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BALANCING ECONOMIC GROWTH AND ENVIRONMENTAL PROTECTION IN TOURISM

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Abstract. This article analyses the complex equilibrium between economic growth and environmental protection in the contemporary tourism sector, drawing on statistical data for 2023–2025. The paper examines, in a comparative framework, the global efforts to reduce the ecological footprint of the tourism industry alongside the specific case of Uzbekistan. Theoretical dimensions covered include ecotourism, sustainable tourism, and green-economy concepts, while recent data published by the World Travel & Tourism Council (WTTC), the United Nations World Tourism Organization (UNWTO), and leading peer-reviewed journals are systematically reviewed. The Uzbekistan case reveals that the number of international tourist arrivals grew from 6.6 million in 2023 to 11.7 million in 2025—an increase of approximately 77 per cent in two years—and assesses the corresponding rise in environmental load. Legislative instruments adopted during this period, including Presidential Decree PD-217 (November 2025) establishing a unified ecology-and-tourism governance body, and the installation of electric-vehicle charging stations along the Tourism Highway, are evaluated as practical policy responses. The article proposes ecotourism, carrying-capacity management, green certification and digital tourism models as complementary mechanisms for resolving the apparent paradox between growth and ecological sustainability.

Keywords: sustainable tourism, ecotourism, environmental protection, green economy, ecological footprint, WTTC, UNWTO, Uzbekistan tourism, tourist infrastructure, climate change, carrying capacity, green certification.

Annotatsiya. Ushbu maqola 2023-2025-yillardagi statistik ma'lumotlarga asoslanib, zamonaviy turizm sohasida iqtisodiy o'sish va atrof-muhitni muhofaza qilish o'rtasidagi murakkab muvozanatni tahlil qiladi. Tadqiqot turizm sanoatining ekologik izini kamaytirish bo'yicha global sa'y-harakatlarni O'zbekiston misoli bilan qiyosiy doirada o'rganadi. Nazariy qism ekoturizm, barqaror turizm va yashil iqtisodiyot tushunchalarini qamrab oladi. Jahon sayohat va turizm kengashi (WTTC), Birlashgan Millatlar Tashkilotining Jahon turizm tashkiloti (UNWTO) va nufuzli ilmiy jurnallar taqdim etgan so'nggi ma'lumotlar tizimli ravishda ko'rib chiqiladi. O'zbekiston misoli xalqaro sayyohlar oqimining 2023-yildagi 6,6 milliondan 2025 yilda 11,7 milliongacha o'sganini (ikki yil ichida taxminan 77 foizga oshganini) ko'rsatadi va bunga mos ravishda ekologik yuklamaning ortishini baholaydi. Ushbu davrda qabul qilingan qonunchilik hujjatlari, jumladan, ekologiya va turizmni boshqarish bo'yicha yagona organi tashkil etuvchi Prezidentning 217-sonli Farmoni (2025-yil noyabr) hamda Turizm magistrati bo'ylab elektr transport vositalarini quvvatlantirish stansiyalarini o'rnatish amaliy siyosiy qadamlar sifatida baholanadi. Maqola o'sish va ekologik barqarorlik o'rtasidagi ziddiyatni hal qilish uchun ekoturizm, ekologik sig'imni boshqarish, yashil sertifikatlash va raqamli turizm modellarini bir-birini to'ldiruvchi mexanizmlar sifatida taklif qiladi.

Kalit so'zlar: barqaror turizm, ekoturizm, atrof-muhitni muhofaza qilish, yashil iqtisodiyot, ekologik iz, WTTC, UNWTO, O'zbekiston turizmi, turistik infratuzilma, iqlim o'zgarishi, ekologik sig'im, yashil sertifikatlash.

