest use, identification of gaps and shortcomings in the legislation; development of proposals for legal and economic mechanisms to stimulate sustainable forest use, taking into account the needs of local communities.

Materials and Methods

In order to achieve the research objective, various sources were used, which allowed for a comprehensive analysis of various aspects of forestry, the ratio of different types of natural forests in Albania, including legislation, forms of management, governance, as well as environmental, social and economic factors affecting the state of forest resources. In particular, we used the reports of the National Agency for Protected Areas (NAPA) (AGT International, n.d.), the National Institute of Statistics of Albania (2022), reports of international organizations such as the World Bank (n.d.), the Ministry of Tourism and Environment (2023), as well as statistical reports of local governments and scientific institutions.

The content analysis of legislative documents was used to identify the main problems of using Albania's privately owned forest resources. Legislative acts regulating forest management were analysed, with a particular focus on legislative changes and their impact on local communities. New legislative initiatives, such as the transfer of ownership of forest areas to local communities, were studied to determine how they have affected forest con-

servation and productivity. The study focused on the analysis of changes in the legal framework governing forestry in Albania, in particular Law of the Republic of Albania No. 57/2020 “On Forests” (2020) and Law of the Republic of Albania No. 5/2016 “On the Moratorium on Commercial Forestry Activities in the Republic of Albania” (2016). The study analysed the impact of these legislative acts on forest management, the effectiveness of their implementation and the implications for the sustainable development of the forest sector. The study also included a comparison of current legislative norms with international standards, such as the European Green Deal (2019) and the Regulation of the European Parliament and of the Council No. 2018/841 “On the Inclusion of Greenhouse Gas Emissions and removals from Land Use, Land Use Change and Forestry in the 2030 Climate and Energy Framework” (2018).

The study was carried out in the context of Albania’s regional characteristics, including both urban and rural areas, and took into account the different forms of forest management, including state, communal and private management. The analysis of the forest ownership structure in Albania in terms of percentage and distribution of the total area of forests and pastures by management type was carried out on the basis of statistical analysis. The collected data were subjected to quantitative analysis to identify the main trends and structural changes in forest ownership.

Monitoring of the environmental impacts of forest management was carried out based on the results of remote sensing using topographic maps of the area and satellite images. These geoinformation tools provided accurate data on the ecological state of forest resources, their environmental impact, and the specifics of biodiversity conservation, water cycle regulation, and soil protection. A socio-economic analysis was conducted to summarize the impact of for-

estry on local livelihoods, including the impact of forestry on the economic activities and welfare of local communities, especially in rural areas where forest management is integrated with agroforestry systems.

The classification analysis was applied to justify a separate classification of Albania’s forest resources, which includes several main categories in terms of current legal issues and forest ecology. This allowed systematizing forest resources according to different criteria, including legal status, environmental characteristics and management forms. In the course of the study, adaptation measures to increase the sustainability of Albania’s forests were specified within the framework of the Albanian Forest Policy Document (2018). In particular, the main problems and challenges of legal regulation of forest use in Albania are summarized.

Results

Albania’s forest ecosystems are characterized by significant species diversity, which depends on altitude and distance from the coast. Most of Albania’s forest ecosystems have structures typical of Southeast European countries, with numerous deciduous forests (Fig. 1).

According to the Institute of Statistics Albania (2022), about 83% of forests consist of semi-natural plantations that have emerged as a result of natural regeneration (Fig. 2).

Forest management practices in Albania include both traditional and newer approaches aimed at ensuring the sustainability and productivity of forests and rangelands. Traditionally, forest management in Albania has been centralized, with control exercised by state authorities. Integrated forest and rangeland management plans developed for several municipalities in Albania are also an important component of modern forest management. These plans take into account economic, social and environmental aspects, and

their implementation involves the active participation of local residents and the enhancement of their capacity to manage natural

resources. In particular, Table 1 presents data on the area of forests and pastures in Albania by different forms of management.

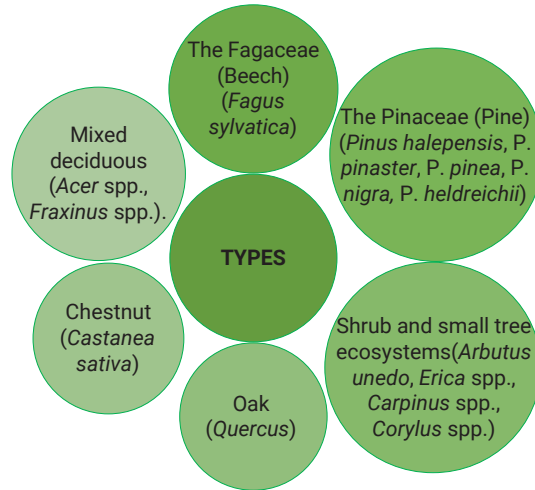


Figure 1. Main types of forest ecosystems in Albania

Source: developed by the author based on AGT International (n.d.)

