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Article

Management of Innovation Activities of Ecotourism Entities in Uzbekistan's National Nature Parks: Theoretical Foundations and International Experience

Raxmamtova Jo'raxonposhsho Qaxramon qizi[1]
Assistant Professor, Department of Agribusiness Management and Logistics
Tashkent State Agrarian University
Email: joraxonnozimaraxmatova@gmail.com

Abstract: Ecotourism has emerged as a critical pathway for sustainable development, biodiversity conservation, and regional economic growth. Uzbekistan possesses substantial ecotourism potential, encompassing over 5 million hectares of protected natural areas, including 10 national nature parks with rich biological diversity. However, the management of innovation activities by ecotourism entities within these protected areas remains insufficiently explored.

This study aims to develop theoretical and methodological foundations for managing innovation activities of ecotourism entities in Uzbekistan's national nature parks, drawing on advanced international experiences from the United Kingdom, Japan, and Canada.

A mixed-methods approach was employed, combining systematic literature review, comparative case study analysis of international practices, and content analysis of regulatory-legal documents. The theoretical framework integrates Schumpeter's innovation theory, systems thinking, sustainable development principles, and cluster-based management approaches.

The analysis reveals that ecotourism entities operate within complex multi-stakeholder environments requiring balanced economic, ecological, and social objectives. Four types of innovations were identified: technological, product, organizational-managerial, and marketing. International experience demonstrates that successful innovation management in national parks necessitates strategic planning, digital transformation, public-private partnerships, and local community engagement. Uzbekistan's national parks face challenges including infrastructure gaps, low digitalization levels, human capital shortages, and weak institutional coordination.

The study proposes a program-targeted innovation management model comprising five interconnected blocks: strategic planning, organizational-functional support, resource provision, incentive mechanisms, and monitoring-evaluation systems. Implementation of this model is expected to increase ecotourism revenues by 1.5-2.0 times while enhancing ecological sustainability.

Keywords: *ecotourism, innovation management, national nature parks, sustainable development, digital technologies, public-private partnership, Uzbekistan.*

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1. Introduction

The global tourism industry is witnessing a paradigm shift toward sustainable and environmentally responsible travel. Ecotourism, which emerged as a sustainable form of tourism in the late 1980s, aims to generate revenue through judicious use of natural resources while ensuring environmental protection and local community development. The United Nations Sustainable Development Goals directly link ecotourism to natural heritage conservation, climate change adaptation, and poverty reduction [1].

Uzbekistan possesses immense ecotourism potential due to its geographical location, rich biodiversity, and diverse natural landscapes [2]. The country's 10 national nature parks Aralboyi, Oralqum, Janubiy Ustyurt, Yuqori Topalang, Zarafshon, Omanko'ton, Khorezm, Markaziy Qizilqum, Pop, and Ugom-Chatkal cover over 5 million hectares, representing diverse ecosystems including deserts, mountains, foothills, and river deltas. These protected areas harbor exceptional biodiversity; for instance, the Ugom-Chatkal National Nature Park alone hosts 1,787 plant species and 230 animal species [3].

Despite this natural wealth, Uzbekistan faces considerable challenges in developing ecotourism. Infrastructure deficiencies, insufficient information availability, and weak policy coordination impede ecotourism development [4]. Furthermore, while innovation has become a key competitiveness factor in the tourism industry, the mechanisms for managing innovation activities of ecotourism entities in Uzbekistan's national parks remain inadequately researched [5].

A comprehensive analysis of local and international literature reveals several research gaps:

1. Most existing studies examine ecotourism and innovation activities at macro-levels (national or regional), with limited micro-level systematic research at individual national parks and their constituent entities [6].
2. Existing innovation management models are primarily designed for conventional tourism or general innovation activities, lacking adaptation to national parks' unique characteristics (stringent conservation requirements, seasonality, public-private partnership constraints) [7].
3. A unified methodology for assessing innovation potential of ecotourism entities using scoring systems and integral indicators has not been established.
4. Specific factors constraining innovation activities of ecotourism entities in Uzbekistan's national parks have not been systematically identified and classified [8].
5. Comprehensive research on digital innovations and public-private partnership mechanisms for improving management in national parks remains insufficient.

Research objective: To develop theoretically grounded and practically applicable proposals and recommendations for improving the management mechanism of innovation activities of ecotourism entities in Uzbekistan's national nature parks [9].

