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Protected Areas Policy and Geopolitics in Georgia: Convergence of Ecological Governance and Spatial Strategy

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Abstract

The history of the protection of natural areas in Georgia dates back centuries. As early as the 12th century, Queen Tamar issued royal decrees aimed at safeguarding specific natural territories. Five hundred years later, Vakhtang VI's "Collection of Laws" identified the Korugi territory as a protected area, where logging and unregulated access were prohibited and the site was guarded. In mountainous regions, so-called "Khati forests" functioned as strictly protected sacred reserves. The first official state reserve was established in 1912 in Kakheti with the foundation of the Lagodekhi Reserve. During the 20th century, the network of reserves and protected areas gradually expanded throughout the territory of Georgia (BUDE, Protected Areas of Georgia, 2007). Following the restoration of independence, the policy of protected areas acquired new significance, shifting toward sustainable development, tourism, local community involvement, and alignment with international standards. The geopolitical dimension of this process is particularly important. Protected areas are no longer perceived solely as instruments of environmental protection; they have become mechanisms of spatial management and determinants of state interests. Georgia's geographical location at the crossroads of Eurasia, where ecological, economic, and political boundaries intersect, makes nature conservation closely linked to territorial strategy. The interplay between ecological governance and geopolitics has become especially evident in recent years, as the state has introduced new formats, including geoparks, into the framework of protected area policy. As an international instrument, geoparks integrate the conservation of natural and cultural heritage with education, sustainable tourism, and geopolitical identity. In this way, ecological governance in Georgia is gradually transforming into a spatial strategy that intertwines environmental, economic, and diplomatic interests. Analyzing these processes provides insight into how protected area policy has evolved into a key aspect of geopolitical thinking, demonstrating how environmental protection goals intersect with state representation and regional dynamics. This paper examines the theoretical foundations of this convergence and its impact on contemporary nature protection policy in Georgia.

Keywords: Protected Areas, Geoparks, Ecological Governance, Spatial Strategy, Geopolitics, Biodiversity Conservation, Sustainable Development.

Introduction

Georgia, with its unique geographical location and rich natural resources, is an important region where nature conservation policies and geopolitical strategies are closely linked. The system of protected areas, which includes national parks and reserves, aims to preserve biodiversity, protect ecosystems, and promote sustainable development (Matchavariani et al., 2014).

Geoparks, as a new concept, are a tool for protecting geoheritage and developing geotourism. In addition, they contribute to the economic development of local communities and the strengthening of geopolitical identity (Zhuang A., 2024).

The integration of ecological governance and spatial strategy is an important aspect of modern nature conservation policy. This approach involves not only protecting natural resources, but also ensuring their sustainable use, which includes the creation of ecological corridors, the assessment of ecosystem services, and the consideration of natural factors in spatial planning processes (Elizbarashvili, 2019).

The development of a network of protected areas in Georgia requires consideration of not only ecological, but also social and economic factors. It is important to involve local communities, take into account their needs and interests, so that protected areas do not become just a tool for nature protection, but also a platform for sustainable development (Elizbarashvili, 2019).

The development of geoparks in Georgia is an important part of this process. Geoparks are not only a tool for protecting geoheritage, but also contribute to the promotion of local cultural and natural heritage, which has a positive impact on the development of tourism and the strengthening of the local economy (Elizbarashvili, 2021).

It is important to note, however, that the policy of protected areas and geoparks should not be isolated. There should be close coordination and cooperation between them to ensure the effective management and sustainable use of natural resources. An important role in this process is assigned to state institutions, international organizations and local communities.

This article will discuss the interdependence of the policy of protected areas and the development of geoparks in Georgia. Special attention will be paid to the processes of integration of ecological governance and spatial strategy, their impact on nature conservation policy and sustainable development prospects.

Georgia's Context and Political Evolution

Protected areas policy in Georgia has gradually evolved since the restoration of independence, addressing the legacy of Soviet centralized governance while adapting to new environmental challenges. The Law on the System of Protected Territories (Parliament of Georgia, 1996) established the legal basis for the creation and functioning of protected areas, integrating the principles of sustainable development and the protection of both natural and cultural heritage. The subsequent Law on the Status of Protected Areas (Kakabadze, 2012) and complementary legal acts refined definitions, zoning, and management procedures.