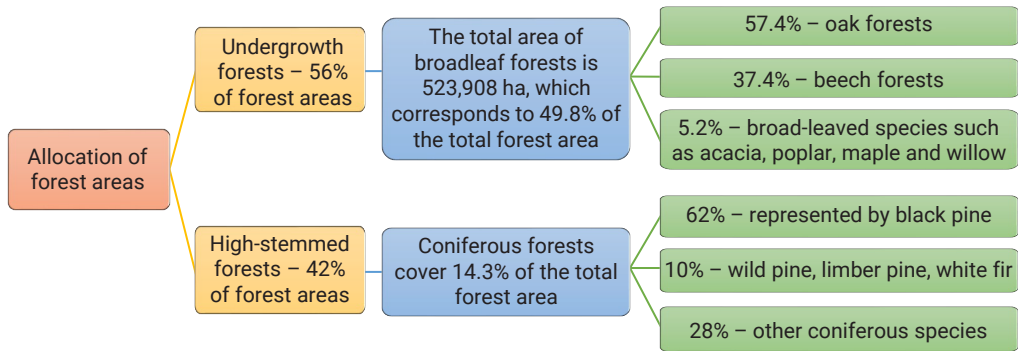


Figure 2. Percentage of different types of natural forests in Albania

Source: developed by the author based on Institute of Statistics Albania (2022)

Table 1. Distribution of the total area of forests and pastures in Albania by management type

Form of business	Area (ha)	Area (%)
Total area of forests and pastures	1,703,545.87	100%
Forests, of them	1,197,258.41	70.28% of the total area
High forests	387,941.44	22.77% of the total area, 32% of the forest area
Undergrowth forests	552,989.03	32.46% of the total area, 46% of the forest area
Shrubs	256,327.93	15.05% of the total area, 21% of the forest area

Table 1, Continued

Form of business	Area (ha)	Area (%)
Pastures, of course	506,287.47	29.72% of the total area
Summer pastures	294,007.61	17.26% of the total area, 58% of the pasture area
Winter pastures	181,499.28	10.65% of the total area, 36% of the pasture area
Secondary pastures	30,780.58	1.81% of the total area, 6% of the pasture area

Source: developed by the author based on Institute of Statistics Albania (2022)

Thus, most of the country's territory is covered by forests, of which the largest share is made up of primary forests. Pastures cover a smaller part of the territory, with summer pastures accounting for the largest part of this area (58%). Forestry, pasture, and crop production are the main land uses in rural Albania. In this area, it is common practice for local people to manage both agricultural and forest resources within agroforestry systems, where crops, trees, and livestock are integrated into a single management system. The legal regulation of the use of forest resources in Albania is aimed at ensuring the sustainability and efficiency of such systems. Land use change remains one of the main challenges affecting forestry and rural development. Legal regulation in this context is important for stable and efficient land management, taking into account demographic and migration trends, as well as economic development in rural areas. Legislative initiatives are aimed at ensuring that changes in land use do not harm the preservation and maintenance of land productivity, but also contribute to the provision of ecosystem services and the maintenance of social structures, traditional knowledge and practices. The development of agroforestry requires a clear identification of potential areas for its

implementation and appropriate legal regulation. In Albania, there is positive experience in developing agroforestry systems on agricultural land, for example, in Korca, where some private individuals plant fast-growing trees on agricultural land. This not only increases land productivity, but also integrates forestry with other forms of land use, which is an important component of sustainable rural development. The legal regulation of the use of forest resources in Albania also includes support from international organizations and government programmes that promote a participatory approach to forest and rangeland management. For example, projects supported by the World Bank (n.d.) promote the transfer of forest management rights to local communities, which increases their responsibility and involvement in forest conservation and restoration.

The current structure of forest land and ownership in Albania has been shaped by the significant political and historical events that the country has experienced. Until 1990, all forests and pastures were state-owned (Forest Policy Document..., 2018). However, after the political, economic and social changes of the 1990s, three forms of ownership were introduced: state, communal and private (Table 2).

Table 2. Changes in the structure of forest land ownership

Property type	Description
State	Forests and pastures owned by the state before the reforms of the 1990s
Communal	Forests and pastures transferred to local communities after the reforms of the 1990s
Private	Forests and pastures that became private property after the reforms of the 1990s
Municipal	Forests and pastures that became private property after the reforms of the 1990s

Source: developed by the author based on Forest Policy Document in Albania – 2030 (2018)

Between 2009 and 2024, one of the most significant policy decisions in the forestry sector was the transfer of ownership of forest areas from the state to local governments. The newly created function of forestry services in 2016 assigned municipalities ownership of forests and pastures located in their administrative territory. This has strengthened local management

of forest resources, ensuring greater responsibility and participation of local communities in their conservation and restoration. The results of the forest land transfer policy have changed the ownership structure in Albania, turning municipalities into the main owners of forests and pastures located in their administrative territories (Fig. 3).