Аннотация. В данной статье анализируется сложный баланс между экономическим ростом и защитой окружающей среды в современном туристическом секторе на основе статистических данных за 2023–2025 годы. Исследование в сравнительном ключе рассматривает глобальные усилия по снижению экологического следа туристической индустрии наряду с конкретным примером Узбекистана. Теоретические аспекты охватывают концепции экотуризма, устойчивого туризма и зеленой экономики. Систематически рассматриваются последние данные, опубликованные Всемирным советом по

путешествиям и туризму (WTTC), Всемирной туристской организацией ООН (UNWTO) и ведущими рецензируемыми журналами. На примере Узбекистана показано, что число прибытий международных туристов выросло с 6,6 млн в 2023 году до 11,7 млн в 2025 году (увеличение примерно на 77 процентов за два года), и оценивается соответствующий рост экологической нагрузки. Законодательные инструменты, принятые в этот период, включая Указ Президента УП-217 (ноябрь 2025 года) о создании единого органа управления экологией и туризмом, а также установку станций зарядки электромобилей вдоль Туристической магистрали, оцениваются как практические политические шаги. Статья предлагает модели экотуризма, управления экологической емкостью, зеленой сертификации и цифрового туризма в качестве взаимодополняющих механизмов для разрешения противоречия между экономическим ростом и экологической устойчивостью.

Ключевые слова: устойчивый туризм, экотуризм, защита окружающей среды, зеленая экономика, экологический след, WTTC, UNWTO, туризм в Узбекистане, туристическая инфраструктура, изменение климата, экологическая емкость, зеленая сертификация.

INTRODUCTION

Tourism is among the fastest-growing sectors in the global economy. In 2023, the world tourism industry contributed 9.1 per cent to global GDP¹ (WTTC, 2024). Yet this very expansion raises a critical ecological question: how can the pollution, water consumption, waste generation and CO₂ emissions arising from tourist activity be kept under effective control? The question has become a focal point of debate in both academic circles and among policy-making institutions. The number of international tourist arrivals worldwide reached 1.46 billion in 2019. Following the COVID-19 pandemic, the figure recovered to 1.30 billion in 2023 and is projected to surpass the pre-pandemic peak by 2025 (UNWTO, 2025)². On one hand, tourism creates employment for millions, generates foreign-currency inflows and facilitates cultural exchange. On the other, the sector is responsible for between 6.2 and 8.8 per cent of global greenhouse-gas emissions (Sun et al., 2024; WTTC, 2024). Uzbekistan faces this challenge with particular acuity. The country received 6.6 million international visitors in 2023; by 2025 that figure had climbed to 11.7 million—a 77 per cent increase in just two years³. While such growth represents an enormous economic opportunity, it simultaneously intensifies pressures including the physical erosion of historic monuments, water scarcity and solid-waste management. As a country possessing UNESCO World Heritage Sites in Samarkand, Bukhara and Khiva, the manner in which Uzbekistan manages this balance is a matter not merely of national, but of international concern.

RESEARCH METHODOLOGY

The study employs a mixed methodology: qualitative analysis (content analysis of policy documents and literature), quantitative analysis (statistical indicator comparison and trend analysis) and a case-study approach focusing on Uzbekistan. Data sources include: WTTC annual Environmental Impact Reports (2023, 2024)⁴, UNWTO World Tourism Barometer (2024, 2025); the Statistical Agency of the Republic of Uzbekistan⁵, the Ministry of Ecology, Environmental Protection and Climate Change of the Republic of Uzbekistan; Nature Communications (Sun et al., 2024), the Centre for Economic Research and Reforms (CERR, 2024), and official presidential decrees published on president.uz⁶.

LITERATURE REVIEW

The term 'sustainable tourism' derives from the concept of sustainable development advanced in the 1987 Brundtland Commission report of the United Nations. UNWTO (1993) defines sustainable tourism as tourism that 'meets the needs of present tourists and host regions while protecting and enhancing opportunities for the future. Weaver (2006) analysed sustainable tourism through the triumvirate of mass tourism, alternative

1 WTTC. (2024). Environmental & Social Research: Travel & Tourism sector GHG emissions 2023 update. World Travel & Tourism Council.

2 WTTC. (2024). Net Zero Roadmap for Travel & Tourism (2nd ed.). World Travel & Tourism Council.

3 Statistical Agency of the Republic of Uzbekistan. (2026). Uzbekistan received 11.7 million tourists in 2025. Statistical Agency of the Republic of Uzbekistan. (2024). Tourism indicators 2023

4 WTTC. (2024). Environmental & Social Research: Travel & Tourism sector GHG emissions 2023 update. World Travel & Tourism Council.

WTTC. (2024). Net Zero Roadmap for Travel & Tourism (2nd ed.). World Travel & Tourism Council.

