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Territorial Innovation in Forest Ecosystem Management in Albania

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Abstract

Albania's forest ecosystem management is now handling several obstacles while also seizing new opportunities via the perspective of territorial innovation. This research investigates the integration of new technology and creative practices in Albania's forestry sector, focusing on current regulations, community engagement, and technical breakthroughs. It presents a detailed picture of Albania's forests today, stressing key challenges such as forest fires and illicit harvesting. The essay also examines the use of satellite and GIS technology for forest monitoring, the legislative framework that governs forest management, and the critical role that local people play in promoting sustainable practices. This study, using thorough analysis and actual examples, demonstrates the enormous influence of territorial innovation on forest ecosystem management in Albania, as well as the ongoing problems that must be addressed to maintain long-term sustainability.

Key Words: Territory Innovation, Forest Ecosystem Management, Albania, GIS Technologies, Local Communities.

THE SITUATION OF FORESTS IN ALBANIA

Albania has 1,047,000 hectares of forest land, or almost 38% of the entire nation, according to the INSTAT data for 2022 (INSTAT, 2023). About 35% of the woods in this area are oak forests; the other forests are made up of belt and pine forests. According to the research, 112 forest fire incidents were reported in 2022, resulting in considerable destruction to forest surfaces. According to INSTAT (2023), several regions have also reported instances of illicit logging, which has had a detrimental impact on the condition of forest environments.

Table 1. Forest area in Albania (2022)

Forest Type	Area (hectares)	Total Share (%)
Oak forests	367,000	35%
Pine forests	250,000	24%
Generation Forest	200,000	19%
Other forests	230,000	22%
Total	**1,047,000**	**100%**

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NEW TECHNOLOGIES IN FOREST MONITORING

Albanian forest management is improving thanks in large part to the application of innovative technology for monitoring and controlling forests. For the purpose of evaluating the condition of forests and organizing actions, satellite and GIS technologies are crucial. Satellite imaging has reportedly made it easier to locate fire-affected regions and track developments in real time, according to Shahini et al. (2021). Additionally, a significant advancement in forest management is the use of drones for data collecting and unlawful activity monitoring. Drone usage, for instance, has made it easier to spot illicit activity and monitor the condition of the forests in the Shkodra area.

While the monitoring requirements at these levels differ, they are very complimentary, and any carbon monitoring system should consider connecting them. It is critical to consult all stakeholders to obtain agreement on the approach and variables to be tracked. The inclusion of local actors has been demonstrated to have two benefits: it is less expensive and increases ownership of the monitoring outcomes (Skutsch et al., 2009).

FOREST MANAGEMENT LAWS AND POLICIES

The successful management of Albania's forests depends on laws and policies. A crucial document that attempts to enhance forest management via promoting the application of innovative and sustainable technologies is the National Strategy for Forests 2021–2026 (Government of Albania, 2021). However, implementing these rules remains difficult due to absence resources and administrative issues. The World Bank research underlines the need for improved policy implementation and capacity building to support better forest resource management (World Bank, 2023). A robust political and legislative framework is required for Albania's woods to be managed sustainably. Albania's current forest management policies and regulations are aimed at protecting and conserving forests. Forest laws provide guidelines for the use, conservation, and restoration of forests, with the goal of minimizing negative consequences and protecting biodiversity.

The National Forest Strategy is one of the primary strategies, and it includes initiatives to maintain forests, improve their quality, and encourage the sustainable use of forest resources. This strategy comprises strategies for forest sustainability and biodiversity conservation, as well as mechanisms to monitor and prevent hazardous activities (Muça & Diku, 2020). Implementing these programs needs strong cooperation between local and central authorities, as well as the participation of local people.

The execution of these regulations frequently faces a variety of problems, including a lack of resources and insufficient monitoring and control capabilities. The absence of money and managerial ability is a significant impediment to policy implementation and achieving set goals (Muça & Diku, 2020). To solve these issues, measures must be developed to assure enough resources and to increase management and monitoring capacities.