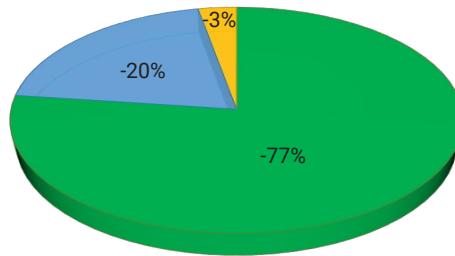


Figure 3. Forest ownership structure in Albania

Source: developed by the author based on Forest Policy Document in Albania – 2030 (2018)

The structure in Figure 3 reflects the result of political and economic reforms that have taken place in the country, as well as the process of transferring ownership of forest areas from the state to local governments and private owners. The vast majority of forest land in Albania is state-owned. The share of private forests is only 3%, and this area has remained stable at 28,780 ha since 2014. Public forests are mostly (77%) managed by municipalities, except for protected areas (20%), which are controlled by the National Agency for Protected Areas (NAPA) (Petrovic, 2023). Private forests are mainly owned by individuals and, in some cases, institutions. NAPA, established in 2015, is responsible for managing protected areas and natural resources within them. Forests within protected areas are not transferred to municipalities and are the responsibility of NAPA, which also provides advisory services to support municipalities in managing forest resources. At the local level, NAPA is organized into 12 regional protected area administrations, each

of which is responsible for managing protected areas in their respective region.

Privatization of the forestry sector in Albania is not allowed, as it is considered strategically important, including shrubbery and degraded forests. According to the current legislation, only those forests that were privately owned before the establishment of the communist regime in 1944 are subject to restitution, and only up to 100 ha for each former owner. This is the main reason why private forests account for only 3% of the total forest area in Albania (AGT International, n.d.). The main goals of associations of private forest owners are to meet their needs and interests, assist in the management of private forests, protect forests and the environment, increase the tourist and recreational value of forests, and disseminate information materials. Although the area of private forests is very small, they have been intensively exploited in recent years (Table 3). Owners try to maximize profits without considering the long-term prospects for their forests.

Table 3. Main problems of Albania’s privately owned forest resources

Problem	Characteristics
Intensive use	Owners seek to maximize profits without considering long-term prospects
No subsidies	Absence of incentives for responsible management of private forests
Imperfect legislative regulation	Lack of clear legal regulations on the management of private forests
Lack of technical manuals	Absence of available manuals on technical aspects of forestry
Insufficient investment flows	Lack of investment in private forests, which hinders their development
Illegal logging	Illegal exploitation and deforestation are serious problems
Conflicts over property rights	Conflicts often arise due to bureaucratic and corrupt obstacles in the registration of property rights
Forest degradation	Irregular management leads to forest degradation, reduced income and increased frequency of fires

Source: developed by the author based on AGT International (n.d.)

The analysis highlights the need to improve the management of forest resources, especially private forests, to ensure their sustainable development and the conservation of ecosystem services. Albania’s forests are among the areas in Europe that require significant improvements in natural resource management. According to the new forest policy, since 2016, municipalities have become the owners of forests and are solely responsible for their management. However, a significant number of municipal forestries are not provided with the necessary office space and qualified staff, which negatively affects the effective management of these resources. Insufficient technical capacity and staff shortages make it difficult to carry out important functions such as national forest policy development, national reporting and monitoring. Although municipalities own forest and pasture resources, these functions still require centralized management at the national level. It is also important that municipalities do not have the authority to levy fines for violations in the forestry sector, which remains the responsibility of the relevant ministry. Fire protection is a new function of local governments that was decentralized without prior analysis of local capacities to perform this function. In terms of modern legal issues and forest ecology in

Albania, a separate classification of forest resources can be distinguished, which includes several main categories:

- ◆ natural forests. Albania’s natural forests cover a variety of ecosystems that have experienced minimal human intervention. They are important for the conservation of biodiversity and the provision of ecosystem services. Efforts to conserve and restore such forests are a priority of the state policy (World Bank, n.d.);

- ◆ degraded forests. Large areas of forests in Albania are characterized by high levels of degradation due to illegal logging, overuse for fuelwood and uncontrolled grazing. Restoring these forests is a key objective for the government and international projects. For example, the Albania Natural Resource Development Project supports the rehabilitation of degraded areas through the introduction of sustainable management practices;

- ◆ protected areas. Forests that are part of national protected areas are managed by the NAPA. These areas contribute to the conservation of biodiversity and the development of ecotourism. Protecting and maintaining such areas is an important aspect of Albania’s environmental policy;

- ◆ community forests. Communal forests are managed by local communities, which has proven to be effective in ensuring sustainable

management and restoration of forests. Studies have shown that reforestation is 2-3 times more effective when managed by local users rather than by government agencies. This approach has been supported by the World Bank and other international organizations.

