DIRECTIONS FOR TOURISM DEVELOPMENT IN THE ARAL SEA REGION

Niyetbayev Atabek Aralbay-uli
Teacher, Karakalpak state university,
Department of Economics, tourism and business management

Keywords: Aral Sea region, Karakalpakstan, sustainable tourism, post-crisis territories, community-based tourism, strategic scenarios, Moynaq.

1. Relevance of the research

Amid accelerating environmental deterioration and the growing prominence of sustainable development on global agendas, tourism is increasingly recognized as a strategic lever for the socio-economic recovery of ecologically fragile regions [1]. One of the most environmentally compromised zones in Central Asia is the Aral Sea region, where unsustainable water management caused the sea, which once covered more than 68,000 km², to recede [2], giving rise to the Aralkum desert, biodiversity loss, soil and atmospheric salinization and deteriorating public health [3]. These changes undermined the region's traditional industries: fishing, with annual catches falling from 30–35 thousand tonnes to virtually zero, and agriculture [4].

Despite the gravity of these challenges, the region has a distinctive combination of natural, historical, cultural and ethnographic assets: the transformed landscape of the former seabed, protected natural territories, heritage sites and the traditions of Karakalpakstan [5]. The topic is also supported by national policy. Uzbekistan declared 2025 the Year of Environment and Green Economy [6], and the "Uzbekistan – 2030" Strategy aims to expand tourist flows [7]. By the end of 2024, tourism services exports grew 1.6 times to $3.5 billion, and the country ranked 78th among 119 countries in the WEF Travel and Tourism Development Index [8, 9].

2. Aim, object and methodological framework

The aim of the research is to provide a scientifically grounded substantiation of the priority directions for tourism development in the Aral Sea region under conditions of ongoing ecological transformation, and to develop recommendations for its sustainable, inclusive and economically viable advancement. The object is the tourism system of the region (Karakalpakstan and adjacent areas affected by the shrinkage of the sea, including the Aralkum, the Northern Aral Sea, the Lower Amu Darya Biosphere Reserve and the Muynak area); the subject is the socio-economic and environmental mechanisms, governance instruments and strategic pathways of sustainable tourism development in ecologically transformed territories.

The analytical framework integrates three models: the Triple Bottom Line (economic viability, social equity, environmental responsibility) [10], resilience theory (adaptability and systemic management under uncertainty) [11, 12] and community-based tourism theory (participation and benefit-sharing) [13]. They are complemented by international sustainability standards, in particular the GSTC criteria [14], and by the comparative experience of post-disaster destinations [15]. The study relies on secondary data, expert assessment, a suitability assessment of tourism forms and scenario analysis, and builds on earlier empirical studies of ecotourism in the region [16].

© Ushbu material Creative Commons Attribution 4.0 International (CC BY 4.0) litsenziyasi asosida tarqatiladi.

3. Main results

Theoretical level. Tourism has evolved from a narrowly economic activity into a multidimensional system combining economic, social, cultural and environmental components. Sustainable tourism is therefore treated not as a sectoral approach but as an integrative development model that requires coordination among stakeholders and policy levels. Tourism can reduce spatial inequalities, but its effectiveness depends on institutional support, targeted policy and mechanisms ensuring an equitable distribution of benefits.

Resource potential. The ecological catastrophe has created a resource base that cannot be replicated elsewhere: the dried seabed and the Aralkum landscapes, extreme climatic conditions, restoration programs, the Ustyurt Plateau and the cultural heritage of Karakalpakstan. In this sense the region can be interpreted as a form of "negative heritage" which, if managed ethically, generates educational value, scientific advancement and livelihoods. At the same time, the potential is constrained by infrastructure deficits, short length of stay, low visitor expenditure and the fragility of the transformed ecosystem.

Typology of tourism forms. The suitability assessment showed that scientific, educational, memorial, ecological and adventure tourism correspond most closely to the specific characteristics of the region, whereas conventional mass tourism formats are largely inappropriate.

Policy and economic mechanisms. Governance transformation, diversified investment mechanisms and product innovation are identified as three pillars of development. Uzbekistan's institutional framework, with its emphasis on decentralization, public-private partnerships and community-based approaches [17], provides a promising basis, provided that capacity building, inter-agency coordination and the meaningful participation of local communities are ensured. The investment priority analysis highlights transport infrastructure and accommodation as the critical bottlenecks [18].

4. Strategic scenarios

Three development pathways were constructed and evaluated. The conservative (baseline) scenario carries low short-term risks but would leave the region a niche and peripheral destination. The accelerated scenario, based on large-scale investment and aggressive marketing, promises rapid economic gains but creates risks of ecosystem degradation, pressure on scarce water resources, displacement of local communities and unmanaged externalities when governance lags behind growth. The sustainable scenario seeks a managed balance between economic expansion, environmental stewardship and social equity, prioritizing the quality, diversity and resilience of the tourism offer. It was confirmed as offering superior long-term prospects, with diversified eco-tourism products (desert expeditions, birdwatching, educational trails, scientific tourism) and cultural heritage tourism as its core priorities.