Another problem is community engagement in forest management practices. Local community engagement is critical to ensuring long-term and effective forest management. Policies should facilitate local community engagement and foster collaboration with other groups and actors (Minga et al., 2023). International aid and support from international organizations are also vital in improving policy implementation and providing required support.

The creation of protected areas and the implementation of reforestation projects are other measures that help protect the forests and preserve biodiversity. However, there is a need for improvements in these areas and for creating a stronger legal framework to support the implementation of the necessary measures (Tola et al., 2023). The participation of different stakeholders and the establishment of better coordination are important to ensure the success of forest management policies and strategies.

It is very important to understand that innovation is essential for the improvement and development, generating more profits, as a result, and this willlead to the development of the territory where it operates (Jano, K et al., 2023).

Forest management policies and regulations in Albania are critical for preserving natural resources and ensuring sustainable management. However, it is vital to solve the issues and strengthen monitoring and management capabilities. To attain these aims, it is necessary to build robust support structures and increase cooperation among the many actors.

INVOLVING LOCAL COMMUNITIES

For these resources to be preserved in a sustainable manner, local communities must be involved in forest management. The GIZ-supported Forest and Biodiversity Management Program aims to engage communities in natural resource management and promote sustainable practices. Local communities frequently have extensive knowledge of traditional forest management techniques, and their participation can serve to improve the effectiveness of management strategies. Muça and Diku (2020) underline the necessity of including local populations in the administration of protected places like Dajti National Park to enable a more sustainable and effective management. Community-focused adaptation measures will target food and water security, as well as health. In rural areas, woods and trees may play a vital role in ensuring food, water, and health. Landowners will benefit from mutual collaboration at this scale by identifying priority areas for water resource protection, strategies that build a common emergency reserve of seeds and food supply, measures that preserve or improve essential ecosystem services (such as pollination, water quality, and soil protection), and measures that reduce the breeding sites of potential disease vectors (Louman et al., 2010).

INSTAT data for the year 2022 show that these projects have contributed to the increase of the protected area and to the reduction of the level of damages in forests.

Table 2. Impact of Management Projects on Protected Forest Area

Zone	Protected Area (hectares)	Total Share (%)
Shkodra Region	15,000	1.4%
Dajti Area	20,000	1.9%
Other regions	30,000	2.9%
Total	**65,000**	**6.2%**

The greatest obstacle to implementing territorial innovation in Albania is a lack of financing and resources for developing new technologies and modernizing infrastructure. To solve these difficulties, greater resources must be committed and supporting policies developed. It is also critical to develop procedures for training people and incorporating new technology into forest management.

International help is critical to Albania's forest management. International organizations, such as the World Bank and GIZ, give financing and expertise to help with policy development and technical capacity building (World Bank, 2023; GIZ, 2022). These organizations assist in the implementation of sustainable projects as well as the development of management strategies that use cutting-edge technology and best practices. Additionally, foreign funding helps to enhance policies and methods for sustainable forest management.

CONCLUSIONS AND RECOMMENDATIONS

The impact of territorial innovation on the management of forest ecosystems in Albania is obvious and has contributed to the improvement of monitoring and management of forests. New technologies, policies and involvement of local communities are important to ensure sustainable and effective forest management. However, there are still various challenges that need to be addressed and improved.

Investing in new technology and developing monitoring and management capacities is critical for improving forest management and ensuring the sustainability of forest ecosystems. Territorial innovation provides significant prospects for better forest management in Albania. The application of innovative technology, the establishment of sustainable policies, and the participation of local people are all critical components of successful forest management.

These changes will affect the provision of forest ecosystem services and commodities, presenting forest managers with a variety of new problems. In certain locations, climate change reactions will have an impact on demand for forest products, such as increasing demand for forest-based fuels as a substitute for fossil fuels. Societies establish laws and regulations to address the implications of climate change on ecosystems, including shifting needs for forest production and commerce.

However, issues such as a lack of financing and technological capabilities must be addressed. International collaboration and the commitment of many players are vital to ensure the success of territorial innovation in Albania.

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