In recent years, the Georgian government has worked to strengthen governance mechanisms, develop long-term management plans, and enhance local community involvement. The first management plans in Georgia were developed for the Borjomi-Kharagauli, Lagodekhi, and Vashlovani Protected Areas, establishing the foundation for integrated conservation planning. In 2022, updated management plans were approved for the Borjomi-Kharagauli Protected Areas, Ktsia-Tabatskuri Managed Reserve, and Goderdzi Phosphorized Forest Natural Monument, integrating natural and cultural values, ecotourism potential, traditional livelihoods, and ecosystem services (Georgian Government, 2022).

International Commitments and Global Framework:

Georgia's protected areas policy is closely aligned with international environmental frameworks. The country is a signatory to the Convention on Biological Diversity (CBD), which calls for the expansion of protected area networks and the implementation of ecosystem-based management principles (MEPA, 2018) Georgia is also a party to the Ramsar Convention, which defines the mechanisms for the protection of wetlands of international importance (Ramsar Secretariat, 2018),

Furthermore, Georgia participates in the UNESCO World Heritage and Emerald Network programs, which integrate the country into European biogeographical conservation systems (Council of Europe, 1979; Council of Europe, 2019; UNESCO, 2023). These frameworks support not only nature conservation but also the protection of cultural landscapes and the strengthening of mutual trust in regional cooperation (Council of Europe, 2019; UNESCO, 2023).

The Growing Role of Geoparks and Spatial Strategy

Geoparks have recently become a vital extension of Georgia's protected areas policy - serving as platforms for the convergence of ecological, cultural, and geopolitical objectives. Research indicates that Georgia has multiple potential geopark areas that could serve simultaneously as environmental, educational, and economic assets (Gamkrelidze, 2021).

Potential locations for conservation and geotourism initiatives include the Racha region, Samegrelo (Tsalenjikha, village Mukhuri), Kakheti, Javakheti, Kvemo Kartli, and Kazbegi. Significant natural features such as the Vashlovani Protected Areas with the "Areuli" erosion complex, paleontological objects of elephants and mollusks, Takhti-Tepa volcano, and the Lagodekhi Protected Areas with two large waterfalls, a high mountain lake, and gorges have been documented in previous conservation reports (Council of Europe, 2020). In addition, the Dariali Glacier Complex National Geopark represents both national natural heritage and opportunities for transboundary cooperation. Geopark initiatives are particularly promising in Samtskhe-Javakheti, Kvemo Kartli, and Kakheti—regions where natural and cultural heritage are closely intertwined with border geopolitics.

Challenges and Development Pathways: The convergence between protected areas policy and geopolitics in Georgia is accompanied by a complex set of systemic, institutional, and spatial challenges that directly determine the effectiveness of the country's ecological governance.

The first and perhaps most critical issue concerns the deficit in protection effectiveness. Although the total area of protected territories in Georgia has expanded considerably in recent years, internal management remains largely formalistic. Many areas of high endemic and ecological value are still outside the official protected areas network or receive only nominal protection - the so-called "paper parks." Research demonstrates that a significant portion of high conservation value (HCV) areas remains vulnerable to the combined pressures of climate change, unsustainable land use, and the spread of invasive species (Slodowicz, 2018). Simultaneously, intensive natural resource exploitation - including logging, mining, and hydropower development - often conflicts with the principles of ecological sustainability. This highlights the urgent need for comprehensive spatial planning and the full application of Environmental Impact Assessments (EIA) across all development sectors. And the boundaries and information of geoparks need to be included in the strategic development documents of the regions and the management plans of the administrations of protected areas and the strategic plans for the development of protected areas of Georgia.

The second challenge lies in legal and institutional inconsistencies. Despite the existence of a comprehensive legal framework, management structures in Georgia still suffer from fragmentation. The Ministry of Environmental Protection and Agriculture, the Forestry Agency, and the Agency of Protected Areas maintain overlapping mandates, complicating the implementation of unified policies. Land tenure and delineation remain legally ambiguous - particularly in emerging initiatives such as the Erusheti National Park, where community property rights continue to lack clear legal definition (MEPA, 2023). Furthermore, the limited involvement of local populations in decision-making processes generates a deficit of trust and slows the democratization of environmental governance.

A third difficulty involves financial and technical constraints. Funding for protected area management continues to rely heavily on international donor assistance, which undermines long-term sustainability. The lack of basic infrastructure - including access roads, monitoring stations, and educational centers - hampers the development of sustainable tourism and environmental education. Under these circumstances, the establishment of a national and transboundary geopark network emerges as a key opportunity for economic diversification, linking nature conservation, tourism, and cultural heritage within an integrated management framework.