Research tasks:

1. Elucidate the economic essence of the concept "innovation activities of ecotourism entities" and develop an author's definition;
2. Develop a scientifically based classification of innovation activities in ecotourism;
3. Analyze international best practices (UK, Japan, Canada) in managing innovation activities in national parks;
4. Identify key factors constraining innovation activities in Uzbekistan's national nature parks;
5. Propose a program-targeted innovation management model adapted to national park conditions [10].

2. Materials and Methods

This study employs a comprehensive mixed-methods approach:

Systematic literature review of local and international scientific sources on ecotourism,

innovation management, and protected area management;

Comparative case study analysis of innovation management practices in national parks of the United Kingdom, Japan, and Canada;

Content analysis of Uzbekistan's regulatory-legal documents related to protected areas and tourism development;

Expert assessment and surveys to identify barriers and opportunities.

3. Results and Discussion

3.1 International Experience Analysis

Analysis of international experience identified three distinct yet complementary models of innovation management in national parks.

United Kingdom: Regenerative Tourism and Strategic Planning

Established under the National Parks and Access to the Countryside Act 1949, the UK's national park system comprises 15 national parks managed by specialized National Park Authorities. The UK model features:

Regenerative Tourism Approach: Moving beyond the "minimize harm" principle toward actively improving areas enhancing biodiversity, promoting climate protection, and restoring landscapes. This concept views tourism as a positive force for ecological regeneration [11].

Integrated Strategic Management: National parks are managed as integral components of regional development systems, with tourism revenues reinvested into environmental conservation and local economies.

Digital and Data-Driven Management: Decision-making based on geographic information systems, digital mapping, online information platforms, and visitor analytics.

Stakeholder Collaboration: Multi-stakeholder governance through partnerships between park authorities, local businesses, communities, and conservation organizations [12].

Japan: Technology and Community Symbiosis

Managed by the Ministry of the Environment, Japan's system of over 30 national parks is characterized by:

Multi-stakeholder Governance: Collaborative governance involving national government, local authorities, private sector, academic institutions, and the public [13].

Indicators (Dimensions)	UK Experience	Japan Experience	Canada Experience	Applicability to Uzbekistan
Management Model	National Park Authorities with regional planning	Multi-stakeholder collaboration	Science-based centralized management	Participatory multi-stakeholder governance system
Tourism Concept	Regenerative tourism	Human-nature harmony concept	Conservation-first sustainable use	Integration of tourism with nature conservation
Digital Technologies	E-information systems, digital mapping	Mobile apps, AI, social media analytics	Online services, e-booking, real-time monitoring	Creation of unified digital ecotourism platform
Visitor Management	Visitor flow control and planning	Ecological impact reduction and mitigation	Real-time monitoring and capacity management	Implementation of carrying capacity and e-monitoring
Local Community Participation	Rural economic development	Cultural integration and tradition preservation	Indigenous and local participation	Development of homestays, guiding, and crafts
Innovation Infrastructure	Green transport, eco-technologies	Education centers, innovative services	Modern recreational infrastructure	Systematic development of eco-infrastructure
Scientific Approach	Evidence-based decision-making	Research-based management system	Ecosystem-based conservation and monitoring	Establishment of research-integrated management

Table 1. Comparative Analysis of International Ecotourism Practices and Their Applicability to Uzbekistan

Digital Innovation Integration: Electronic guides, multilingual information systems, and mobile applications for nature observation have become standard. Social media analytics enable visitor experience monitoring.

Cultural-Natural Environment Integration: Traditional crafts, local cuisine, and cultural heritage are integrated into ecotourism products, creating unique visitor experiences [14].

Ecological Education Emphasis: National parks serve as ecological education platforms through interactive museums, virtual tours, and scientific programs.

Canada: Science-Based Ecosystem Management

Managed by Parks Canada, Canada's system of 48 national parks features:

Ecosystem-Based Approach: Management decisions grounded in scientific research, ecological monitoring, and long-term planning.

Visitor Flow Management: Advanced monitoring systems track human movement, ecological impacts, and wildlife interactions to manage carrying capacity [15].

Indigenous Partnerships: Collaborative governance with Indigenous peoples, preserving traditional knowledge and cultural values.