Thus, the key factors affecting forests are largely related to anthropogenic activities, including land use, landscape fragmentation, pollution, nutrient inputs, changes in soil chemistry, suppression of natural fires, changes in herbivore populations, species loss, invasive alien species, and climate change. Legislative regulation in the context of forest ecology should take these factors into account to ensure sustainable management and conservation of forest resources. Climate change, in particular, can reduce forest productivity by increasing summer temperatures and decreasing precipitation, which increases the risk of forest fires. This requires the creation of legislation that will facilitate effective fire risk management and adaptation of forest ecosystems to new climate conditions.

Albania's forests provide numerous ecosystem services that are vital to the country's environmental and economic sustainability. One of the key services is the regulation of the water cycle. Forests help to reduce soil erosion, maintain water quality and regulate water flow, which is important for flood prevention and sustainable water supply. As a result, forest ecosystems play a critical role in maintaining the hydrological balance, especially in the mountainous regions of Albania, where soil erosion is a significant problem (Forest Policy Document..., 2018). Carbon storage is another important ecosystem service of Albanian forests. Forests absorb and store significant amounts of carbon dioxide, which helps to mitigate the effects of climate change. This carbon sequestration capacity of forests contributes to the reduction of greenhouse gas concentrations in

the atmosphere, thereby reducing global warming (World Bank, n.d.). Forests also provide important recreational and cultural services. They provide opportunities for tourism, recreation and cultural activities that are important to the spiritual and cultural life of local communities. Ecotourism, in particular, is becoming an increasingly important source of income for many regions, contributing to economic development and improving the quality of life. In addition, Albania's forests support agroforestry by integrating trees and shrubs into agricultural systems. This increases land productivity, improves biodiversity and reduces environmental risks. Soil protection is an important part of this ecosystem service, as tree roots help prevent erosion and maintain soil fertility (Law of the Republic..., 2017).

The forest sector in Albania is regulated by a number of laws covering various aspects of forest management. These legislative acts provide comprehensive regulation of forestry, nature protection and biodiversity, contributing to the sustainable development and conservation of Albania's natural resources. The main legislative act is Law of the Republic of Albania No. 57/2020 (2020), which aims to protect forests as an important resource, given their irreplaceable value for climate protection, soil protection, preservation, and improvement of productive potential, natural ecological balance, biodiversity, genetic resources and water regime. This law is in line with national and international commitments and contributes to the sustainable development of the forest sector, ensuring a better life for modern society and future generations. It regulates relations in the forestry sector that have a significant impact on the quality of the natural environment, agricultural development, energy, tourism, poverty reduction, population displacement, conflict mitigation, social and gender inequality, and national security.

Law of the Republic of Albania No. 5/2016 (2016) was introduced to reduce interventions in forests degraded by overexploitation and other damage, with the aim of improving and restoring their condition. This law is valid for 10 years from the date of its entry into force. In addition to these laws, the forestry sector and nature protection in Albania are regulated by additional legislation:

◆ Law of the Republic of Albania No. 81/2017 (2017) aims to proclaim, preserve and manage the sustainable use of protected areas and their natural and biological resources;

◆ Law of the Republic of Albania No. 139/2015 (2015) defines the functions of municipalities in the field of forest and pasture management;

◆ Criminal Code of the Republic of Albania (1995) contains provisions on crimes against forests, which are classified as crimes against the environment;

◆ Law of the Republic of Albania No. 10431 “On Environment Protection” (2011) aims to providing a high-level protection for the environment, its preservation and improvement;

◆ Law of the Republic of Albania No. 9587 “On Biodiversity Protection” (2006) aims at preserving and protecting biological diversity by regulating the sustainable use of its elements;

◆ Law of the Republic of Albania No. 10006 “On Wild Fauna Protection” (2008) is protect, manage and control wild fauna with a view to ensuring the conservation of species, populations and their habitats;

◆ Law of the Republic of Albania No. 10120 “On the Protection of Natural Medicinal, Ether Oil and Tanifer Plants” (2009) aims at protecting medicinal and ether oil plants. It sets out the conditions governing their collection and harvest and further promotes activities aimed at their cultivation and rehabilitation.