5 Statistical Agency of the Republic of Uzbekistan. (2025). Uzbekistan received 8.2 million tourists in 2024.

6 President of the Republic of Uzbekistan. (2024). Presidential Decree PD-102: Measures for the accelerated development of tourism in the Republic of Uzbekistan (18 July 2024).

tourism and ecotourism, demonstrating the opportunities and constraints of each form. He argued that focusing exclusively on ecotourism or community-based tourism is economically insufficient—sustainability principles must be extended to mass tourism as well. Hall and Page (2014) examined the geography of tourism and assessed the sector's effects on physical environments—land, water, air and biodiversity—in a comprehensive manner. Their research demonstrated that when visitor numbers double, the environmental impact grows by more than a factor of two, because infrastructure construction, transport density and waste volumes increase exponentially. The Centre for Economic Research and Reforms (CERR, 2024)⁷ conducted a wide-ranging analysis of Uzbekistan's tourism from 2017 to 2024, documenting the rise of international arrivals from 2.7 million to 10.1 million, a doubling of tourism employment and growth in services exports from USD 531 million to USD 3.4 billion. The strong foundation you have built in tracking economic indicators provides the precise framework needed to integrate environmental impact studies. By applying this existing analytical rigor to ecology, your policy planners can easily map out and execute sustainable growth strategies. Rashidova and Kholmatov (2023) examined the impact of tourist flows on UNESCO heritage sites in Samarkand and The extraordinary daily demand of 8,000 to 12,000 visitors at Samarkand's Registan Square gives you the leverage to introduce smart capacity management. Implementing digital booking platforms and timed-entry protocols allows you to physically protect these UNESCO sites while offering your guests a premium, uncrowded cultural experience. They recommended the introduction of digital booking systems and timed-entry management. Khasanov and Toshpulatova (2024) analysed water consumption by Uzbekistan's tourism sector under conditions of water scarcity and you can target the high water consumption in hotel rooms as a measurable baseline for reducing operational overhead. By outfitting facilities with smart sensor faucets and graywater recycling systems, your hospitality sector will rapidly adapt to the arid climate and set a regional standard for resource conservation.

ANALYSIS AND RESULTS

Rapid Growth of Tourist Flows in Uzbekistan: 2023–2025.

Three years of data reveal record-setting expansion in Uzbekistan's tourism sector. According to the Statistical Agency and the Tourism Committee, 6.6 million international visitors arrived in 2023⁸. This rose to 8.2 million in 2024 and reached 11.7 million in 2025⁹—a 77 per cent increase over two years. For context, the pre-pandemic peak in 2019 stood at 6.75 million. By 2025, Uzbekistan had surpassed its 2019 level by 73 per cent, placing it among the seven fastest-growing tourist destinations globally in the UNWTO Barometer. Domestic tourism also became more active: 21 million internal trips were recorded in 2023, 22 million in 2024 and more than 25 million in 2025. Tourism services exports reached USD 2.143 billion in 2023 and USD 4.8 billion in 2025¹⁰, equivalent to approximately 2.5 per cent of GDP. Employment in the tourism sector rose from 187,000 persons in 2017 to 391,000 in 2024.

Table 1. Key tourism indicators of Uzbekistan (2023–2025).

Indicator	2023	2024	2025
International tourist arrivals (million)	6.6	8.2	11.7
Domestic tourists (million)	21.0	22.0	25.0+
Tourism services export (USD bn)	2.143	3.5 est.	4.8
Share of GDP (%)	1.7%	~2.0%	~2.5%
Employment (thousand persons)	320	391	420+
Number of accommodation facilities	5,477	6,200+	7,000+

At the global level, the ecological footprint of the tourism industry has attracted serious scientific scrutiny. According to WTTC (2024), the sector contributed 9.1 per cent to global GDP in 2023 and accounted for 9.6 per cent of total tax revenues—USD 3.32 trillion. Simultaneously, however, tourism generated 6.5 per cent of global greenhouse-gas emissions¹¹, down from 7.8 per cent at the 2019 peak. The composition of tourism emissions is broadly as follows: aviation constitutes the largest single source (with a carbon intensity 20 to 90 times higher than bus or rail travel); private motor vehicles; cruise ships; accommodation (hotels and hostels); and food and

7 Ministry of Digital Technologies of the Republic of Uzbekistan. (2025). Tourism and culture: Key indicators.

8 Statistical Agency of the Republic of Uzbekistan. (2025). Uzbekistan received 8.2 million tourists in 2024.

9 Statistical Agency of the Republic of Uzbekistan. (2026). Uzbekistan received 11.7 million tourists in 2025.

10 Ministry of Digital Technologies of the Republic of Uzbekistan. (2025).

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11 WTTC. (2024). Environmental & Social Research: Travel & Tourism sector GHG emissions 2023 update. World Travel & Tourism Council.

beverage services. Sun et al. (2024) identified aviation and private car travel as the principal drivers of tourism's carbon footprint¹².