5. Practical tourism product: the extreme tour "Extreme in Moynaq"

To demonstrate how the proposed principles can be operationalized, an original market-ready product was developed on the basis of empirical analysis of the region's resources. It is a 3-day, 2-night 4x4 expedition of about 1,000 km along the Ustyurt Plateau, combining off-road driving with hiking. The route includes the Ustyurt chinks (cliffs and canyons), a view of the surviving Aral Sea, an abandoned Soviet testing site, the Barsakelmes salt plain and a night in a Karakalpak yurt camp. The tour targets physically prepared adventure travelers and includes scientific and educational elements, community-based accommodation and responsible environmental practices. It shows that ecological transformation can be valorized as a distinctive and commercially viable offer without commodifying

© Ushbu material Creative Commons Attribution 4.0 International (CC BY 4.0) litsenziyasi asosida tarqatiladi.

tragedy. The design follows a full product-development cycle: a verbal model of the tour, a service program, a technological map, an information sheet, quality control and a profitability calculation.

6. Scientific novelty

– **Integrated application** of the Triple Bottom Line, resilience theory and community-based tourism to the Aral Sea region, one of the world's largest ecological disaster zones.

– **Typology of tourism forms** substantiated for the region, with scientific, educational, memorial, ecological and adventure tourism as priorities.

– **Strategic scenarios** providing a methodological basis for long-term planning under ecological uncertainty and institutional transition.

– **Original tourism product** "Extreme in Moynaq" and recommendations on governance, economic mechanisms and investment models that reflect the 2023 legislative framework of Uzbekistan.

7. Conclusions and recommendations

The research hypotheses were substantially confirmed: the ecological transformation of the region creates globally significant resources capable of attracting specialized segments; an integrated approach that combines restoration, community participation and robust governance is superior to isolated infrastructure investments; and international standards and community-based models improve both economic viability and social equity. Sustainable tourism in post-crisis territories must be integrated with broader regional strategies, including ecological restoration, water management and social services, and community-based models are essential rather than merely preferable. Policymakers are recommended to prioritize:

(1) investment in air connectivity and road access to reduce the region's isolation;
(2) capacity-building programs for local entrepreneurs and hospitality workers;
(3) strict environmental management systems to prevent degradation from growing visitation;
(4) community benefit-sharing mechanisms for an equitable distribution of tourism revenues;
(5) international positioning of the region as a global destination for sustainability education and responsible travel.

Priorities for further research include primary visitor surveys, economic impact assessments, longitudinal monitoring, adaptation to climate change [19, 20] and cross-border tourism cooperation with neighbouring Central Asian states.

References

1. UN Tourism. Tourism and the Sustainable Development Goals. – Madrid: World Tourism Organization, 2023.
2. Micklin P. The Aral Sea Disaster // Annual Review of Earth and Planetary Sciences. – 2007. – Vol. 35. – P. 47–72.
3. Wang W. et al. Dust Emission and Transport in the Aral Sea Region // Geoderma. – 2022. – Vol. 424.
4. UNDP. The Aral Sea Region: Socio-economic and Environmental Assessment. – Tashkent: UNDP Uzbekistan, 2020. – 112 p.
5. Ministry of Tourism and Cultural Heritage of the Republic of Uzbekistan. Tourism Potential of Karakalpakstan. – Tashkent, 2024.
6. Presidential Decree on the Declaration of 2025 as the Year of Environment and Green Economy. – Tashkent, 2024.

© Ushbu material Creative Commons Attribution 4.0 International (CC BY 4.0) litsenziyasi asosida tarqatiladi.

7. Development Strategy "Uzbekistan – 2030". Presidential Decree No. UP-158. – Tashkent, 2023.
8. World Economic Forum. Travel and Tourism Development Index 2024. – Geneva, 2024.
9. Strategy Development Center of Uzbekistan. Tourism in Uzbekistan: Challenges and Development Prospects. – Tashkent, 2025. – URL: https://strategy.uz
10. Elkington J. Cannibals with Forks: The Triple Bottom Line of 21st Century Business. – Oxford: Capstone, 1997. – 402 p.
11. Gunderson L.H., Holling C.S. Panarchy: Understanding Transformations in Human and Natural Systems. – Washington, D.C.: Island Press, 2002. – 507 p.
12. Folke C. Resilience: The Emergence of a Perspective for Social-Ecological Systems Analyses // Global Environmental Change. – 2006. – Vol. 16, No. 3. – P. 253–267.
13. Global Sustainable Tourism Council (GSTC). GSTC Criteria for Destinations and Industry. – Washington, 2021.
14. Ritchie B.W. Crisis and Disaster Management for Tourism. – Bristol: Channel View Publications, 2009.
15. Saidmamatov O. et al. TOWS Analysis for Sustainable Ecotourism Development and State Support during the Pandemic: The Aral Sea Region of Uzbekistan // Turyzm/Tourism. – 2021. – Vol. 31, No. 1. – P. 53–67.
16. Decree of the President of the Republic of Uzbekistan No. PF-114 of July 27, 2023 "On Measures to Establish Effective State Management in the Fields of Culture and Tourism". – Tashkent: Official Gazette, 2023.
17. Norchayev A. Tourism Infrastructure Development in Uzbekistan. – Tashkent: TSUE Publishing, 2021. – 180 p.

© Ushbu material Creative Commons Attribution 4.0 International (CC BY 4.0) litsenziyasi asosida tarqatiladi.