Direct powers in the field of forestry are at the municipal level. Institutions at this level are responsible for implementing forest policy and

enforcing legislation. The effectiveness of individual municipalities varies considerably, depending on their administrative and economic capacity and the state of their forest resources. Important stakeholders are the Forest and Pasture User Associations (FPUAs) (Ministry of Tourism and Environment, 2023) established in each municipality to assist in the management of forests and pastures, and to assist municipalities in ensuring the management of forest areas within their administrative boundaries. FPUAs are organized at the local level and coordinate forest management activities at the village level. They are also represented at the regional level in the form of the Regional Federation of Forests and Pastures, which is part of the National Federation of Forests and Pastures. These are non-profit organizations representing the interests of all forest and rangeland users in Albania.

Connecting Natural Values and People (CNVP) is another important partner for forest development in Albania. The organization works with public, private, and donor organizations using evidence-based analysis to improve the sustainable livelihoods of rural communities. CNVP’s activities cover six main areas: sustainable forest management, climate change, environment and natural resources management, agricultural development, renewable energy and waste management. The Forest Policy Document in Albania (2018) defines four strategic directions for the future development of the country’s forest sector:

1. Good governance, which involves positioning forests as one of the government’s top priorities and raising awareness of their importance. The importance of forests is recognized at the national level, which promotes their protection and sustainable use.

2. Functional organization, which involves establishing and strengthening an effective organizational system from the central level to the

most remote villages based on best standards and practices. This ensures proper management and use of forest resources at the local level.

3. Sustainable extraction, which includes the use of forest resources on a sustainable basis and their balanced multiple use. This involves the economically efficient and environmentally sound use of forests, which contrib-

utes to the conservation of biodiversity and the improvement of the ecological state (Table 4).

4. Defining the provision of quality services aimed at improving the protection, quality, and use of forests. This includes improving the quality of forest management and the use of fast-growing species to improve the economic efficiency of the forest sector.

Table 4. Adaptation measures to increase the resilience of Albania's forests within the framework of the Albanian Forest Policy Document for the period 2019-2030

Tool	Description
Research programmes	Forest management based on genetic research, adaptation to climate change
Assessment of forest condition	Analysis of the current state of forests in the context of climate change
Expansion of protected areas	Increase in the area of protected forests for biodiversity conservation
Reducing illegal logging	Reducing illegal deforestation, assessing firewood needs
Increasing forest productivity	Rehabilitation of degraded forests, transformation into high-stemmed forests, planting of new species
Reforestation programme	Increase in forest area by planting new trees

Source: developed by the author based on Forest Policy Document in Albania – 2030 (2018)

The European Green Deal (2019) provides for a set of policy initiatives aimed at sustainable land use and rural resource management, which can have a significant impact on climate change mitigation. In accordance with these initiatives, Albania should adapt its regulations to the requirements of the European Green Deal (2019), in particular with regard to the sustainable use of forest resources. Legal regulation in this area should ensure environmental sustainability, economic viability, and social support for rural communities, which are important aspects for achieving climate goals. The Regulation of the European Parliament and of the Council No. 2018/841 “On the Inclusion of Greenhouse Gas Emissions and removals from Land Use, Land Use Change and Forestry in the 2030 Climate and Energy Framework” (2018) establishes new rules for accounting for emissions and removals in this sector. In order to meet these requirements, Albania needs to develop legal mechanisms that take

into account the specifics of its forestry sector. In particular, this includes the introduction of criteria to assess compliance with greenhouse gas emissions and removals, which is critical for the land sector's contribution to climate change mitigation goals.

Forestry plays a key role in achieving the goal of zero net greenhouse gas emissions by 2050, mainly by reducing emissions and increasing carbon sequestration. The legal framework in Albania should promote sustainable forest management that recognizes the importance of forests as carbon sinks. It is important that legislation ensures the conservation and protection of forest resources from overexploitation and various threats, both biotic and abiotic. Thus, the legal regulation of the use of forest resources in Albania should be aimed at supporting and implementing the principles of sustainable development, integrating the requirements of the European Green Deal and introducing mechanisms

for assessing and controlling greenhouse gas emissions. This will contribute to the conservation of biodiversity, improve environmental sustainability and support the economic viability of rural areas. It is essential to note that forestry in Albania plays an important role in

the country's economy, providing raw materials for industry and important ecosystem services. However, the legal regulation of forest management faces numerous challenges that affect the efficiency of forest management and sustainable use (Table 5).

Table 5. Main problems and challenges of legal regulation of forest use in Albania

Problem	Characteristics
Outdated legal framework	Laws are not adapted to modern international standards, do not integrate environmental and social aspects
Illegal logging	Lack of effective control and monitoring, insufficient funding
Institutional challenges	Limited capacity of government agencies, lack of qualified personnel, modern technology and funding
Lack of community participation	Limited participation of local communities in decision-making, which reduces the effectiveness of forest protection measures
Challenges of international obligations	Difficulty in implementing international agreements due to domestic legal and institutional problems, lack of coordination by the government

Source: developed by the author

Forestry is an important component of Albania's economy, providing raw materials for industry and performing key ecosystem functions such as biodiversity conservation, climate regulation and soil protection. However, forest governance in the country faces numerous

challenges, including a weak legal framework, widespread illegal logging, institutional weaknesses, and limited local community participation. These factors significantly hamper effective and sustainable forest management and require improvement measures (Table 6).