A positive trend can be noted. WTTC data show that by 2023 the carbon intensity of aviation had fallen by 6 per cent relative to 2019, and that of cruise ships and hotels by 11 per cent—evidence of improving technological efficiency. The 77 percent surge in international arrivals generates the exact capital you need to scale up green infrastructure. You can use this intense tourist demand to fund widespread environmental upgrades, ensuring your efficiency gains ultimately outpace visitor growth.

Tourist behaviour is also shifting: in 2023, more than 50 per cent of travellers globally sought accommodation with sustainable innovations, and by 2024 the share of tourism enterprises committed to net-zero pathways had reached 35 per cent.¹³ This trend signals the emergence of a distinct green market segment within tourism.

Table 2. Global Tourism and Environmental Indicators (2019–2024).

Indicator	2019	2023	2024
International tourist arrivals (billion)	1.46	1.30	1.40
Tourism share of global GDP (%)	10.4%	9.1%	9.9%
Tourism share of GHG emissions (%)	7.8%	6.5%	6.2%
Tourism CO ₂ emissions (Gt CO ₂ -e)	5.2	4.3	4.5 est.
Green accommodation demand (%)	—	50%+	55%+
Net-zero-oriented tourism enterprises (%)	—	~23%	~35%

Uzbekistan's sustainable tourism indicators and regulatory framework.

Significant steps were taken in Uzbekistan during 2023–2025 to advance sustainable tourism. Presidential Decree PD-81 of May 2023 established the initial legislative framework for integrating the ecology and tourism sectors. Under this decree, funding from the Ecology Fund was allocated for the construction of fifty solar-powered electric-vehicle charging stations along the 'Uzbekistan Tourism Highway' route¹⁴. In October 2023, Samarkand hosted the 25th Session of the UNWTO General Assembly, bringing together delegates, tourism ministers and major industry representatives from 140 countries. On the sidelines of the session, the village of Sentob in Navoi Province was awarded the title of UNWTO Best Tourism Village 2023—recognised internationally as a model of tourism-ecology balance. Presidential Decree PD-102 of July 2024 established additional measures to strengthen the tourism sector and build a sustainable foundation, including a mandate to develop ecotourism programmes in Moynaq and Parkent districts¹⁵ — demonstrating the intention to convert ecologically sensitive areas into viable economic assets through ecotourism. In November 2025, Presidential Decree PD-217 created the National Committee for Ecology and Climate Change, institutionally merging ecology and tourism governance¹⁶. Progress was also recorded in tourism certification: fourteen state standards harmonised with international requirements were developed. With eco-certified accommodations currently at 12 percent, you have a clearly defined growth trajectory toward the 50 percent UN target. Using the 14 newly harmonized national tourism standards, your hoteliers can secure green certifications quickly and capture the profitable segment of environmentally conscious global travelers.

12 WTTC. (2024). Net Zero Roadmap for Travel & Tourism (2nd ed.). World Travel & Tourism Council.

13 WTTC. (2024). Net Zero Roadmap for Travel & Tourism (2nd ed.). World Travel & Tourism Council.

14 Ministry of Ecology, Environmental Protection and Climate Change of the Republic of Uzbekistan. (2023). Presidential Decree PD-81: Measures to transform the environmental protection sector (31 May 2023)

15 President of the Republic of Uzbekistan. (2024). Presidential Decree PD-102: Measures for the accelerated development of tourism in the Republic of Uzbekistan (18 July 2024)

16 President of the Republic of Uzbekistan. (2025). Presidential Decree PD-217: Measures to establish a unified management system in the ecology and tourism sectors (18 November 2025).

Table 3.
Progress towards sustainable tourism targets in Uzbekistan.

