

Protected area management models and their impact on tourism sustainability

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Abstract---The article discusses the importance of protected areas in preserving ecosystems and strengthening local economies. It presents strategies for promoting protected territories within the context of sustainable tourism development. The current situation in Georgia and the main challenges are analyzed. The article emphasizes the importance of monitoring and evaluating outcomes to ensure that tourism development remains environmentally responsible and brings socio-economic benefits.

Keywords---protected areas, sustainable tourism, promotion, ecotourism, environmental protection, local communities.

Relevance of the Topic

The rapid growth of tourism has brought forward ecological and social challenges, making it necessary to search for new approaches to achieve balance. In the modern world, the key challenge is sustainable tourism development, as it ensures the protection of natural and cultural heritage, promotes economic progress, and supports social stability. Experience shows that sustainable tourism can become a driver of economic growth while also considering environmental and local community interests.

Research Objective

The research aims to study local practices in Costa Rica and Georgia regarding the organization and management of nature-based tourism projects using empirical data, and to identify the most significant initiatives in this field.

Introduction

The tourism industry is one of the fastest-growing sectors globally, producing both positive and negative effects on economic, social, and environmental systems. Against this background, the need for sustainable tourism emerged. Its primary objective is to implement tourism activities in a way that does not harm environmental balance, protects the interests of local communities, and generates economic benefits for both current and future generations. Sustainable tourism ensures the preservation of natural and cultural heritage, supports economic development, and contributes to maintaining social stability.

The main objective of sustainable tourism development is to ensure that tourism is environmentally clean, socially and culturally beneficial, and economically efficient. To achieve this, it is essential to establish appropriate policies and conduct continuous monitoring of their implementation. It is also important for local communities to actively participate in the tourism development process so that it aligns with their needs and perspectives.

Sustainable tourism is not only concerned with developing physical and economic structures — it also requires raising awareness among both tourists and local

residents. Tourists must understand how their actions affect the environment and local communities, while local residents should be aware of what sustainable tourism means and how it can benefit them.

The implementation and development of sustainable tourism involve the use of innovative technologies and ideas, such as alternative energy sources, increased digitalization, and digital monitoring of tourism activities and environmental impact. The strengthening of sustainable tourism can be supported by new business models that integrate the initiatives of both tourism and local businesses — for example, ecotourism, agritourism, and cultural tourism, which have a lower environmental footprint. Today, meeting tourism demands and improving services has become possible through the use of information technology. Businesses that actively use modern information technologies have a higher chance of success. In this context, it is important to understand how information technologies influence the efficient use of natural resources, meaning their impact on sustainable tourism development.

Main part

Protected areas play a key role in the context of sustainable tourism: they preserve nature while simultaneously generating economic benefits through tourism. The trend toward the development of ecotourism has been defined by the United Nations World Tourism Organization (UNWTO). The UNWTO has been actively involved in this field since the early 1990s, when it developed guidelines emphasizing the close connection between protected areas and tourism.

Research confirms that global cooperation in the field of sustainable tourism and investments in ecotourism increase the effectiveness of resource management, create new employment opportunities, and promote socio-economic development at the local level. Norway provides a relevant example of such experience: the country's sustainable tourism strategies focus on energy efficiency and environmentally friendly practices. Norway has improved settlement and transportation systems in tourist destinations in accordance with the principles of sustainable development. Additionally, the country invests in green infrastructure, which contributes to the protection of natural heritage sites by tourists. The Netherlands is also recognized as one of the leading countries successfully implementing sustainable tourism policies. In this article, we examine the experiences of Georgia and Costa Rica as interesting models for comparison.

In Costa Rica, sustainable tourism represents a key aspect of the country's economic and social development. For many years, the country has supported ecotourism and developed strategies for the protection of local ecosystems. The government aims not only to use natural resources rationally but also to involve local communities and ensure that they benefit economically from sustainable tourism. Costa Rica has

demonstrated that a long-term, environmentally clean tourism model can be successful and create new economic opportunities.