The fourth and increasingly relevant dimension pertains to geopolitical and transboundary complexities. Georgia's geographic position within the South Caucasus - a region marked by political sensitivities and competing interests - creates both opportunities and constraints for cross-border environmental cooperation. The establishment of transboundary geoparks, such as David Gareja–Gobustan (Georgia–Azerbaijan) and Javakheti-Arpi (Georgia–Armenia) (Ten years ago, the country began working with Azerbaijan to create the Lagodekhi-Zakatala transboundary protected area). requires mutual trust, functional coordination mechanisms, and clear legal agreements. Yet, ongoing border delimitation issues with Azerbaijan and differing legal regimes with Armenia pose tangible challenges to implementation. Meanwhile, participation in the UNESCO Global Geoparks Network demands adherence to international standards that integrate geological heritage protection, education, and community-based development (Eder, 2019).

A fifth emerging challenge involves the intensifying impacts of climate change. Rising temperatures, altered precipitation patterns, and the increased frequency of extreme weather events have created new environmental threats, particularly in mountainous and semi-arid regions. Existing management plans often lack climate adaptation and risk assessment components, limiting their resilience and long-term effectiveness (IUCN, 2020). However, it is noteworthy that over the past 3 years, the management

plans of 7 protected area administrations have included information and planned activities on climate change, adaptation, and mitigation measures.

From a development perspective, Georgia must transition toward an integrated governance model that unites nature conservation, geopolitical stability, and socio-economic sustainability. Key strategic priorities include:

1. **Implementation of Geographic Information Systems (GIS)** to improve monitoring and spatial decision-making;
2. **Enhanced community engagement** in the management of national parks and geoparks;
3. **Institutionalization of transboundary cooperation**, especially in southern and eastern regions;
4. **Expansion of educational and research programs** to strengthen national expertise and capacity.

Ultimately, the path forward for Georgia's protected areas policy and geopolitics depends on the country's ability to transform its management paradigm from one of "regulatory protection" toward a model of "shared socio-ecological stewardship." In this model, conservation goals are embedded within spatial strategies and cross-border cooperation, turning natural heritage into both an environmental and geopolitical asset.

1. Policy and Governance Dimensions

The evolution of Georgia's protected areas system reflects a gradual transition from a conservation model rooted in post-Soviet environmental management to a modern governance framework that integrates sustainability, participation, and spatial equity. While early institutional efforts were focused primarily on biodiversity preservation, recent reforms have expanded the political and social role of protected areas as instruments of regional development and environmental diplomacy (Dudley, 2018; IUCN, 2020).

The establishment of large-scale management plans, the inclusion of cultural landscapes, and the increased attention to ecosystem services all mark a shift toward more adaptive and inclusive management paradigms. However, despite these improvements, governance effectiveness remains limited by overlapping administrative mandates, fragmented coordination between agencies, and inconsistent implementation of international obligations (MEPA, 2023).

2. The Geopolitical Perspective

The geopolitical dimension of protected areas in Georgia extends beyond ecological management. It encompasses the strategic use of territory in maintaining sovereignty, facilitating cross-border relations, and stabilizing frontier regions. In this regard, Georgia's location between the Black and Caspian seas and along the South Caucasus corridor creates a unique interface between conservation, national identity, and regional security (Eder F, 2019). Protected areas situated near borders - such as Vashlovani, Lagodekhi, and Javakheti - serve as both ecological buffers and symbolic representations of state presence. The management of these territories must, therefore, balance environmental priorities with geopolitical sensitivities. In regions adjacent to disputed or sensitive borders, protected areas often function as instruments of "soft diplomacy," fostering cooperation through ecological science, cultural exchange, and shared management frameworks (Council of Europe, 2019).

Yet, the potential for cross-border collabora.tion is uneven. Relations with Armenia are relatively stable and institutionally supported, making transboundary cooperation - particularly within the Javakheti-Arpi ecological complex - more feasible. Conversely, the Georgian-Azerbaijani frontier remains politically sensitive, constraining the development of the David Gareja-Gobustan Geopark concept, despite its exceptional cultural and geomorphological potential.

3. The Role of Geoparks in Policy and Spatial Strategy

Geoparks in the contemporary world represent a significant instrument that integrates environmental governance, regional development, and cultural diplomacy. They create a bridge between nature conservation, education, and sustainable tourism, while in border regions they often facilitate political cooperation.