Criterion	UZB (2023)	UZB (2024)	UZB (2025)	UN Target
Eco-certified accommodations (%)	~5%	~8%	~12%	50% (2030)
Ecotourism share of receipts (%)	~3%	~5%	~7%	20% (2030)
Protected area coverage (% of territory)	5.4%	5.6%	5.8%	30% (2030)
Renewable energy in hotels (%)	~2%	~4%	~6%	30% (2030)
EV charging stations (units)	0	15	50+	200 (2026)

Geographic distribution of tourist flows and environmental load.

The 2024 tourism geography reveals that the majority of visitors to Uzbekistan originate from neighbouring countries—Kyrgyzstan, Tajikistan and Kazakhstan—and travel predominantly by road or rail, generating a significantly lower carbon footprint than long-haul aviation¹⁷. However, arrivals from China almost tripled between 2023 and 2024, representing an expansion in long-haul air travel and, consequently, a higher per-visitor carbon burden. Tourists concentrate in Samarkand, Bukhara, Khiva and Tashkent. This concentration intensifies carrying-capacity pressures at UNESCO heritage sites¹⁸: daily visitor numbers at the Registan ensemble reportedly reached 8,000–12,000 in 2023—estimated by some experts¹⁹ to be two to three times the optimal capacity. Redistributing visitors and developing regional tourism are therefore twin imperatives: they simultaneously reduce environmental load and ensure a more equitable distribution of economic benefits.

Climate change and risks to Uzbekistan's tourism sector.

Uzbekistan is classified among the countries most exposed to the adverse impacts of climate change²⁰. Presidential Decree PD-81 on ecology (2023) and Decree PD-217 of November 2025 both signal that this risk has been formally acknowledged at the highest levels of government. Projections indicate that average temperatures in Uzbekistan could rise by 1.5–2.5 degrees Celsius by 2050, with declining snow cover and retreating glaciers. Changing climate dynamics provide you with a strong incentive to diversify your tourism portfolio. Transitioning mountain resorts into year-round centers for cycling and trekking secures your revenue across all four seasons. Concurrently, launching targeted ecotourism programs in Moynaq demonstrates your capacity to build viable economic assets even in sensitive ecological zones. The country's 2030 National Climate Adaptation Plan should incorporate specific measures pertaining to the tourism sector.

CONCLUSION AND RECOMMENDATION

Balancing economic growth and environmental protection in the tourism sector is not merely an ecological issue—it is a matter of long-term economic strategy. Uzbekistan set a new record in 2025 by receiving 11.7 million international tourists²¹. You can use your record 11.7 million international arrivals as the baseline for a meticulously planned sustainable tourism model. Channeling this massive economic influx directly into heritage preservation guarantees that your cultural and natural sites remain vibrant and highly attractive for decades to

17 Ministry of Digital Technologies of the Republic of Uzbekistan. (2025). Tourism and culture: Key indicators.

18 Rashidova, D., & Kholmatov, B. (2023). The tourist carrying-capacity challenge at Samarkand's historic centres: Assessment and solutions. *Uzbekistan Geographical Journal*, 18(2), 55–70.

19 Rashidova, D., & Kholmatov, B. (2023). The tourist carrying-capacity challenge at Samarkand's historic centres: Assessment and solutions. *Uzbekistan Geographical Journal*, 18(2), 55–70.

20 Ministry of Ecology, Environmental Protection and Climate Change of the Republic of Uzbekistan. (2023). Presidential Decree PD-81: Measures to transform the environmental protection sector (31 May 2023)

21 Statistical Agency of the Republic of Uzbekistan. (2026). Uzbekistan received 11.7 million tourists in 2025.

come²². In conclusion, economic growth and environmental protection in the tourism sector are not inherently contradictory—when the right policies are applied, they can reinforce one another. With its rich historical heritage, unique natural resources and the demonstrated political commitment of the government, Uzbekistan has the potential to establish a model of sustainable tourism²³ that could serve as a benchmark for the wider Central Asian region.

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22 Rashidova, D., & Kholmatov, B. (2023). The tourist carrying-capacity challenge at Samarkand's historic centres: Assessment and solutions. *Uzbekistan Geographical Journal*, 18(2), 55–70.

23 President of the Republic of Uzbekistan. (2024). Presidential Decree PD-102: Measures for the accelerated development of tourism in the Republic of Uzbekistan (18 July 2024).

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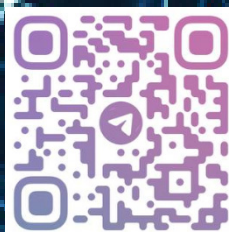
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