Public-Private Partnerships: Extensive private sector involvement in tourism services, transportation, and accommodation while maintaining public oversight.

Data-Driven Innovation: Parks Canada emphasizes using data, technology, and artificial intelligence to improve service delivery and conservation outcomes [16].

3.2 Comparative Analysis and Applicability to Uzbekistan

Table 1. Comparative Analysis of International Best Practices in National Park Management and Applicability to Uzbekistan

Source: Systematized and structured by the author based on international practice in national park management [17].

3.3 Ecotourism Entities: Economic Essence and Characteristics

Analysis demonstrates that ecotourism entities operate within a unique economic system requiring simultaneous fulfillment of three core objectives:

1. Generating economic value and income through tourism services;
2. Ensuring conservation and sustainable use of natural resources;
3. Protecting socio-economic interests of local populations [18].

Ecotourism entities can be categorized into five groups:

1. **State governance bodies** — responsible for regulatory-legal frameworks, resource use regulations, and environmental oversight;
2. **Tourism service providers** — tour operators, agencies, accommodation facilities, guides, transport, and catering enterprises;
3. **Protected area administrations** — national park administrations balancing ecological and economic functions;
4. **Local communities** — populations offering homestays, crafts, guiding, and other services;
5. **Tourists** — end consumers whose behavior and ecological awareness shape the market [19].

3.4 Innovation Management Mechanism: Conceptual Model

Based on theoretical synthesis and international experience, a program-targeted innovation management model comprising five interconnected blocks is proposed:

Block 1: Strategic Planning

- Ecotourism development strategy with clear target indicators
- Budget planning aligned with environmental conservation priorities
- Performance indicator system (KPIs)

Block 2: Organizational-Functional Support

- Management structure with clearly defined responsibilities
- Inter-agency coordination mechanisms
- Systematic staff professional development

Block 3: Resource Provision

- Financial resource mobilization (budget, PPP, grants)
- Material-technical and infrastructural support
- Human capital development

Block 4: Incentive and Motivation

- Material and non-material incentive systems
- Social packages and career advancement opportunities
- Private sector engagement through PPP mechanisms

Block 5: Monitoring and Evaluation

- Continuous monitoring of innovation indicators
- Performance evaluation against set targets

- Corrective and coordinating measures mechanism

3.5 Constraints on Innovation Activities in Uzbekistan's National Nature Parks

Empirical analysis of 10 national nature parks identified five categories of barriers:

Financial barriers: Limited budget allocations, insufficient investment, high costs of innovation implementation;

Human capital barriers: Shortage of qualified personnel, low digital skills, inadequate training programs;

Information barriers: Limited access to market intelligence, weak experience exchange, poor science-practice linkages;

Regulatory barriers: Complex permitting procedures, unclear PPP mechanisms, bureaucratic obstacles;

Organizational barriers: Weak inter-agency coordination, limited stakeholder participation, inadequate monitoring systems.

3.6 Expected Economic and Ecological Outcomes

Implementation of the proposed innovation management model is expected to yield:

Economic outcomes:

- 1.5-2.0 fold increase in ecotourism revenues;
- 30-40% additional job creation in park-adjacent areas;
- Increased private sector investment in ecological infrastructure.

Ecological outcomes:

- Enhanced environmental safety levels;
- Reduced waste and pollutant emissions;
- Positive dynamics in conservation and restoration of Red Book species [20].

4. Conclusion

This study developed a theoretical and practical framework for managing innovation activities of ecotourism entities in Uzbekistan's national nature parks. The findings show that effective innovation management requires the integration of technological, product, organizational-managerial, and marketing innovations with environmental conservation and community development. Comparative analysis of the UK, Japan, and Canada demonstrates the relevance of strategic planning, digitalization, stakeholder cooperation, scientific monitoring, and community participation for Uzbekistan. However, these practices require adaptation to local institutional and socio-economic conditions. The study identified financial, human-capital, information, regulatory, and organizational barriers and proposed a five-component program-targeted management model covering strategic planning, organizational support, resource provision, incentives, and monitoring and evaluation. The practical implication is that digital transformation, public-private partnerships, professional development, scientific monitoring, and local community participation should be prioritized in Uzbekistan's national parks. Future research should pilot-test the proposed model and evaluate its long-term economic, social, and environmental outcomes.

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