Table 6. Proposals and strategic directions for improving the legal regulation of the forestry sector in Albania

I	
Suggestions for improving legislation and governance	Description
Updating and harmonizing legislation	Improving licensing mechanisms, introducing strict sanctions, integrating environmental and social aspects
Improving the effectiveness of law enforcement	Strengthening control, increasing funding, using modern technologies, training staff
Involvement of local communities	Establishment of local forest associations, training programmes, awareness raising
II	
Strategic directions for the development of the forestry sector	Description
Development of ecotourism	Creation of tourist routes, recreational areas, and educational programmes for tourists
Green investments	Restoration of degraded land, reforestation, implementation of sustainable practices, and attraction of private investment
Expansion of protected areas	Expanding the network of national parks and nature reserves, supported by international funding and technical assistance programmes

Table 6, Continued

III	
The role of international cooperation	Description
Financial support	Assistance from the World Bank, EU, UN Environment Programme, Instrument for Pre-Accession Assistance (IPA23)*
Technical assistance and exchange of experience	Training programmes, technical seminars, consultations
Joint research projects	Research on the impact of climate change, development of reforestation methods, rehabilitation of degraded land

Note: Instrument for Pre-Accession Assistance (IPA23) is a financial assistance programme established by the European Union to support the Western Balkan countries, including Albania, on their path to EU membership
Source: developed by the author based on E. Serrano-Ramírez *et al.* (2021), C. Basnou *et al.* (2020), J. Naime *et al.* (2020), N.B. Olén *et al.* (2021), Instrument for Pre-Accession Assistance (n.d.)

The legal framework governing forest management in Albania needs to be significantly updated and harmonized with European standards. Existing laws often do not meet modern requirements for sustainable forest management, resulting in insufficient protection against illegal logging and other damage. In particular, the lack of integration of environmental and social aspects into forest management processes threatens the long-term sustainability of forest ecosystems. To overcome these challenges, it is important to increase the effectiveness of law enforcement, ensure proper control and monitoring of forest resources, and involve local communities in forest management processes. The introduction of modern technologies, such as remote sensing and the use of drones, can significantly improve the monitoring and management of forest resources. In addition, the establishment of local forest associations and training programmes will help to raise awareness among local residents about the importance of forest conservation. Effective legal regulation and management of forest resources are key to ensuring the sustainable development of the forest sector in Albania. Developing ecotourism, attracting green investments and expanding protected areas are strategic areas that can contribute to this goal. International cooperation, including financial and technical assistance, plays an important

role in supporting Albania's efforts to protect forests and implement sustainable forest management practices.

Discussion

The results of the study indicate the importance of implementing measures to improve the principles of legislation and management of forest resources in Albania in the context of updating and harmonizing existing legislation. In particular, improving licensing mechanisms, introducing strict sanctions for violations, and integrating environmental and social aspects into legal norms will contribute to more efficient and sustainable use of forests. Improving the effectiveness of law enforcement includes strengthening control over compliance with forestry legislation, increasing funding for the relevant authorities, using modern monitoring and management technologies, and training staff to improve their competence.

The strategic directions for the development of the forestry sector in Albania include the development of ecotourism, attraction of green investments and expansion of protected areas. The development of ecotourism includes the creation of tourist routes, recreational areas and educational programmes for tourists, which will help raise awareness of the importance of forest conservation and its ecological value. Green investments include restoration

of degraded land, reforestation, and implementation of sustainable forest management practices, as well as attracting private investment. Expanding the network of national parks and reserves with the support of international funding and technical assistance programmes will help to preserve biodiversity and the ecological sustainability of forest ecosystems.

International cooperation plays a pivotal role in the implementation of strategic initiatives in the forest sector in Albania. Financial support from the World Bank, the European Union, the United Nations Environment Programme and other programmes such as IPA23 is critical for the implementation of large-scale projects. Technical assistance and exchange of experience through training programmes, technical seminars and consultations will help to improve the professional level of specialists. Joint research projects, including studies on climate change impacts, development of reforestation methods and rehabilitation of degraded land, are essential to achieve the long-term sustainability goals of the forest sector.

The legal framework for the use of forest resources in Albania requires further improvements to ensure sustainable development and the conservation of ecosystem services. Stakeholder involvement, provision of necessary infrastructure and qualified personnel, as well as a differentiated approach to forest management are key aspects that can contribute to effective forest management in the country. This aspect is confirmed by the study of D. Pérez-Sánchez *et al.* (2021), who note that effective forest management requires clear and fair conditions of use that take into account both environmental and social aspects. The study found that formalization of forest rights in Albania often leads to conflicts and misappropriation of common property. Formalization does not always guarantee transparency and security for owners, but rather creates new

vulnerabilities and uncertainties in legal documents, which facilitates the misappropriation of common property. In particular, S. Voicu & M. Vasile (2022) study the process of formalizing communal rights to use forest resources in the Romanian Carpathians and identify similar problems with conflicts and misappropriation of common property.