In 2024, Costa Rica welcomed 2,900,000 tourists and generated 5.434 billion USD in tourism revenue. Accordingly, tourism accounted for 5.7% of the country's GDP. It is important to note that since tourism in Costa Rica is mainly nature-based, almost all income comes directly from ecotourism. This revenue is then used for nature conservation and employment of local communities. For example, the Monteverde Cloud Forest Reserve uses all visitor revenue for ecosystem protection. On the country's western coast lies the Ostional Wildlife Reserve, famous for sea turtles that come ashore on specific days each month to lay eggs. This natural phenomenon attracts both local and international tourists. To ensure maximum visitor management while preserving the ecosystem, local residents created the Ostional Integrated Development Association, which operates according to the regulations governing protected area visits and ecotourism in Costa Rica. The development of ecotourism in the country encourages active cooperation between local residents, national parks, protected areas, scientific institutions, and government bodies in order to generate benefits while ensuring conservation.

Through its National System of Protected Areas, Costa Rica has contributed significantly to global environmental protection, becoming a foundation for the country's sustainable development. In the 20th century (between 1900 and 1940), Costa Rica refined its environmental legislation, and in 1949 it became one of the first countries to transition to a "green economy": the nation abolished its army and allocated resources to education and environmental protection. Today, Costa Rica has restored 50% of its forest cover.

Costa Rica, with a population of more than five million, bases its system of environmental protection on a broad network of 167 protected areas, covering 27% of the country's territory. One of the main priorities of the national conservation agenda is establishing ecological connectivity between protected areas — creating "bridges" within nature. In 2006, Costa Rica launched the National Biological Corridors Program (Programa Nacional de Corredores Biológicos), which operates under the Ministry of Environment and Energy and forms part of the National System of Conservation Areas (SINAC). In 2017, the program was renamed the National Strategy for Biodiversity Conservation. Currently, 44 biological corridors have been established, covering 1.6 million hectares. SINAC has developed specific criteria to measure corridor-management effectiveness, using ecological, socio-economic, and cultural indicators. Recent ecological studies show that corridor effectiveness varies. Nonetheless, biological corridors — together with protected areas — play a crucial role in shaping local land-use policies.

Costa Rica's protected areas are popular destinations for tourists and serve as important sites for scientific research. By establishing an advanced system of protected territories, the country confidently positioned ecotourism as the core of its national tourism product. Costa Rica is one of the best examples of the interconnection between sustainable tourism and ecotourism, having successfully developed a strong international identity as the "capital of ecotourism."

Costa Rica's tourism model is based on three main principles: sustainability, innovation, and inclusiveness. The country's tourist attractions focus on environmentally responsible activities, allowing travelers to reduce their carbon footprint while contributing to the preservation of cultural heritage.

In Georgia, the Agency of Protected Areas manages more than 90 protected territories, including 15 national parks — such as Tusheti, Borjomi-Kharagauli, Mtirala, and Kolkheta National Parks. Borjomi-Kharagauli National Park is one of the largest in Europe (85,000 hectares), offering 11 tourist routes and ecotourism infrastructure. Georgia is still in the development stage: infrastructure and services are improving, but international recognition remains limited. Meanwhile, Costa Rica is already an established ecotourism brand, where the government, businesses, and local communities work together cohesively.

In Georgia, the most successful protected areas are considered to be Borjomi-Kharagauli and Mtirala National Parks. Borjomi-Kharagauli National Park, one of the largest in the Caucasus region, has carried out major projects with the support of the Caucasus Nature Fund (CNF). Between 2019 and 2021, the park received €870,000 in funding used for rangers' salaries, equipment, vehicles, the introduction of modern monitoring systems, and improvements in visitor services. Ecotourism infrastructure development also included an extensive network of hiking trails (including multi-day routes), visitor centers in Borjomi and Kharagauli, eco-camping sites and cottages, as well as community involvement through eco-guides and family-run guesthouses, creating additional income opportunities for local residents.

As a result of these projects, the national park has preserved its unique ecosystems (forests and endemic species), become more diverse in its tourism offerings, and secured continuous support from international donors, ensuring long-term sustainability.