In Georgia, several areas are identified as important for geopark planning, with the Racha region being one of the most significant. Located in the northwestern part of Georgia on the southern slopes of the Great Caucasus, Racha represents a prospective segment for geopark development. The region has undergone geomorphological zoning and comprehensive relief studies, with the central part featuring

Cambrian and Paleozoic crystalline substrates (gneisses, migmatites, crystalline schists) and granitoid intrusions of varying ages. The Great Caucasus and higher massifs are composed of granitoid, gneissic, and metamorphic schists, the oldest rocks (600 million years) are observed in the highest peaks. Due to hypsometric effects, the age of rocks decreases in the lower areas (70–30 million years) (Chichinadze, 2022).

The geological structure of Racha shapes karstic, erosional-denudational, volcanic, and periglacial reliefs, including caves, valleys, canyons, glacial and rocky lakes, waterfalls, deep gorges, and mineral springs. This diversity has significantly influenced the formation of ancient settlements and cultural development in the region, particularly near the sources of the Rioni River, where natural deposits of iron, gold, and copper supported early human societies.

A particularly important component of the geopark planning is the microzone of viticulture and winemaking, where traditional vineyards and wine production practices have maintained economic and cultural significance from the past to the present. In addition, the Upper Racha archaeological sites - Oni, Brili, Tevresho, and Ghebi - contribute additional cultural value and provide opportunities for integrated cultural tourism within the geopark (Chichinadze, 2021).

Regarding cross-border regional cooperation, the Kakheti-Shaki-Zagatala region stands out for its high biodiversity and rich cultural heritage. Existing protected areas (Lagodekhi Protected Area, Zagatala State Reserve) and territorial stability provide a solid foundation for the creation of a joint geopark, promoting sustainable tourism, scientific collaboration, and strengthening cross-border trust.

The Javakheti and Arpi Plateau represents a potential cross-border geopark aimed at conserving volcanic and lake ecosystems within the framework of Georgia-Armenia cooperation.

All of these initiatives integrate ecological, social, and political objectives, supporting tourism, local community engagement, education, and sustainable development strategies. International experience confirms the effectiveness of such approaches: in Europe, the Teruel–Aliagas Geopark (Spain) and the Hațeg Geopark (Romania) combine nature conservation, multi-sectoral governance, and active local community participation.

Georgia's geopolitical realities, particularly border restrictions with Azerbaijan, require an adapted governance model. The optimal approach may involve a hybrid structure that simultaneously integrates national coordination and bilateral technical committees. This model creates a realistic basis for the development of transboundary geoparks and facilitates a safe, sustainable, and cooperation-based spatial strategy.

5. Toward a Georgian Model of Geopark Governance

Based on comparative European experiences and Georgia's own institutional context, an optimal national model for geopark governance would combine the following principles:

1. **Polycentric management** — a framework where local, regional, and national authorities share decision-making responsibilities;
2. **Participatory governance** — ensuring meaningful engagement of communities, universities, and NGOs in management processes;
3. **Scientific integration** — involving research institutions in geological mapping, monitoring, and risk assessment;
4. **Cross-border coordination mechanisms** — bilateral working groups or joint commissions for data sharing and heritage protection;
5. **Economic diversification** — aligning geopark strategies with regional development and eco-tourism planning.

Such a model would enable Georgia to strengthen its environmental diplomacy and position itself as a regional leader in sustainable landscape governance. The geopark initiative, if effectively institutionalized, could become a symbol of cooperation across political boundaries and a new dimension of "green geopolitics" in the South Caucasus.

Conclusion

In conclusion, the history of protected areas in Georgia spans more than a century. The evolution of the policy reflects a shift from post-Soviet conservation practices to an adaptive model that integrates ecological protection, sustainable development, and geopolitical awareness. Protected areas now encompass a diverse range of natural and geological features, many of which have the status of natural monuments.

In addition to their primary functions of protection and management, these areas support scientific research, environmental education, public engagement, and institutional collaboration. Such activities highlight the growing convergence between traditional protected area management and geopark initiatives, highlighting their common principles, complementary goals, and potential for integrated conservation and sustainable development.

Overall, Georgia's protected areas continue to serve not only as reserves of biodiversity and geodiversity, but also as strategic spaces where ecological, cultural, and diplomatic interests intersect. This combination of natural and geological heritage creates a solid foundation for future geopark programs, while maintaining conservation mandates and strengthening the country's role in regional cooperation and environmental governance.

Competing interests

The authors declare that they have no competing interests.

Authors' contribution

Both authors provided critical feedback and helped shape the research, analysis, and manuscript.

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