Forest management usually requires the involvement of various stakeholders, including government agencies, tourism promoters and private actors. This helps to reduce conflicts and increase public acceptance of decisions. M. Crivellaro *et al.* (2020) also emphasize the importance of involving stakeholders in forest management to reduce conflicts and increase public acceptance of decisions. The study also found that a differentiated approach that takes into account different categories of forests and forms of ownership is needed to achieve policy goals and effective forest management. A similar statement is present in the works of G. Weiss *et al.* (2019). The authors consider the impact of different categories of forests and forms of ownership on forest management, emphasizing the need for a differentiated approach. An important aspect for Albania is the implementation of local government initiatives and legislative measures aimed at forest conservation, and the creation of support programmes for forest owners, which will help improve their management and preserve ecosystem services. Similar research findings have been observed for Brazil and provide useful context and methodological approaches. In particular, D. Pinillos *et al.* (2021) note that Brazilian legislation requires farmers to maintain and protect forest areas known as legal reserves.

Automated forest classification is an important tool for improving forest management in Albania. This complements the economic and social approaches used in other countries, such as Benin, where the importance of economic

valuation of the environment and the willingness of farmers to pay to reduce forest degradation are key aspects. R. Sourokou *et al.* (2023) studied economic valuation of the environment in Benin and found that users are interested in improving soil fertility and combating erosion of coastal forests. This study has established that the use of machine learning methods and automated classification of legal texts is important for improving forest management, which will help in analysing and improving legal regulation. H. Chen *et al.* (2022) emphasize the need to use methods of automated classification of legal texts, which is important for the technical improvement of forest management.

To ensure the sustainable management of genetic resources and forests in Albania, it is necessary to harmonize policies at different levels, ensure adequate funding, raise awareness and cooperation, and minimize the negative impacts of urbanization. These recommendations can be useful for improving the legal regulation of forest resources in Albania, as they are based on research that has been shown to be effective in different contexts. Similar results can be seen in the study of N. Lovrić *et al.* (2023), which reveal the lack of consensus on the need to harmonize policies at the national and European levels within the framework of the Genetic Resources Strategy for Europe (GRSE). S. Yeasmin *et al.* (2021) also emphasize the importance of policy coherence for the effective management of forest resources, which is essential for economic and environmental well-being. At the same time, G. Zegeye *et al.* (2023) point out the importance of financing to minimize the negative impact of urbanization on biodiversity, which also requires appropriate investment in infrastructure.

In particular, T.M. Issii *et al.* (2020) assessed the effectiveness of environmental legislation in Brazil and concluded that increased cooperation between different stakeholders is key to

preserving forests and creating less fragmented landscapes. According to E.Z. Başkent (2021), the impact of urbanization on forest resources directly depends on compliance with legal obligations, which can reduce landscape fragmentation, although existing legislation is not always effective enough in preventing this trend. Based on the analysis, it is worth noting that in order to ensure sustainable forest management in Albania, several key aspects need to be taken into account: conservation of forest ecosystems, economic valuation of ecosystem services, application of meta-analysis and use of market instruments to reduce pressure on forest ecosystems. D. Saha & A. Taron (2023) also emphasize the importance of conserving forest ecosystems and take into account the value that local people place on ecosystem services in India. At the same time, F. Dashtbozorgi *et al.* (2023) highlight the need for effective governance and legal regulation for forest conservation, which are key aspects for ensuring sustainable use of forest resources.

It is important to emphasize the need for economic valuation of forest ecosystem services as one of the elements of effective forest management policy. F.A. Taye *et al.* (2021) note that it is worthwhile to assess several ecosystem services together, as a separate assessment may lead to an overestimation of industrial forests and an underestimation of natural forests that provide more ecosystem services. Due to the ongoing challenges in forest management, it is necessary to reduce the pressure on forest ecosystems through additional market instruments that encourage reduced consumption in the private transport sector and energy and food models.

An analysis of the impact of European legislation on forestry and nature conservation is useful for the development of a similar regulatory framework in Albania, taking into account local environmental and economic conditions.

European laws such as the Renewable Energy Directive and nature conservation legislation, including the Natura 2000 network. For instance, T. Li (2024) explores the innovative and promising value of gene editing technology for the conservation of endangered plants and animals, as well as the environmental and bioethical issues involved. The author analyses the impact of gene editing on China's legal system for the protection of plants and animals, proposing to develop special legislation to regulate this technology.