Mtirala National Park, located in the Adjara region across the Kobuleti and Keda municipalities, encompasses subtropical forests. With support from the Caucasus Nature Fund (CNF) and the United States Agency for International Development (USAID), the park implemented monitoring systems for unique subtropical forests, carried out conservation efforts for rare and endemic species (including brown bears

and various birds), and upgraded visitor infrastructure. This included marking trails and ecotourism routes, establishing camping zones, and promoting community participation — such as local guesthouses and tourist guides. Ecotourism has become an additional source of income for the local population.

Costa Rica and Georgia are both known for ecotourism; however, their scale, experience, and development models differ significantly. (See table.)

CRITERION	COSTA RICA	GEORGIA
Natural Conditions	Tropical forests, volcanoes, oceans, Caribbean and Pacific coastlines; very large area with diverse climate zones	Caucasus Mountains, subtropical forests (Adjara), semi-deserts (Vashlovani), seas and lakes; high landscape diversity on a smaller territory
Biodiversity	One of the richest biodiversities in the world; numerous endemic species	High biodiversity in a small area; many unique and endemic species
Protected Areas & National Parks	Over 25% of the country is protected; more than 30 national parks	Over 10% of the country is protected; 14 national parks and reserves
Ecotourism Development	Known since the 1980s as a "global ecotourism model"; strong public-private sector cooperation	Active development since the 2000s; progress is visible, but the sector is still maturing
Projects & Investments	Large international investments; tourism contributes over 8% of GDP, with ecotourism around 5%; eco-certification systems for hotels and tour operators	Supported by international donors (CNF, USAID, EU); over 89 million GEL invested in protected areas in recent years; ecotourism's economic share is small but growing
Local Community Involvement	Developed community-based tourism; locals actively work as guides, hotel owners, and service staff	Growing involvement, though still limited; successful examples include Mtirala and Algeti
Infrastructure	Highly developed: marked trails, visitor centers, eco-lodges, organized transport	Progress visible (Borjomi-Kharagauli, Mtirala, Algeti), but some areas still require infrastructure improvement
Number of Ecotourists	Over 2 million ecotourists annually in ecotourism zones alone	Ecotourism segment is growing, but visitor numbers are relatively small
Challenges	Overtourism in some regions; environmental pressure	Increasing international recognition, developing strategies, standardization, and monitoring needed

Costa Rica and Georgia Ecotourism Comparison (in Numbers):

Indicator	Costa Rica	Georgia
% of Protected Areas	26%	9%
Annual Ecotourism Visitors (approx)	1.7 million	0.3 million
Revenue from Ecotourism (USD)	\$ 3.5 billion	\$ 500 million
UNESCO Natural Sites	3	1
Biodiversity Index (0-10 Scale)	9.5	7.2

We have noted that the development of sustainable tourism is a global and multifaceted challenge. Its strategies are not limited to a single country or region. Accordingly, Georgia can benefit from sharing Costa Rica's experience — directing tourism revenues more effectively toward ecosystem protection and the empowerment of local communities.

Sustainable tourism requires global cooperation and alignment of strategies between countries. For greater efficiency and scalability, joint strategy development is essential. However, the successful development of sustainable tourism also depends significantly on effective regulation and consideration of the needs of local communities. It is important for countries to adopt similar approaches in managing natural resources, protecting the environment, and preserving cultural heritage.

Conclusion

Thus, Costa Rica's tourism model has been developed based on three main factors: sustainability, innovation, and inclusiveness. The country has established a nature protection program (biological/ecological corridors) that ensures connectivity between protected areas. In the context of sustainable tourism, protected areas play a central role: they simultaneously safeguard nature and generate economic benefits. Georgia, in this regard, needs to improve infrastructure, strengthen education systems related to sustainable tourism, and, most importantly, develop comprehensive strategies and programs in collaboration with the government and tourism regulatory authorities. Sustainable tourism in protected areas not only protects nature but also serves as a source of economic and social benefits.

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