K.P. Sahoo *et al.* (2023) examine the impact of forest legislation on indigenous tribal communities dependent on forest ecosystems in Jhargram district, West Bengal. The authors analyse how various regulations introduced before and after India's independence have restricted these communities' access to forest ecosystem services. Analysing the impact of legislation on livelihoods and access to forest resources is important for the development of effective forest management policies in Albania, particularly in the context of ensuring ecological balance and socio-economic stability of local communities.

Thus, scientists put an emphasis on the importance of improving the legal and governance framework for the effective conservation of forest resources in different countries of the world, including Albania. The above-analysed studies point to the need to harmonize existing legislation, introduce strict sanctions for violations, integrate environmental and social aspects, and use modern monitoring technologies. Attention is focused on the importance of international cooperation, attracting green investments, developing ecotourism and supporting local communities. These approaches can be adapted to analyse and improve the legal regulation of forest resources in Albania, contributing to the conservation of biodiversity and sustainable use of natural resources.

Conclusions

Forest ecosystems in Albania are characterized by significant species diversity, which depends on altitude and distance from the coast. It was found that about 83% of the forests consist of semi-natural plantations that have emerged as a result of natural regeneration. Most of Albania's forest ecosystems have structures typical of Southeast European countries, with numerous deciduous forests. The study also found that forest management practices in Albania include both traditional and newer approaches aimed at ensuring the sustainability and productivity of forests and rangelands. In particular, the integrated forest and rangeland management plans developed for several municipalities take into account economic, social and environmental aspects, involving local residents in the management of natural resources. It has been established that most of the country's territory is covered by forests, of which the largest share is made up of regenerating forests, while pastures cover a smaller part of the territory.

It has been found that the main problems affecting the development of forestry and rural areas are land use change and the need for legal regulation to ensure sustainability and effective land management. It was found that the current structure of forest land and property in Albania was formed under the influence of political and historical events, which led to the introduction of three forms of ownership: state, communal and private. It is noted that over the past 15 years, one of the most important political decisions in the forestry sector has been the transfer of ownership of forest areas from the State to local governments. The qualitative indicators obtained during the study include statistics on the area and structure of forests, forms of ownership, as well as the level of participation of local communities in forest management. It was found that private forests account for only 3% of the total forest

area in Albania, which is due to restrictions on the privatization of the forest fund. The main challenges during the study were the limited number of scientific studies that dealt specifically with the legal regulation of forest use in Albania and some statistical data. In particular, there were difficulties in collecting primary information due to the geographical and administrative features of the region.

Prospects for further research include the need to improve the legislative framework for the management of privately owned forest

resources to ensure their sustainable development and preservation of ecosystem services. The impact of climate change on forest ecosystems should be studied, and adaptation measures should be developed.

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Conflict of Interest

The author of this study declares no conflict of interest.

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Правове регулювання використання лісових ресурсів

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Анотація. Метою дослідження було проведення комплексного аналізу законодавчої бази у сфері управління лісовими ресурсами Албанії в контексті екології лісів та видового різноманіття, а також визначення основних проблем та перспектив сталого розвитку лісового господарства країни. Методологія дослідження включала аналіз статистичних даних Національного інституту статистики Албанії щодо структури лісових екосистем та форм управління ними. Також були використані результати досліджень, проведених міжнародними організаціями, такими як Світовий банк, Глобальний екологічний фонд та Oikon d.o.o. Проаналізовано структуру та склад лісових ресурсів Албанії, в тому числі природного та напівприродного походження. Узагальнено нормативно-правову базу у сфері управління лісовим господарством в Албанії. Охарактеризовано різні структури управління землями лісогосподарського призначення з визначенням специфіки використання для різних форм власності. Визначено основні проблеми ведення лісового господарства, серед яких інтенсивна експлуатація приватних лісів, брак субсидій та інвестицій, а також недосконале законодавче регулювання. Обґрунтовано адаптаційні заходи для підвищення стійкості лісів Албанії в рамках Документа про лісову політику Албанії на період 2019-2030 років. Запропоновано стратегічні напрямки розвитку, такі як розширення природоохоронних територій, розвиток екотуризму та залучення зелених інвестицій. У дослідженні також підкреслено важливість міжнародного співробітництва для фінансової та технічної підтримки, що сприятиме впровадженню практик сталого лісокористування та збереженню біорізноманіття. Практичне значення дослідження полягає в тому, що отримані результати можуть бути використані для розробки стратегічних напрямів розвитку лісового сектору Албанії, спрямованих на забезпечення сталого управління та збереження лісових ресурсів, що є ключовим фактором економічного та екологічного добробуту країни

Ключові слова: інтегроване управління; екосистемні послуги лісів; законодавча база охорони природи; агролісомеліорація; охорона біорізноманіття